SAE*International*™

SURFACE VEHICLE STANDARD

SAE J2540-2

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**ITIS Phrase Lists
(International Traveler Information Systems)**

Rationale

This 4th edition of the standard provides additional phrases and categories developed beyond those defined in the prior editions and incorporating continuing feedback from early deployment experience. Major additions in this release include phrase elements needed to support MUTCD sign descriptions.

Foreword

Prepared for use by the ATIS committee of the SAE by SubCarrier Systems Corp (SCSC).

```
Create_time:      02:30:27 PM Thursday, April 30, 2009
Extracted from:   ITIS_Rev04_00_02.ITS [Mod: 4/30/2009 2:22:26 PM]
Build:            First_Word, Ver: 0.8.277 On node C:136-5448-3969
```

Table of Contents

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1.   Scope

This standard provides a table of textual messages meeting the requirements for expressing "International Traveler Information Systems" (ITIS) phrases commonly used in the ITS industry. The tables provided herein follow the rules of SAE J2540 and therefore allow a local representation in various different languages, media expressions etc… to allow true international use of these phrases. The phrases are predominantly intended for use in the description of traffic related events of interest to travelers and other traffic practitioners. Other phrases exit for other specific specialty areas of ITS, and all such phrases follow a set of encoding and decoding rules outlined in SAE J2540 to ensure that the use of these phrases in messages remain interoperable between disparate types of user equipment.

Implementers are cautioned to obtain the most recent set of tables by means of the ITS data registry, a process which involves the SAE and other standards setting organizations and which is intended to maintain and enhance the level of harmonization among ITS standards set by each of the organizations.

This standard SHALL define the normative index values to be used to provide phrases needed by ITS practitioners. This standard provides non-normative textual phrases which MAY be used by implementers to ensure intelligible results. This standard SHALL follow the formats and rules established in SAE J2540 in the expressions, manipulations, and use of such tables.

It should be pointed out that within the rules established by this standard a variety of final tables are all considered "compliant" with the standard, and may vary as fits the needs of implementers.

2.   References

2.1   Applicable Documents

2.1.1 SAE PUBLICATIONS—Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J2540—Messages for Handling Strings and Look-Up Tables in ATIS Standards (Published July 2002).

SAE J2540-1—RDS Phrase Lists (Published July 2002).

SAE J2540-3—National Names Phrase List (Published January 2002).

SAE J2735—Dedicated Short Range Communications (DSRC) Message Set, 2nd edition. (November 2009 and its published successors).

Of historical interest only:

SAE J2313—On-Board Land Vehicle Mayday Reporting Interface, May 2000.

SAE J2369—Standards for ATIS Message Sets Delivered Over Reduced Bandwidth Media, June, 2000.

2.1.2 ITE PUBLICATIONS—Available from ITE, 525 School Street SW, Suite 410, Washington, DC 20024.

Message Sets for External Traffic Management Center Communication (MS/ETMC2), TM 2.01, Rev. 2.0, February 2001.

2.1.3 FHWA PUBLICATIONS—Available from the url link noted below.

Manual of Uniform Traffic Control Devices (MUTCD), 2003 edition with amendments, adopted November 20th 2003 and its successors. Available at: http://mutcd.fhwa/dot.gov

3.   Definitions

The definitions found in SAE J2540 are incorporated herein.

4.   Overview

This standard provides a set of phrases intended to describe traffic incident situations of interest to the traveler. It is intended to be used in all ATIS message set standards, and is expected to be also used in a number of other ITS industry standards as well. The sole exception to this is expected to be some very limited bandwidth media devices (and example would be the RDS SubCarrier media) when only a single phrase code can be allowed.

The specific rules of use can be found in the standard describing the message which uses these phrases. This document defines the phrases themselves. The SAE J2540 document defines the use of the phrases in practice, while each using standards defines the placement of the phrases in a message and any additional restrictions which are needed. Thus, all uses of the phrases adhere to the rule set defined in SAE J2540, but not all messages, or all media, allow support for the full set of possible features. Two specific examples are

worthy of note. SAE J2369, Revision 1.0 allows only a subset of the phrase table rules because this standard was established before the more general rules of J2540. In the "ERM Message" of the TMDD message set, some similar restrictions are used. For example, the insertion of free text is not allowed in TMDD work. Consult the specific standard for complete rules and restrictions with regard to using the phrases. As a general rule, other standards efforts are encouraged to use all of the defined ITIS phrase categories so that they can make use of the ever increasing range of expression supported and so that exchanges between the various standards are facilitated.

The phrases outlined in this document often also serve as a "prompting" text phrase in many traffic system operator console designs, which when sent may involve further translations. Although this is beyond the scope of this standard, using the various phrases to assist operators in correctly assembling a suitable descriptive phrase is highly encouraged.

5. Operating Concepts

This section outlines the use of the contents of the table messages and data element structures and provides an overview of the operational exchange used in message transactions.

5.1 Use in General ITS messages

The basic concept of the ITIS phrases is that a collection of short textual phrases can be used the vast majority of the time to express common traffic situations and can be easily coded and therefore standardized as a sequence of numbers. Various uses of these numbers can then occur at the received end. For the purposes of a preliminary operating concept, we will consider that they are simply reconstituted into the same textual phrases at the receiver.

The purpose of this document is simply to establish the best possible set of such phrases. Ultimately, this is an unobtainable goal, as local practices vary, the need for new phrases is always present, and other maintenance issues arise. These are all dealt with in SAE J2540 and will not be considered here further.

When used in general messages there are a number of patterns which are allowed in order to meet user and data issuer needs. Consult J2540 for complete discussion of this, including the rules for using tokens to separate indexes from text. Conceptually two major types of uses are found:

1. Strings which are mostly free text with the occasional index-phrases inserted as needed
2. Strings which are mostly sequences of index-phrases with occasional free text inserted as needed

The latter is most common and SHOULD be preferred when data creation implementers have a choice. Implementers of data reception equipment should be prepared to accept any valid J2540 format.

The ITIS list provides a rich set of useful phrases and as a result is intended to largely reduce the need to use "free text" in creating the composite phrase. Such text is typically limited to "unusual noun" terms or unique explanatory phrases, such as that shown in within the brackets of the following: "Rail Service Not Operating Due to: Herds of [pink] Animals, [watch out slippery spot on road surface] Hazardous materials spill ". When such text is used, it is recommended that the resulting phrase set remains useful if the additional free text information is removed, which may occur in some delivery environments.

Observe also that this document provides no recommendation regarding the ordering of such phrases; as a result syntactically valid messages which produce poorly constructed human language can result. Some standards users address this in varying degrees of detail, but in general it is a function of the message creation system and not covered by the various message sets.

Regardless of which format of string content ordering is used, implementers SHALL follow the rules and process of SAE J2540 to insure that successful encoding and decoding of the data shall occur by any party using this standard.

In anticipation of making SAE ATIS messages more like those found in the rest of ITS (notably TMDD in this case), it is recommended that implementers group message content into three distinct areas of "description of the event," "cause of the event" and "advice regarding what to do" and append all three areas into a single textual stream when the bearer message does not provide separate areas for each of these. Further, between the first and second items the phrase "Due to: " should be inserted and between the last two, the phrase "Advice: " should be inserted. It is anticipated that future revisions of the ATIS standard will provide three distinct places to insert SAE strings [to be labeled *description*, *cause* and *advice*] and that the last two will be optional in nature. When mapping message content from another ITS message which supports this three-part construction to one which does not, the above recommendation SHOULD be followed.

5.2 Use in RDS systems

In general, the ITIS phrases cannot be used in the existing RDS media; however the vast majority of so-called RDS systems are not in fact using a SubCarrier transmission media (the point of actual restriction) but are in fact using the RDS phrases as a convenient interim standard from which to construct textual descriptions. It is recommended that these users SHOULD revise their systems to use the ITIS phrases (as well as other ITS message set standards) as conditions allow.

This requires some degree of mapping to take place and ultimately must be decided by the implementers as best fits local needs. In mapping from the use of RDS phrases to that of ITIS phrases, two general cases occur.

In the first case, a single RDS message can be mapped to one or more ITIS messages. At times this mapping is subjective, but as ITIS offers a wider set of expressions this is not overly problematical. An example would be RDS phrase #324 which is rendered as "Disabled vehicle, Right lane blocked ". An equivalent message made up of three ITIS components would be [0534,8196,0775] which is rendered as "disabled vehicle right lane blocked ". Observe that capitalization and punctuation marks can vary slightly in this.

The second case involves the limited use of numerical values in messages. Historically RDS allowed only a few "common" numbers to occur in the messages.[1] In ITIS phrases, as a function of the methods of SAE J2540, numerical values can be inserted in between phrases as needed to express values.[2] An example would be RDS message #421 which is rendered as "Closed ahead, Stop and go traffic for 5 miles". An equivalent message made up of ITIS components would be [0771,0258,7721,0005,8712] which is rendered as "Closed ahead Stop and Go traffic for 5 miles ". Depending upon the way in which the numeric value is encoded, ordinal post fix characters can also be automatically added at expansion. In addition, a list of common unit values (seconds, minutes, dollars, mph, miles, etc…) is also present in the ITIS list.

A number of the "message canceled" type of phrases have been preserved in ITIS list for backward compatibility. As an operational concept the use of the these phrases is not encouraged. Specific messages of this type which may be removed or replaced in the future are denoted with the comment "Not Recommended" in the tables.

In addition it should be pointed out that the data contents found in the ATIS messages (and the rest of ITS) contain a broad spectrum of other elements which are intended to hold concepts like the time period over which a message is valid. These data elements SHOULD be used as intended and the phrase sections of the message SHOULD NOT be used to circumvent them.

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[1] The latter "multi-block" RDS messages of Alert+ does allow a value to be delimited in an element of the message which is then inserted into the phrases based on a predetermined use and location. This was considered and rejected in favor of having a more generalized approach in J2540.

[2] Not all uses of ITS can support this; for example ERM (a message which is part of the TMDD standards) prohibits numeric and free text insertions. In the ERM case, other elements in the message can contains such values.

5.3   Use in the TMDD ERM Message

When used in constructing an Event Reporting Messages (ERM) message from the TMDD MS/ETMC2 message set some additional considerations and restrictions apply in order to maintain a dual perspective on the encodings found in the ERM message. This allows an "ERM-centric" practitioner to exchange data with an "ATIS centric" one without involving translations which would detract from interoperability.

The key to this dual view is to appreciate that: ATIS tends to view a collection of phrases as representing one atomic element which can be uniformly handled upon receipt, the ERM perspective describes an event element as the structured combination of phrases, causes, advice, quantifiers and free text each in its own ASN1 element. Both perspectives are valid. ERM receiving implementations can use this to good effect in various sorting and automatic classification functions (which the SAE perspective also supports).   The following is an excerpt from the key portion of the ERM message.

```
Event-description ::= CHOICE  {
     event-phrase              [1]   SEQUENCE OF Event-type,
     event-cause               [2]   SEQUENCE OF Event-type,
     event-advice              [3]   SEQUENCE OF Event-advice,
     event-quantities          [4]   SEQUENCE OF Event-quantities,
     event-additional-text     [5]   SEQUENCE OF Event-additional-text
     }
```

The heart of the dual view is that first three elements above fragment of code is considered the same as the one below, expressed in a more "ATIS centric" way.

.

```
Event-description ::= CHOICE  {
     event-phrase      [1]   TheString,
     event-cause       [2]   TheString,
     event-advice      [3]   TheString
     }
```

In both cases, a common code list is used. The ERM elements of *EventType* and *EventAdvice* map directly to the 16-bit values used in ITIS. From an ERM perspective the first octet represents which data element (i.e. *EventTypeXXX*) is used, while the second octet represents the specific phrase code of the phrase within the data element.   Implementers are urged to review both the ERM message specification in the TMDD standard and the SAE J2540 standard to fully understand the low level ASN1 tagging issues involved.

Harmonization of these lists will be maintained by the ITE and SAE as a part of the data registry process. Observe that the ASN1 terms provided in TMDD are in fact the ASN1 value enumerations for each code. The recommended text for the code is defined by this document. In most cases, it is readily derived from the ASN1 definition used in ITE.[3]

There are several additional restrictions in using the ITIS list in ERM in addition to adherence to the requirements of SAE J2540 as follows.

Precedence: The ERM ASN1 found in the adopted ITE TMDD standard is the definitive authority for ERM message.

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[3] Again, local variants in such definitions can be readily established when needed as per J2540 rules.

Quantities: The ERM requires that quantities used in situation descriptions adopt the standard (usually metric) quantity definitions and units specified by TMDD, NTCIP, SAE and other ITS standards bodies. These values can be converted to other units such as miles, pounds, etc., in the end-user application, if desired. SAE J2540 allows users to send an undefined numerical value followed by a unit phrase, such as "1000" "pounds". This practice is not recommended when a data element (such as the quantities category) exists in the message set. Specifically, implementers SHALL NOT use this ability to add values and units in strings to circumvent the quantities found in a message set.

Sub Set: The ERM message definition provides most, but not all of the phrases found in ITIS. Typically these are data elements which in ERM can be expressed somewhere else in the message itself. The TMDD data element *Event-indicators* (TMDD #xxx) is an example of this.   Such phrases are a part of ITIS in order to allow the subject concept to be expressed in those messages which do not have an allocated place for it.   The use of ITIS phrases in such an ITE message SHALL be restricted to those elements which the defining ITE standard allows.

Textual Use: The ERM message definition allows free text to be used at any point in the description, along with standards-defined phrases, causes, advice and quantities. However, this text is placed in the data element assigned to hold it and not inserted into other locations.

Language: The language of free text occurring in the ERM message is typically defined in an Interchange Agreement - a working agreement drawn up between message exchange partners. Partners can agree to use English, French, Spanish, or any other language of their choice for routing exchanges. If desired, the language of the free text can also be indicated for a specific message exchange using optional TMDD Data Element #3816 within ERM.   Typically, this is used if the normally agreed upon language must be changed in a specific message. Text occurring in the rest of the ERM message is presumed to be of table type #0. This is a reserved type which implies that the text will be formatted in Latin_1 characters and employ no indexing (e.g. simple free text).

Table Types: The ERM message definition presumes that the table entries are static in nature and that entries are never reused. This is reflected in the table header values outlined further in this document.

Local Use: ERM allows the standard ITIS phrases to be varied or translated for local applications, e.g. "traffic stopped" can be expressed as "stationary traffic" or "bouchon" if desired in Nova Scotia or Quebec. Like all users of these phrases, makers of ERM message receiving equipment are free to express these tables in whatever rendering, language, or media formats suit their specific needs. Within this, local additions to the table MAY still be added as required and SHALL occupy ranges between 129 and 250 in the various tables. This will be in accordance with the rules of J2540[4] for local list additions, as well as not violating the specifications of TMDD.

Supporting Messages: Implementers SHOULD also implement the messages of SAE J2540 which support the automatically downloading, updating and translations of table and table entries to users.

Like all users of these phrases, makers of ERM message receiving equipment are free to express these tables in whatever rendering, language, or media formats suit their specific needs.

5.4   Use in the IEEE Incident Management Message Set

The IEEE has developed an ITS message set for use between the dispatch centers of agencies responding to various incidents. This standard makes a very heavy reuse of date elements found in the rest of ITS (including TMDD and SAE lists which were effected by the harmonization of the ITIS lists).   The standard has been forced to adopt since being issued (as 1512-2000) to reflect further changes in ITS harmonization. Implementers must refer to the (as yet not balloted) changes document for the definitive

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[4]   SAE J2540 provides ways to do this with varying degrees of formality. One can simply pick a new table number and add whatever is wanted in the least "registered" case, while other ranges of use provide for national and regional registry control to occur.

information regarding the use of ITIS and other code list changes made to this standard. Some implementation insights are provided below.

In general the adoption of ITIS phrases in 1512-2000 can be classed into two types of use. The first, where formerly free text was used for various descriptions is very must like the changes found in SAE ATIS and other standards. The full feature set of J2540 is employed and a mixture of both free text and index values can be found in the resulting ASN1 element. In the second case, various subsets of the event types where used to clarify and sort the type of event being used. In this instance a subset of ITIS phrases is in general used (while free text is prohibited).

Precedence: The ASN1 found in the adopted IEEE 1512-2000 and its anticipated updated recommendation standard is the definitive authority for the structure of 1512 messages.

Quantities: Within the message set some specific data elements are provided to hold quantities of information (for example a data element to be used for the number of injured persons). Implementers SHALL NOT use the ability of J2540 to add values and units in strings to circumvent the quantities found in a message set.

Language: Text occurring in the 1512-2000 message is presumed to be of table type #0 if not table type is denoted. This is a reserved type which implies that the text will be formatted in Latin_1 characters and employ no indexing (e.g. simple free text).

Local Use: The 1512-2000 allows the standard ITIS phrases to be varied or translated for local applications, e.g. "traffic stopped" can be expressed as "stationary traffic" if desired. Local additions to the table MAY still be added as required and SHALL occupy ranges between 129 and 250 in the various tables. This will be in accordance with the rules of J2540[5] for local list additions, as well as not violating the specifications of IEEE 1512-2000.

Supporting Messages: Implementers SHOULD also implement the messages of SAE J2540 which support the automatically downloading, updating and translations of table and table entries to users.

Like all users of these phrases, makers of 1512-2000 message receiving equipment are free to express these tables in whatever rendering, language, or media formats suit their specific needs.

5.5   Use in the DSRC Message Set

The SAE has developed a set of safety applications messages for use over the DSRC wireless communication system for exchange between the roadside and between vehicles. These message definitions can be found in SAE J2735 and its successors. A key aspect of this standard is the use of ITIS phrase encoding in their 2-byte encoded forms (preferred in this application over XML encoding or phrases incorporating the use of free text due to bandwidth considerations and other restrictions). These are typically encoded as octet sequences using the BER-DER encoding method of ASN. One of the requirements of this effort is the need to be able to encode roadside signage (as defined by the MUTCD documents) and it for that reason that this edition of the standard contains a number of new categories.

Precedence: The ASN1 found in the adopted DSRC standard is the definitive authority for DSRC messages.

Quantities: The use of qualities and value is allowed in the ITIS expressions.

Textual Use: The DSRC message definition does not in general allow free text to be used in the messages, refer to that standard for details. Limited character counts are allowed in selected places to provide a means to convey street and place names.

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[5]   SAE J2540 provides ways to do this with varying degrees of formality. One can simply pick a new table number and add whatever is wanted in the least "registered" case, while other ranges of use provide for national and regional registry control to occur.

Table Types: The DSRC message definitions presumes that the table entries are static in nature and that entries are never reused. This is reflected in the table header values outlined further in this document.

Local Use: DSRC does not allow the standard ITIS phrases to be varied or translated for local applications contexts, e.g. "traffic stopped" can not be expressed as "stationary traffic" as an alternative. How each ITIS expression is displayed to an end user (if at all) is not covered by that standard.

5.6   Use in Operator Consoles

The ITIS phrases (and their predecessor, the RDS phrases) have a history of use in expression building aids and operator prompts in many operator console designs. This document does not specifically address this type of use with any requirements. Some general observations can be given.

If the intended output of the operator data entry is text carried in any sort of ITS message, then consideration should be given to the eventual encoding into tables of the type described here and in J2540. Specifically, if free text is added "inside" such a phrase, then the phrase is no longer identical to that used in the tables. This is fine for some uses, and problematic for others.

In general, implementers should be aware that free text, while offering the widest possible range of expression, is also at times hard to sort and classify by automated means. Some users (this is more the case with ITIS phrases used in ERM systems) will want to parse the codes seen and ignore or take action based on them. Implementers should try to facilitate this, even if their own user base will not be sorting on this.

It is beyond the scope of this document to provide guidance regarding how the various phrases should be best grouped and presented to an operator. Further, this is an area where private vendors are expected to differentiate themselves and their understanding of client needs. There is no "ideal" way to *order* or to *present* the contents of the table. Various automatically adjusting options which change based on the situation (often organized in selectable visual menus) are most commonly found. Other restrictions such as limited display space in a mobile environment, or local operational procedures[6] may effect this as well.

The table below is a recommendation for an example ordering which implementers MAY wish to follow. These group titles and sub-titles attempt to represent the "big picture" categories covered by that portion of the list.   The labels are repeated (with commentary as needed) in the actual tables which follow. The labels are NOT code entries themselves, but are simply a visual point of reference for the reader.   This was the ordering used during the committee process to consolidate the phrases in the final list.

Update to be used with this edition of the standard: With the addition of several new categories the above list and groupings is now somewhat out of date for some uses.   The below list can be used with the new categories established as of this revision.

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[6]   Some agencies, as a matter of policy, will not issue ITIS phrases with terms containing words like "danger" in them.

Group: **Network Conditions**
1   Traffic Conditions *
2   Accidents & Incidents *
3   Closures (Road and Lane) *
4   Roadwork *
5   Obstructions *
6   Delays, Status, & Cancellations *
7   Unusual Driving *
8   Mobile Situation *
9   Device And Equipment Status
10   Restrictions *
11   Incident Response Status *

Group**: Events Affecting Travel**
12   Disasters *
13   Disturbances *
14   Sporting Events *
15   Special Events *
16   Parking Information *
17   Information System *

Group: **Travel Environment**
18   Weather Conditions *
19   Precipitation *
20   Winds *
21   Visibility & Air Quality *
22   Temperature
23   Pavement Conditions *
24   Winter Driving Restrictions &
       Recommendations *
25   Winter Driving Index *

Group: **Advice**
26   Suggestion Advice *
27   Warning Advice *

28   Instructions, Recommendations *
29   Instructions, Mandatory *

Group: **Qualifiers**
30   Qualifiers
31   Generic Locations
32   Lane / Roadway Descriptions
33   Alternate Route *
34   Unit Values

Group: **Groups Affected / Involved**
35   Transit Mode *
36   Vehicle Groups Affected *
37   Traveler Group Affected *
38   Responder Group Affected *
39   Incident Response Equipment

Group: **No Name Give**
40   Asset Status
41   Roadside Assets
42   Transit Operations *
43   Objects

Group: **MUTCD Support**
44   Allowed Maneuvers
45   Large Numbers
46   Named Objects
47   Recreational Objects & Activities
48   Regulatory and Warning Signs *
49   Small Numbers
50   States And Territories
51   Structures
52   Street Suffixes
53   MUTCD Locations

* Allowed to be an event type

Table 1 – (Revised) Suggested Table Organization and Ordering

5.7   Formats of tables

The tables are presented as a non-nested set of tables. Common American English textual expressions are used throughout. All strings are made up of "simple text" formatting.

Observe that the type of table entries has been preserved in a grouping which matches that used by portions of TMDD and other ITS message sets. For example, those message phrases dealing with types of disasters

are all arranged to be within the range [0x0C01 to 0x0CFF]. These range encodings will be preserved and implementers MAY use them for sorting purposes. If local phrases are to be added, they SHOULD preserve these ranges insofar as possible.

Table nesting has not been used for simplicity. Some saving in memory space can be obtained at the expense of more complex table expansion processing which can be obtained by this method. If implementers wish to create such a nested table for textual reasons, they MAY wish to build it in two stages to preserve the ability to perform range sorting.

5.8   Supported vocabularies and alphabets

The tables are expressed in the ASCII character set. As no diacritical marks are used, there was no need to use the Latin_1 character sets or Unicode.

Example software algorithms to convert into and out of the modified ASCII character set can be found in SAE J2369 Sections 10 & 11.

5.9   Registering a table within ITS

The presented tables are registered as per J2540 as tables for national use, when required.

Implementers wishing to further modify these entries (for example adding a new entry they feel is needed) SHALL follow the procedures outlined in J2540 Section 5.8 & 5.9 and create such a table in the registration range appropriate for their use. It is recommended that such tables nest to the tables presented here rather than duplicate the information in a flat table of their own creation.

Most deployments will have no need to register unique tables of their own creation and can use the method of local codes to add any additional table entries needed.

6. Data Element Definitions

Messages and data frames specified in Clause 7 and in other standards that use ITIS phrases are composed of message elements. In some cases, these message elements shall be DFs (found in the here or in the other standards). In other cases, these message elements shall be DEs. Any message or data frame specified in Clause 7 shall have all of its DEs and DFs specified in this clause, except those DEs that are primitive ASN.1 data types or those that are adopted from other functional areas, or defined in other volumes of the family of standards. In the later cases, the referenced standards shall be consulted.

The productions of ASN.1 which follows shall be considered normative in nature. While the majority of the normative content is reflected in the actual syntax of the ASN.1 some entries also have additional statements in the ASN.1 comments which shall be considered to be normative as well. In addition, the commentary provided with each entry may also provide additional normative restrictions on the proper use of the entry which shall be followed. The XML productions follow directly from the ASN.1 specifications and the same rules shall be applied.

6.1 Data Element: DE_Accidents and Incidents

Use: The ITIS enumeration list commonly referred to as "Accidents and Incidents," is assigned the upper byte value of [02] (which provides for value ranges from 512 to 767, inclusive). This list is formally called "AccidentsAndIncidents" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 52 different phrases, divided into 6 further sub-categories (the division into these sub-categories is informational only and other groupings may

also be used). The remaining 75 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 640).

ASN.1 Representation:
```
AccidentsAndIncidents ::= ENUMERATED  {
    -- Accidents
    accident                                (513),   -- Use when no further data is
                                                     -- available regarding involved vehicle
                                                     -- type

    serious-accident                        (514),
    injury-accident                         (515),
    minor-accident                          (516),
    multi-vehicle-accident                  (517),   -- To be used when events are NOT
                                                     -- distributed along a road segment
                                                     -- (i.e. one location)
    numerous-accidents                      (518),   -- To be used when events are
                                                     -- distributed along a road segment

    accident-involving-a-bicycle            (519),
    accident-involving-a-bus                (520),
    accident-involving-a-motorcycle         (521),
    accident-involving-a-pedestrian         (522),
    accident-involving-a-train              (523),
    accident-involving-a-truck              (524),
    accident-involving-a-semi-trailer       (562),
    accident-involving-hazardous-materials  (525),
    earlier-accident                        (526),   -- Hint: Typically used as a cause, as
                                                     -- with "Due to"
    medical-emergency                       (527),
    secondary-accident                      (528),
    rescue-and-recovery-work-REMOVED        (529),   -- Removed, use Rescue and recovery
                                                     -- work in progress in the Incident
                                                     -- Response Status group when needed
    accident-investigation-work             (530),
    incident                                (531),   -- Hint: For non-accident incidents
                                                     -- (disabled, police pull over, etc.)
                                                     -- where no further information is
                                                     -- available

    -- Disabled, etc.
    stalled-vehicle                         (532),
    abandoned-vehicle                       (533),
    disabled-vehicle                        (534),
    disabled-truck                          (535),
    disabled-semi-trailer                   (536),   -- Alternative Rendering:  disabled
                                                     -- tractor-trailer
    disabled-bus                            (537),
    disabled-train                          (538),
    vehicle-spun-out                        (539),
    vehicle-on-fire                         (540),
    vehicle-in-water                        (541),
    vehicles-slowing-to-look-at-accident    (542),   -- Alternative Rendering:  On-looker
                                                     -- slowdown, Rubbernecking
    -- Jackknifed
    jackknifed-semi-trailer                 (543),   -- Alternatives can use: jackknifed
                                                     -- tractor-trailer, jackknifed truck,
                                                     -- jackknifed big-rig
    jackknifed-trailer-home                 (544),
    jackknifed-trailer                      (545),   -- Hint: Used for smaller trailers
                                                     -- (i.e. not type "jackknifed semi
                                                     -- trailer" above)

    -- Spills
    spillage-occurring-from-moving-vehicle   (546),
    acid-spill                               (547),
    chemical-spill                           (548),
    fuel-spill                               (549),
    hazardous-materials-spill                (550),   -- Also use the Disaster lists for
                                                      -- large HAZMAT events
    oil-spill                                (551),
    spilled-load                             (552),
```

```
toxic-spill                            (553),
-- Overturned. Stuck
overturned-vehicle                     (554),  -- Use when no further data is
                                               -- available regarding involved vehicle
                                               -- types
overturned-truck                       (555),
overturned-semi-trailer                (556),
overturned-bus                         (557),
derailed-train                         (558),
stuck-vehicle                          (559),  -- It is preferred to provide data
                                               -- which denotes WHY the vehicle is
                                               -- stuck (i.e. mud/snow, under bridge,
                                               -- too wide, etc.)
truck-stuck-under-bridge               (560),  -- Alternative Rendering:  high load
                                               -- hit involving truck
bus-stuck-under-bridge                 (561),  -- Alternative Rendering:  high load
                                               -- hit involving bus
-- Cancel Types
accident-cleared                       (638),
incident-cleared                       (639),
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:

```xml
<xs:simpleType name="AccidentsAndIncidents" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="512"/>
                <xs:maxInclusive value="767"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="accident" id="_513"/>
                <xs:enumeration value="serious accident" id="_514"/>
                <xs:enumeration value="injury accident" id="_515"/>
                <xs:enumeration value="minor accident" id="_516"/>
                <xs:enumeration value="multi vehicle accident" id="_517"/>
                <xs:enumeration value="numerous accidents" id="_518"/>
                <xs:enumeration value="accident involving a bicycle" id="_519"/>
                <xs:enumeration value="accident involving a bus" id="_520"/>
                <xs:enumeration value="accident involving a motorcycle" id="_521"/>
                <xs:enumeration value="accident involving a pedestrian" id="_522"/>
                <xs:enumeration value="accident involving a train" id="_523"/>
                <xs:enumeration value="accident involving a truck" id="_524"/>
                <xs:enumeration value="accident involving a semi trailer" id="_562"/>
                <xs:enumeration value="accident involving hazardous materials" id="_525"/>
                <xs:enumeration value="earlier accident" id="_526"/>
                <xs:enumeration value="medical emergency" id="_527"/>
                <xs:enumeration value="secondary accident" id="_528"/>
                <xs:enumeration value="rescue and recovery work REMOVED" id="_529"/>
                <xs:enumeration value="accident investigation work" id="_530"/>
                <xs:enumeration value="incident" id="_531"/>
                <xs:enumeration value="stalled vehicle" id="_532"/>
                <xs:enumeration value="abandoned vehicle" id="_533"/>
                <xs:enumeration value="disabled vehicle" id="_534"/>
                <xs:enumeration value="disabled truck" id="_535"/>
                <xs:enumeration value="disabled semi trailer" id="_536"/>
                <xs:enumeration value="disabled bus" id="_537"/>
                <xs:enumeration value="disabled train" id="_538"/>
                <xs:enumeration value="vehicle spun out" id="_539"/>
                <xs:enumeration value="vehicle on fire" id="_540"/>
                <xs:enumeration value="vehicle in water" id="_541"/>
                <xs:enumeration value="vehicles slowing to look at accident" id="_542"/>
                <xs:enumeration value="jackknifed semi trailer" id="_543"/>
                <xs:enumeration value="jackknifed trailer home" id="_544"/>
                <xs:enumeration value="jackknifed trailer" id="_545"/>
                <xs:enumeration value="spillage occurring from moving vehicle" id="_546"/>
                <xs:enumeration value="acid spill" id="_547"/>
```

```
                <xs:enumeration value="chemical spill" id="_548"/>
                <xs:enumeration value="fuel spill" id="_549"/>
                <xs:enumeration value="hazardous materials spill" id="_550"/>
                <xs:enumeration value="oil spill" id="_551"/>
                <xs:enumeration value="spilled load" id="_552"/>
                <xs:enumeration value="toxic spill" id="_553"/>
                <xs:enumeration value="overturned vehicle" id="_554"/>
                <xs:enumeration value="overturned truck" id="_555"/>
                <xs:enumeration value="overturned semi trailer" id="_556"/>
                <xs:enumeration value="overturned bus" id="_557"/>
                <xs:enumeration value="derailed train" id="_558"/>
                <xs:enumeration value="stuck vehicle" id="_559"/>
                <xs:enumeration value="truck stuck under bridge" id="_560"/>
                <xs:enumeration value="bus stuck under bridge" id="_561"/>
                <xs:enumeration value="accident cleared" id="_638"/>
                <xs:enumeration value="incident cleared" id="_639"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:AccidentsAndIncidents" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.2 Data Element: DE_Alternate Route

Use: The ITIS enumeration list commonly referred to as "Alternate Route," is assigned the upper byte value of [33] (which provides for value ranges from 8448 to 8703, inclusive). This list is formally called "AlternateRoute" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 23 different phrases, divided into 2 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 104 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 8576).

ASN.1 Representation:
```
AlternateRoute ::= ENUMERATED  {
    detour-where-possible                              (8449),
    no-detour-available                                (8450),
    follow-signs                                       (8451),
    follow-detour-signs                                (8452),
    follow-special-detour-markers                      (8453),
    do-not-follow-detour-signs                         (8454),
    detour-in-operation                                (8455),
    follow-local-detour                                (8456),
    compulsory-detour-in-operation                     (8457),
    no-suitable-detour-available                       (8458),
    detour-is-no-longer-recommended                    (8459),
    local-drivers-are-recommended-to-avoid-the-area    (8460),
    trucks-are-recommended-to-avoid-the-area           (8461),
    consider-alternate-route                           (8462),
    consider-alternate-parking                         (8463),
    consider-alternate-destination                     (8464),
    consider-alternate-area                            (8465),
    -- Specific Route Types
    snow-route                                         (8466),  -- NEW:
    emergency-snow-route                               (8467),  -- NEW:
```

```
   evacuation-route                               (8468),  -- NEW: May be preceded by a
                                                           -- specific type, Used also
                                                           -- for general emergency
                                                           -- routes.
   truck-route                                    (8469),  -- NEW:
   hazardous-materials-route                      (8470),  -- NEW: May be used with 'any
                                                           -- time' for allowed, or 'no'
                                                           -- for probibited, or
                                                           -- 'detour'
   detour                                         (8471),  -- NEW:
   ... -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:
```
<xs:simpleType name="AlternateRoute" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="8448"/>
              <xs:maxInclusive value="8703"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="detour where possible" id="_8449"/>
              <xs:enumeration value="no detour available" id="_8450"/>
              <xs:enumeration value="follow signs" id="_8451"/>
              <xs:enumeration value="follow detour signs" id="_8452"/>
              <xs:enumeration value="follow special detour markers" id="_8453"/>
              <xs:enumeration value="do not follow detour signs" id="_8454"/>
              <xs:enumeration value="detour in operation" id="_8455"/>
              <xs:enumeration value="follow local detour" id="_8456"/>
              <xs:enumeration value="compulsory detour in operation" id="_8457"/>
              <xs:enumeration value="no suitable detour available" id="_8458"/>
              <xs:enumeration value="detour is no longer recommended" id="_8459"/>
              <xs:enumeration value="local drivers are recommended to avoid the area"
id="_8460"/>
              <xs:enumeration value="trucks are recommended to avoid the area"
id="_8461"/>
              <xs:enumeration value="consider alternate route" id="_8462"/>
              <xs:enumeration value="consider alternate parking" id="_8463"/>
              <xs:enumeration value="consider alternate destination" id="_8464"/>
              <xs:enumeration value="consider alternate area" id="_8465"/>
              <xs:enumeration value="snow route" id="_8466"/>
              <xs:enumeration value="emergency snow route" id="_8467"/>
              <xs:enumeration value="evacuation route" id="_8468"/>
              <xs:enumeration value="truck route" id="_8469"/>
              <xs:enumeration value="hazardous materials route" id="_8470"/>
              <xs:enumeration value="detour" id="_8471"/>
           </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:pattern value="\[.+\].*"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="local:AlternateRoute" />
        </xs:simpleType>
     </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.3 Data Element: DE_Asset Status

Use: The ITIS enumeration list commonly referred to as "Asset Status," is assigned the upper byte value of [40] (which provides for value ranges from 10240 to 10495, inclusive). This list is formally called "AssetStatus" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 19 different phrases. The remaining 108 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 10368).

ASN.1 Representation:
```
AssetStatus ::= ENUMERATED  {
   unknown-status      (10240),  -- Used when status is not known
   ready-for-use       (10241),
   working-normally    (10242),
   working-autonomously (10243),
   working-incorrectly (10244),
   not-working         (10245),
   normal-maintenance  (10246),
   in-route-to-use     (10247),
   returning-from-use  (10248),
   out-of-service      (10249),
   off-duty            (10250),
   on-patrol           (10251),
   on-call             (10252),
   on-break            (10253),
   mandatory-time-off  (10254),
   low-on-fuel         (10255),
   low-on-water        (10256),
   low-charge          (10257),
   missing             (10258),  -- Use "sign down" in device status if an object is
                                 -- damaged (or use "damaged") and could be returned to
                                 -- service, use "missing" only if an object is in fact
                                 -- missing
   ... -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:
```
<xs:simpleType name="AssetStatus">
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="10240"/>
              <xs:maxInclusive value="10495"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="unknown status" id="_10240"/>
              <xs:enumeration value="ready for use" id="_10241"/>
              <xs:enumeration value="working normally" id="_10242"/>
              <xs:enumeration value="working autonomously" id="_10243"/>
              <xs:enumeration value="working incorrectly" id="_10244"/>
              <xs:enumeration value="not working" id="_10245"/>
              <xs:enumeration value="normal maintenance" id="_10246"/>
              <xs:enumeration value="in route to use" id="_10247"/>
              <xs:enumeration value="returning from use" id="_10248"/>
              <xs:enumeration value="out of service" id="_10249"/>
              <xs:enumeration value="off duty" id="_10250"/>
              <xs:enumeration value="on patrol" id="_10251"/>
              <xs:enumeration value="on call" id="_10252"/>
              <xs:enumeration value="on break" id="_10253"/>
              <xs:enumeration value="mandatory time off" id="_10254"/>
              <xs:enumeration value="low on fuel" id="_10255"/>
              <xs:enumeration value="low on water" id="_10256"/>
              <xs:enumeration value="low charge" id="_10257"/>
              <xs:enumeration value="missing" id="_10258"/>
```

```
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
           <xs:restriction base="xs:string">
               <xs:pattern value="\[.+\].*"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="local:AssetStatus" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

 In addition, this item may be used by data structures in other ITS standards.

6.4 Data Element: DE_Closures (Road and Lane)

Use: The ITIS enumeration list commonly referred to as "Closures (Road and Lane)," is assigned the upper byte value of [03] (which provides for value ranges from 768 to 1023, inclusive). This list is formally called "Closures" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 18 different phrases, divided into 2 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 109 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 896).

ASN.1 Representation:
```
Closures ::= ENUMERATED  {
    closed-to-traffic       (769),   -- Used for road-closed and variations
    closed                  (770),   -- Hint: use this only for NON road-lane items (such as
                                     -- a rest stop)
    closed-ahead            (771),
    closed-intermittently   (772),
    closed-for-repairs      (773),
    closed-for-the-season   (774),
    blocked                 (775),
    blocked-ahead           (776),
    reduced-to-one-lane     (777),
    reduced-to-two-lanes    (778),
    reduced-to-three-lanes  (779),
    collapse                (780),   -- Used with bridges and tunnels
    out                     (781),   -- Used with bridges and roads
    -- Cancel Types
    open-to-traffic         (891),
    open                    (892),   -- Hint: use this only for NON road-lane items (such as
                                     -- a rest stop)
    reopened-to-traffic     (893),
    clearing                (894),
    cleared-from-road       (895),
    ... -- # LOCAL_CONTENT_ITIS
    }
    -- Combine with lane-roadway (or generic locations) as needed to form things like
    -- "toll lane closed ahead"
```

XML Representation:
```
<xs:simpleType name="Closures" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
               <xs:minInclusive value="768"/>
               <xs:maxInclusive value="1023"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
               <xs:enumeration value="closed to traffic" id="_769"/>
```

```
                    <xs:enumeration value="closed" id="_770"/>
                    <xs:enumeration value="closed ahead" id="_771"/>
                    <xs:enumeration value="closed intermittently" id="_772"/>
                    <xs:enumeration value="closed for repairs" id="_773"/>
                    <xs:enumeration value="closed for the season" id="_774"/>
                    <xs:enumeration value="blocked" id="_775"/>
                    <xs:enumeration value="blocked ahead" id="_776"/>
                    <xs:enumeration value="reduced to one lane" id="_777"/>
                    <xs:enumeration value="reduced to two lanes" id="_778"/>
                    <xs:enumeration value="reduced to three lanes" id="_779"/>
                    <xs:enumeration value="collapse" id="_780"/>
                    <xs:enumeration value="out" id="_781"/>
                    <xs:enumeration value="open to traffic" id="_891"/>
                    <xs:enumeration value="open" id="_892"/>
                    <xs:enumeration value="reopened to traffic" id="_893"/>
                    <xs:enumeration value="clearing" id="_894"/>
                    <xs:enumeration value="cleared from road" id="_895"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:Closures" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.5 Data Element: DE_Delays, Status, And Cancellations

Use: The ITIS enumeration list commonly referred to as "Delays, Status, And Cancellations," is assigned the upper byte value of [06] (which provides for value ranges from 1536 to 1791, inclusive). This list is formally called "DelayStatusCancellation" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 36 different phrases, divided into 5 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 91 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 1664).

ASN.1 Representation:
```
DelayStatusCancellation ::= ENUMERATED  {
    -- Delays
    delays                              (1537),
    short-delays                        (1538),
    long-delays                         (1539),
    very-long-delays                    (1540),
    delays-of-uncertain-duration        (1541),
    delayed-until-further-notice        (1542),
    busy                                (1543),   -- Hint: Combine with generic locations
                                                  -- (station busy, etc.)
    very-busy                           (1544),
    crowded                             (1545),
    overcrowded                         (1546),
    -- Cancellations
    cancellations                       (1547),
    route-cancelled-and-no-replacement  (1548),
    service-cancelled                   (1549),
    service-suspended                   (1550),
    service-withdrawn                   (1551),
    service-fully-booked                (1552),
```

```
all-services-fully-booked         (1553),
-- Service Levels
next-departure                    (1554),  -- Typically followed by a time value
next-arrival                      (1555),  -- Typically followed by a # value of time
very-frequent-service             (1556),
frequent-service                  (1557),
fairly-frequent-service           (1558),
regular-service                   (1559),
irregular-service                 (1560),
not-operating                     (1561),
-- Other
system-busy                       (1562),  -- In this context "system" means the
                                           -- entire network of services over a wide
                                           -- area such as an airline system

system-very-busy                  (1563),
system-crowded                    (1564),
system-overcrowded                (1565),
deleted-travel-time               (1566),  -- A duplicate entry, now removed in favor
                                           -- of item 269
headway                           (1567),  -- Typically followed by a # value of time
extra-services-in-operation       (1568),
-- Cancel Types
delays-clearing                   (1660),
delays-cleared                    (1661),
normal-services-resumed           (1662),
operating                         (1663),  -- Use operating for "services" such as
                                           -- bus service
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:

```xml
<xs:simpleType name="DelayStatusCancellation" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1536"/>
                <xs:maxInclusive value="1791"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="delays" id="_1537"/>
                <xs:enumeration value="short delays" id="_1538"/>
                <xs:enumeration value="long delays" id="_1539"/>
                <xs:enumeration value="very long delays" id="_1540"/>
                <xs:enumeration value="delays of uncertain duration" id="_1541"/>
                <xs:enumeration value="delayed until further notice" id="_1542"/>
                <xs:enumeration value="busy" id="_1543"/>
                <xs:enumeration value="very busy" id="_1544"/>
                <xs:enumeration value="crowded" id="_1545"/>
                <xs:enumeration value="overcrowded" id="_1546"/>
                <xs:enumeration value="cancellations" id="_1547"/>
                <xs:enumeration value="route cancelled and no replacement" id="_1548"/>
                <xs:enumeration value="service cancelled" id="_1549"/>
                <xs:enumeration value="service suspended" id="_1550"/>
                <xs:enumeration value="service withdrawn" id="_1551"/>
                <xs:enumeration value="service fully booked" id="_1552"/>
                <xs:enumeration value="all services fully booked" id="_1553"/>
                <xs:enumeration value="next departure" id="_1554"/>
                <xs:enumeration value="next arrival" id="_1555"/>
                <xs:enumeration value="very frequent service" id="_1556"/>
                <xs:enumeration value="frequent service" id="_1557"/>
                <xs:enumeration value="fairly frequent service" id="_1558"/>
                <xs:enumeration value="regular service" id="_1559"/>
                <xs:enumeration value="irregular service" id="_1560"/>
                <xs:enumeration value="not operating" id="_1561"/>
                <xs:enumeration value="system busy" id="_1562"/>
                <xs:enumeration value="system very busy" id="_1563"/>
                <xs:enumeration value="system crowded" id="_1564"/>
                <xs:enumeration value="system overcrowded" id="_1565"/>
```

- 21 -

```
                <xs:enumeration value="deleted travel time" id="_1566"/>
                <xs:enumeration value="headway" id="_1567"/>
                <xs:enumeration value="extra services in operation" id="_1568"/>
                <xs:enumeration value="delays clearing" id="_1660"/>
                <xs:enumeration value="delays cleared" id="_1661"/>
                <xs:enumeration value="normal services resumed" id="_1662"/>
                <xs:enumeration value="operating" id="_1663"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:DelayStatusCancellation" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.6 Data Element: DE_Device And Equipment Status

Use: The ITIS enumeration list commonly referred to as "Device And Equipment Status," is assigned the
upper byte value of [09] (which provides for value ranges from 2304 to 2559, inclusive). This list is
formally called "DeviceStatus" in the ASN.1 and XML productions. The items in this enumeration list are
not allowed to be used as an event category classification. This list contains a total of 41 different phrases,
divided into 2 further sub-categories (the division into these sub-categories is informational only and other
groupings may also be used). The remaining 86 values up to the lower byte value of [127] are reserved for
additional "national" phrases in this byte range. Local phrases may be added to the list starting with the
lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any
local additions to this list would be given the value 2432).

ASN.1 Representation:
```
DeviceStatus ::= ENUMERATED  {
    lane-control-signs-not-working                (2305),
    lane-control-signs-working-incorrectly        (2306),
    lane-control-signs-operating                  (2307),
    variable-message-signs-not-working            (2308),
    variable-message-signs-working-incorrectly    (2309),
    variable-message-signs-operating              (2310),
    emergency-telephones-not-working              (2311),
    emergency-telephone-number-not-working        (2312),
    traffic-lights-not-working                    (2313),
    traffic-lights-working-incorrectly            (2314),
    ramp-control-signals-not-working              (2315),
    ramp-control-signals-working-incorrectly      (2316),
    temporary-traffic-lights-not-working          (2317),
    temporary-traffic-lights-working-incorrectly  (2318),
    traffic-signal-control-computer-not-working   (2319),
    traffic-signal-timings-changed                (2320),
    overheight-warning-system-triggered           (2321),
    equipment-failure                             (2322),
    railroad-crossing-equipment-failure           (2323),
    tunnel-ventilation-not-working                (2324),
    power-failure                                 (2325),  -- Hint: Use for localized
                                                           -- cases of power loss
    widespread-power-outages                      (2326),  -- Alternative  rendering:
                                                           -- widespread power cuts
    technical-problems                            (2327),
    sign-down                                     (2328),
    lines-in-road-faded                           (2329),
    damaged-light-standard                        (2330),  -- Used for all forms of
                                                           -- pole / support damage
```

```
traffic-signal-stuck-on-flash                      (2331),
guide-rail                                         (2332),  -- Used for barriers as well
fencing                                            (2333),
light-standard-hanging-by-wires                    (2334),
call-box                                           (2335),
signal-cabinet                                     (2336),  -- Use for all types of
                                                            -- equipment cabinets
detector                                           (2337),  -- All forms of vehicle
                                                            -- detectors
improper-use-of-State-vehicle-or-equipment         (2338),
bulb-out                                           (2339),
not-yet-operational                                (2340),  -- When installed but not
                                                            -- yet brought on-line for
                                                            -- use by the system
not-yet-installed                                  (2341),  -- When planned
-- Cancel Types
electronic-signs-repaired                          (2428),
emergency-call-facilities-restored                 (2429),
traffic-signals-repaired                           (2430),
railroad-crossing-equipment-now-working-normally (2431),
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:

```
<xs:simpleType name="DeviceStatus" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="2304"/>
                <xs:maxInclusive value="2559"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="lane control signs not working" id="_2305"/>
                <xs:enumeration value="lane control signs working incorrectly"
id="_2306"/>
                <xs:enumeration value="lane control signs operating" id="_2307"/>
                <xs:enumeration value="variable message signs not working" id="_2308"/>
                <xs:enumeration value="variable message signs working incorrectly"
id="_2309"/>
                <xs:enumeration value="variable message signs operating" id="_2310"/>
                <xs:enumeration value="emergency telephones not working" id="_2311"/>
                <xs:enumeration value="emergency telephone number not working"
id="_2312"/>
                <xs:enumeration value="traffic lights not working" id="_2313"/>
                <xs:enumeration value="traffic lights working incorrectly" id="_2314"/>
                <xs:enumeration value="ramp control signals not working" id="_2315"/>
                <xs:enumeration value="ramp control signals working incorrectly"
id="_2316"/>
                <xs:enumeration value="temporary traffic lights not working" id="_2317"/>
                <xs:enumeration value="temporary traffic lights working incorrectly"
id="_2318"/>
                <xs:enumeration value="traffic signal control computer not working"
id="_2319"/>
                <xs:enumeration value="traffic signal timings changed" id="_2320"/>
                <xs:enumeration value="overheight warning system triggered" id="_2321"/>
                <xs:enumeration value="equipment failure" id="_2322"/>
                <xs:enumeration value="railroad crossing equipment failure" id="_2323"/>
                <xs:enumeration value="tunnel ventilation not working" id="_2324"/>
                <xs:enumeration value="power failure" id="_2325"/>
                <xs:enumeration value="widespread power outages" id="_2326"/>
                <xs:enumeration value="technical problems" id="_2327"/>
                <xs:enumeration value="sign down" id="_2328"/>
                <xs:enumeration value="lines in road faded" id="_2329"/>
                <xs:enumeration value="damaged light standard" id="_2330"/>
                <xs:enumeration value="traffic signal stuck on flash" id="_2331"/>
                <xs:enumeration value="guide rail" id="_2332"/>
                <xs:enumeration value="fencing" id="_2333"/>
                <xs:enumeration value="light standard hanging by wires" id="_2334"/>
```

- 23 -

```
                <xs:enumeration value="call box" id="_2335"/>
                <xs:enumeration value="signal cabinet" id="_2336"/>
                <xs:enumeration value="detector" id="_2337"/>
                <xs:enumeration value="improper use of State vehicle or equipment"
id="_2338"/>
                <xs:enumeration value="bulb out" id="_2339"/>
                <xs:enumeration value="not yet operational" id="_2340"/>
                <xs:enumeration value="not yet installed" id="_2341"/>
                <xs:enumeration value="electronic signs repaired" id="_2428"/>
                <xs:enumeration value="emergency call facilities restored" id="_2429"/>
                <xs:enumeration value="traffic signals repaired" id="_2430"/>
                <xs:enumeration value="railroad crossing equipment now working normally"
id="_2431"/>
           </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
           <xs:restriction base="xs:string">
               <xs:pattern value="\[.+\].*"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="local:DeviceStatus" />
        </xs:simpleType>
     </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.7 Data Element: DE_Disasters

Use: The ITIS enumeration list commonly referred to as "Disasters," is assigned the upper byte value of [12] (which provides for value ranges from 3072 to 3327, inclusive). This list is formally called "Disasters" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 32 different phrases, divided into 4 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 95 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 3200).

ASN.1 Representation:
```
Disasters ::= ENUMERATED {
    -- Water Related
    flash-flood                    (3073),
    major-flood                    (3074),
    reservoir-failure              (3075),
    levee-failure                  (3076),
    tsunami                        (3077),
    tidal-wave                     (3078),
    -- Fire Related
    volcanic-eruption              (3079),
    ash-fall                       (3080),
    lava-flow                      (3081),
    serious-fire                   (3082),
    forest-fire                    (3083),
    wildfire                       (3084),
    building-fire                  (3085),
    brush-fire                     (3086),
    grass-fire                     (3087),
    fire-danger-extreme            (3088),
    fire-danger-very-high          (3089),
    fire-danger-high               (3090),
    fire-danger-medium             (3091),
    fire-danger-low                (3092),
    --   Other
```

```
earthquake-damage              (3093),
air-crash                      (3094),
rail-crash                     (3095),
toxic-release                  (3096),
toxic-leak                     (3097),
radioactive-release            (3098),
radiation-hazard               (3099),
reactor-leakage                (3100),
explosion                      (3101),
major-hazardous-materials-fire (3102),  -- Alternative Rendering:  Major HAZMAT
                                        -- fire
major-hazardous-materials-release (3103),  -- Alternative Rendering:  Major HAZMAT
                                        -- release
-- Cancel Types
disaster-cleared               (3199),
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:

```
<xs:simpleType name="Disasters" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="3072"/>
                <xs:maxInclusive value="3327"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="flash flood" id="_3073"/>
                <xs:enumeration value="major flood" id="_3074"/>
                <xs:enumeration value="reservoir failure" id="_3075"/>
                <xs:enumeration value="levee failure" id="_3076"/>
                <xs:enumeration value="tsunami" id="_3077"/>
                <xs:enumeration value="tidal wave" id="_3078"/>
                <xs:enumeration value="volcanic eruption" id="_3079"/>
                <xs:enumeration value="ash fall" id="_3080"/>
                <xs:enumeration value="lava flow" id="_3081"/>
                <xs:enumeration value="serious fire" id="_3082"/>
                <xs:enumeration value="forest fire" id="_3083"/>
                <xs:enumeration value="wildfire" id="_3084"/>
                <xs:enumeration value="building fire" id="_3085"/>
                <xs:enumeration value="brush fire" id="_3086"/>
                <xs:enumeration value="grass fire" id="_3087"/>
                <xs:enumeration value="fire danger extreme" id="_3088"/>
                <xs:enumeration value="fire danger very high" id="_3089"/>
                <xs:enumeration value="fire danger high" id="_3090"/>
                <xs:enumeration value="fire danger medium" id="_3091"/>
                <xs:enumeration value="fire danger low" id="_3092"/>
                <xs:enumeration value="earthquake damage" id="_3093"/>
                <xs:enumeration value="air crash" id="_3094"/>
                <xs:enumeration value="rail crash" id="_3095"/>
                <xs:enumeration value="toxic release" id="_3096"/>
                <xs:enumeration value="toxic leak" id="_3097"/>
                <xs:enumeration value="radioactive release" id="_3098"/>
                <xs:enumeration value="radiation hazard" id="_3099"/>
                <xs:enumeration value="reactor leakage" id="_3100"/>
                <xs:enumeration value="explosion" id="_3101"/>
                <xs:enumeration value="major hazardous materials fire" id="_3102"/>
                <xs:enumeration value="major hazardous materials release" id="_3103"/>
                <xs:enumeration value="disaster cleared" id="_3199"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:Disasters" />
```

- 25 -

```
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.8 Data Element: DE_Disturbances

Use: The ITIS enumeration list commonly referred to as "Disturbances," is assigned the upper byte value
of [13] (which provides for value ranges from 3328 to 3583, inclusive). This list is formally called
"Disturbances" in the ASN.1 and XML productions. Items from this enumeration list can be used as an
event category classification. This list contains a total of 37 different phrases, divided into 2 further sub-
categories (the division into these sub-categories is informational only and other groupings may also be
used). The remaining 90 values up to the lower byte value of [127] are reserved for additional "national"
phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128
and proceeding upward from there (in other words, the first value assigned for any local additions to this
list would be given the value 3456).

ASN.1 Representation:
```
Disturbances ::= ENUMERATED  {
    assault                           (3329),  -- This index is not to be used as a
                                               -- default value for this category
    crime                             (3330),
    robbery                           (3331),
    fare-dispute                      (3332),
    shooting                          (3333),
    gunfire-on-roadway                (3334),
    suicide                           (3335),
    fight                             (3336),  -- Involves a few  persons and is
                                               -- localized (alt: brawl)
    gang-fight                        (3337)   -- Multi-party event occurring which may
                                               -- involve weapons
    person-harassment                 (3338),  -- "person" may be rendered as "passenger"
                                               -- if used in a controlled environment
                                               -- such as transit
    person-injured                    (3339),
    sick-customer                     (3363),
    unruly-passenger                  (3340),
    person-intoxicated                (3341),
    crowd-control-problem             (3342),
    demonstration                     (3343),
    march                             (3344),
    public-disturbance                (3345),
    riot                              (3346),
    civil-unrest                      (3347),
    civil-emergency                   (3348),
    strike                            (3349),
    public-transit-strike             (3350),  -- Hint: Strike affecting services
    stampede                          (3351),
    teargas-used                      (3352),
    security-alert                    (3353),  -- Heightened security procedures in
                                               -- effect
    security-incident                 (3354),
    checkpoint                        (3355),
    bomb-alert                        (3356),
    terrorist-incident                (3357),
    high-velocity-shell-fire          (3358),  -- Hint: Used as a part of avalanche
                                               -- control
    explosives-in-use                 (3359),
    air-raid                          (3360),
    weapons-of-mass-destruction-threat (3361),
    military-operations               (3362),  -- (war)
    -- Cancel Types
    security-problem-cleared          (3454),
    traffic-disturbance-cleared       (3455),
```

```
    ... -- # LOCAL_CONTENT_ITIS
    }
    -- Disturbances occurring on or affecting the actual roadway or surrounding areas
```

XML Representation:

```xml
<xs:simpleType name="Disturbances" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="3328"/>
                <xs:maxInclusive value="3583"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="assault" id="_3329"/>
                <xs:enumeration value="crime" id="_3330"/>
                <xs:enumeration value="robbery" id="_3331"/>
                <xs:enumeration value="fare dispute" id="_3332"/>
                <xs:enumeration value="shooting" id="_3333"/>
                <xs:enumeration value="gunfire on roadway" id="_3334"/>
                <xs:enumeration value="suicide" id="_3335"/>
                <xs:enumeration value="fight" id="_3336"/>
                <xs:enumeration value="gang fight" id="_3337"/>
                <xs:enumeration value="person harassment" id="_3338"/>
                <xs:enumeration value="person injured" id="_3339"/>
                <xs:enumeration value="sick customer" id="_3363"/>
                <xs:enumeration value="unruly passenger" id="_3340"/>
                <xs:enumeration value="person intoxicated" id="_3341"/>
                <xs:enumeration value="crowd control problem" id="_3342"/>
                <xs:enumeration value="demonstration" id="_3343"/>
                <xs:enumeration value="march" id="_3344"/>
                <xs:enumeration value="public disturbance" id="_3345"/>
                <xs:enumeration value="riot" id="_3346"/>
                <xs:enumeration value="civil unrest" id="_3347"/>
                <xs:enumeration value="civil emergency" id="_3348"/>
                <xs:enumeration value="strike" id="_3349"/>
                <xs:enumeration value="public transit strike" id="_3350"/>
                <xs:enumeration value="stampede" id="_3351"/>
                <xs:enumeration value="teargas used" id="_3352"/>
                <xs:enumeration value="security alert" id="_3353"/>
                <xs:enumeration value="security incident" id="_3354"/>
                <xs:enumeration value="checkpoint" id="_3355"/>
                <xs:enumeration value="bomb alert" id="_3356"/>
                <xs:enumeration value="terrorist incident" id="_3357"/>
                <xs:enumeration value="high velocity shell fire" id="_3358"/>
                <xs:enumeration value="explosives in use" id="_3359"/>
                <xs:enumeration value="air raid" id="_3360"/>
                <xs:enumeration value="weapons of mass destruction threat" id="_3361"/>
                <xs:enumeration value="military operations" id="_3362"/>
                <xs:enumeration value="security problem cleared" id="_3454"/>
                <xs:enumeration value="traffic disturbance cleared" id="_3455"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:Disturbances" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.9 Data Element: DE_Generic Locations

Use: The ITIS enumeration list commonly referred to as "Generic Locations," is assigned the upper byte value of [31] (which provides for value ranges from 7936 to 8191, inclusive). This list is formally called "GenericLocations" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 96 different phrases, divided into 5 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 31 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 8064).

ASN.1 Representation:

```
GenericLocations ::= ENUMERATED {
    -- Road Related
    on-bridges                  (7937),  -- Not to be used as the default for this
                                         -- category
    in-tunnels                  (7938),
    entering-or-leaving-tunnels (7939),
    on-ramps                    (7940),
    in-road-construction-area   (7941),
    around-a-curve              (7942),
    on-curve                    (8026),  -- NEW:
    on-tracks                   (8009),  -- NEW:
    in-street                   (8025),  -- NEW: As in in-street pad crossing
    shoulder                    (8027),  -- NEW:
    on-minor-roads              (7943),
    in-the-opposing-lanes       (7944),
    adjacent-to-roadway         (7945),
    across-tracks               (8024),  -- NEW:
    on-bend                     (7946),
    intersection                (8032),  -- NEW:
    entire-intersection         (7947),
    in-the-median               (7948),
    moved-to-side-of-road       (7949),
    moved-to-shoulder           (7950),
    on-the-roadway              (7951),  -- Use generic locations and groups affected to
                                         -- make other such phrases
    dip                         (8010),  -- NEW:
    traffic-circle              (8011),  -- NEW: Used for W2-6 graphic as well. Alt term:
                                         -- roundabout
    crossover                   (8028),  -- NEW:
    cross-road                  (8029),  -- NEW: Also used for W2-1 Note that in some uses
                                         -- this is one word
    side-road                   (8030),  -- NEW: Do not used for W2-2R and W2-2L
    to                          (8014),  -- NEW:
    by                          (8015),  -- NEW:
    through                     (8016),  -- NEW:
    area-of                     (8017),  -- NEW: Also area
    under                       (8018),  -- NEW:
    over                        (8019),  -- NEW:
    from                        (8020),  -- NEW:
    approaching                 (8021),  -- NEW:
    entering-at                 (8022),  -- NEW: Alt form: Entrance
    exiting-at                  (8023),  -- NEW:
    -- Terrain & Geography
    in-shaded-areas             (7952),
    in-low-lying-areas          (7953),
    in-the-downtown-area        (7954),
    in-the-inner-city-area      (7955),
    in-parts                    (7956),
    in-some-places              (7957),
    in-the-ditch                (7958),
    in-the-valley               (7959),
    on-hill-top                 (7960),
    near-the-foothills          (7961),
    at-high-altitudes           (7962),
    near-the-lake               (7963),
```

```
near-the-shore            (7964),
nearby-basin              (8008),
over-the-crest-of-a-hill  (7965),
other-than-on-the-roadway (7966),
near-the-beach            (7967),
near-beach-access-point   (7968),
mountain-pass             (8006),
lower-level               (7969),
upper-level               (7970),
-- Transit Travel, Air Travel and Places
airport                   (7971),
concourse                 (7972),
gate                      (7973),
baggage-claim             (7974),
customs-point             (7975),
reservation-center        (8007),
station                   (7976),
platform                  (7977),  -- Alternative Rendering:  track
dock                      (7978),
depot                     (7979),
ev-charging-point         (7980),
information-welcome-point (7981),  -- Use for Tourist Information as well (D9-10)
at-rest-area              (7982),
at-service-area           (7983),
at-weigh-station          (7984),
roadside-park             (8033),  -- NEW:
picnic-areas              (7985),
rest-area                 (7986),
service-stations          (7987),
toilets                   (7988),  -- Note also rest rooms in structures
bus-stop                  (8031),  -- NEW:
park-and-ride-lot         (8012),  -- NEW: Not to be used as a mode of travel
-- Direction of Travel
on-the-right              (7989),
on-the-left               (7990),
in-the-center             (7991),
in-the-opposite-direction (7992),
cross-traffic             (7993),
northbound-traffic        (7994),
eastbound-traffic         (7995),
southbound-traffic        (7996),
westbound-traffic         (7997),
-- Compass Points
north                     (7998),
south                     (7999),
east                      (8000),
west                      (8001),
northeast                 (8002),
northwest                 (8003),
southeast                 (8004),
southwest                 (8005),
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:

```xml
<xs:simpleType name="GenericLocations" >
    <xs:union>
        <xs:simpleType>
          <xs:restriction base="xs:unsignedInt">
            <xs:minInclusive value="7936"/>
            <xs:maxInclusive value="8191"/>
          </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:enumeration value="on bridges" id="_7937"/>
            <xs:enumeration value="in tunnels" id="_7938"/>
            <xs:enumeration value="entering or leaving tunnels" id="_7939"/>
            <xs:enumeration value="on ramps" id="_7940"/>
            <xs:enumeration value="in road construction area" id="_7941"/>
```

```
<xs:enumeration value="around a curve" id="_7942"/>
<xs:enumeration value="on curve" id="_8026"/>
<xs:enumeration value="on tracks" id="_8009"/>
<xs:enumeration value="in street" id="_8025"/>
<xs:enumeration value="shoulder" id="_8027"/>
<xs:enumeration value="on minor roads" id="_7943"/>
<xs:enumeration value="in the opposing lanes" id="_7944"/>
<xs:enumeration value="adjacent to roadway" id="_7945"/>
<xs:enumeration value="across tracks" id="_8024"/>
<xs:enumeration value="on bend" id="_7946"/>
<xs:enumeration value="intersection" id="_8032"/>
<xs:enumeration value="entire intersection" id="_7947"/>
<xs:enumeration value="in the median" id="_7948"/>
<xs:enumeration value="moved to side of road" id="_7949"/>
<xs:enumeration value="moved to shoulder" id="_7950"/>
<xs:enumeration value="on the roadway" id="_7951"/>
<xs:enumeration value="dip" id="_8010"/>
<xs:enumeration value="traffic circle" id="_8011"/>
<xs:enumeration value="crossover" id="_8028"/>
<xs:enumeration value="cross road" id="_8029"/>
<xs:enumeration value="side road" id="_8030"/>
<xs:enumeration value="to" id="_8014"/>
<xs:enumeration value="by" id="_8015"/>
<xs:enumeration value="through" id="_8016"/>
<xs:enumeration value="area of" id="_8017"/>
<xs:enumeration value="under" id="_8018"/>
<xs:enumeration value="over" id="_8019"/>
<xs:enumeration value="from" id="_8020"/>
<xs:enumeration value="approaching" id="_8021"/>
<xs:enumeration value="entering at" id="_8022"/>
<xs:enumeration value="exiting at" id="_8023"/>
<xs:enumeration value="in shaded areas" id="_7952"/>
<xs:enumeration value="in low lying areas" id="_7953"/>
<xs:enumeration value="in the downtown area" id="_7954"/>
<xs:enumeration value="in the inner city area" id="_7955"/>
<xs:enumeration value="in parts" id="_7956"/>
<xs:enumeration value="in some places" id="_7957"/>
<xs:enumeration value="in the ditch" id="_7958"/>
<xs:enumeration value="in the valley" id="_7959"/>
<xs:enumeration value="on hill top" id="_7960"/>
<xs:enumeration value="near the foothills" id="_7961"/>
<xs:enumeration value="at high altitudes" id="_7962"/>
<xs:enumeration value="near the lake" id="_7963"/>
<xs:enumeration value="near the shore" id="_7964"/>
<xs:enumeration value="nearby basin" id="_8008"/>
<xs:enumeration value="over the crest of a hill" id="_7965"/>
<xs:enumeration value="other than on the roadway" id="_7966"/>
<xs:enumeration value="near the beach" id="_7967"/>
<xs:enumeration value="near beach access point" id="_7968"/>
<xs:enumeration value="mountain pass" id="_8006"/>
<xs:enumeration value="lower level" id="_7969"/>
<xs:enumeration value="upper level" id="_7970"/>
<xs:enumeration value="airport" id="_7971"/>
<xs:enumeration value="concourse" id="_7972"/>
<xs:enumeration value="gate" id="_7973"/>
<xs:enumeration value="baggage claim" id="_7974"/>
<xs:enumeration value="customs point" id="_7975"/>
<xs:enumeration value="reservation center" id="_8007"/>
<xs:enumeration value="station" id="_7976"/>
<xs:enumeration value="platform" id="_7977"/>
<xs:enumeration value="dock" id="_7978"/>
<xs:enumeration value="depot" id="_7979"/>
<xs:enumeration value="ev charging point" id="_7980"/>
<xs:enumeration value="information welcome point" id="_7981"/>
<xs:enumeration value="at rest area" id="_7982"/>
<xs:enumeration value="at service area" id="_7983"/>
<xs:enumeration value="at weigh station" id="_7984"/>
<xs:enumeration value="roadside park" id="_8033"/>
<xs:enumeration value="picnic areas" id="_7985"/>
<xs:enumeration value="rest area" id="_7986"/>
<xs:enumeration value="service stations" id="_7987"/>
```

```
                    <xs:enumeration value="toilets" id="_7988"/>
                    <xs:enumeration value="bus stop" id="_8031"/>
                    <xs:enumeration value="park and ride lot" id="_8012"/>
                    <xs:enumeration value="on the right" id="_7989"/>
                    <xs:enumeration value="on the left" id="_7990"/>
                    <xs:enumeration value="in the center" id="_7991"/>
                    <xs:enumeration value="in the opposite direction" id="_7992"/>
                    <xs:enumeration value="cross traffic" id="_7993"/>
                    <xs:enumeration value="northbound traffic" id="_7994"/>
                    <xs:enumeration value="eastbound traffic" id="_7995"/>
                    <xs:enumeration value="southbound traffic" id="_7996"/>
                    <xs:enumeration value="westbound traffic" id="_7997"/>
                    <xs:enumeration value="north" id="_7998"/>
                    <xs:enumeration value="south" id="_7999"/>
                    <xs:enumeration value="east" id="_8000"/>
                    <xs:enumeration value="west" id="_8001"/>
                    <xs:enumeration value="northeast" id="_8002"/>
                    <xs:enumeration value="northwest" id="_8003"/>
                    <xs:enumeration value="southeast" id="_8004"/>
                    <xs:enumeration value="southwest" id="_8005"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:GenericLocations" />
            </xs:simpleType>
        </xs:union>
    </xs:simpleType>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

6.10 Data Element: DE_Incident Response Equipment

Use: The ITIS enumeration list commonly referred to as "Incident Response Equipment," is assigned the upper byte value of [39] (which provides for value ranges from 9984 to 10239, inclusive). This list is formally called "IncidentResponseEquipment" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 73 different phrases. The remaining 54 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 10112).

ASN.1 Representation:
```
IncidentResponseEquipment ::= ENUMERATED  {
    ground-fire-suppression       (9985),
    heavy-ground-equipment        (9986),
    aircraft                      (9988),
    marine-equipment              (9989),
    support-equipment             (9990),
    medical-rescue-unit           (9991),
    other                         (9993),   -- Depreciated by fire standards, do not
                                            -- use
    ground-fire-suppression-other (9994),
    engine                        (9995),
    truck-or-aerial               (9996),
    quint                         (9997),   -- A five-function type of fire apparatus.
                                            -- The units in the movie Backdraft were
                                            -- quints
    tanker-pumper-combination     (9998),
    brush-truck                   (10000),
    aircraft-rescue-firefighting  (10001),
    heavy-ground-equipment-other  (10004),
    dozer-or-plow                 (10005),
    tractor                       (10006),
```

```
    tanker-or-tender              (10008),
    aircraft-other                (10024),
    aircraft-fixed-wing-tanker    (10025),
    helitanker                    (10026),
    helicopter                    (10027),
    marine-equipment-other        (10034),
    fire-boat-with-pump           (10035),
    boat-no-pump                  (10036),
    support-apparatus-other       (10044),
    breathing-apparatus-support   (10045),
    light-and-air-unit            (10046),
    medical-rescue-unit-other     (10054),
    rescue-unit                   (10055),
    urban-search-rescue-unit      (10056),
    high-angle-rescue             (10057),
    crash-fire-rescue             (10058),
    bLS-unit                      (10059),
    aLS-unit                      (10060),
    mobile-command-post           (10075),  -- Depreciated, do not use
    chief-officer-car             (10076),
    hAZMAT-unit                   (10077),
    type-i-hand-crew              (10078),
    type-ii-hand-crew             (10079),
    privately-owned-vehicle       (10083),  -- (Often found in volunteer fire teams)
    other-apparatus-resource      (10084),  -- (Remapped from fire code zero)
    ambulance                     (10085),
    bomb-squad-van                (10086),
    combine-harvester             (10087),
    construction-vehicle          (10088),
    farm-tractor                  (10089),
    grass-cutting-machines        (10090),
    hAZMAT-containment-tow        (10091),
    heavy-tow                     (10092),
    light-tow                     (10094),
    flatbed-tow                   (10114),
    hedge-cutting-machines        (10093),
    mobile-crane                  (10095),
    refuse-collection-vehicle     (10096),
    resurfacing-vehicle           (10097),
    road-sweeper                  (10098),
    survey-crews                  (10115),  -- NEW:
    roadside-litter-collection-crews (10099),
    salvage-vehicle               (10100),
    sand-truck                    (10101),
    snowplow                      (10102),
    steam-roller                  (10103),
    swat-team-van                 (10104),
    track-laying-vehicle          (10105),
    unknown-vehicle               (10106),
    white-lining-vehicle          (10107),  -- Consider using Roadwork "road marking
                                            -- operations" unless the objective is to
                                            -- refer to the specific vehicle of this
                                            -- type.  Alternative Rendering: line
                                            -- painting vehicle
    dump-truck                    (10108),
    supervisor-vehicle            (10109),
    snow-blower                   (10110),
    rotary-snow-blower            (10111),
    road-grader                   (10112),  -- Alternative term: motor grader
    steam-truck                   (10113),  -- A special truck that thaws culverts and
                                            -- storm drains
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:

```xml
<xs:simpleType name="IncidentResponseEquipment" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="9984"/>
```

```
        <xs:maxInclusive value="10239"/>
      </xs:restriction>
  </xs:simpleType>
  <xs:simpleType>
    <xs:restriction base="xs:string">
        <xs:enumeration value="ground fire suppression" id="_9985"/>
        <xs:enumeration value="heavy ground equipment" id="_9986"/>
        <xs:enumeration value="aircraft" id="_9988"/>
        <xs:enumeration value="marine equipment" id="_9989"/>
        <xs:enumeration value="support equipment" id="_9990"/>
        <xs:enumeration value="medical rescue unit" id="_9991"/>
        <xs:enumeration value="other" id="_9993"/>
        <xs:enumeration value="ground fire suppression other" id="_9994"/>
        <xs:enumeration value="engine" id="_9995"/>
        <xs:enumeration value="truck or aerial" id="_9996"/>
        <xs:enumeration value="quint" id="_9997"/>
        <xs:enumeration value="tanker pumper combination" id="_9998"/>
        <xs:enumeration value="brush truck" id="_10000"/>
        <xs:enumeration value="aircraft rescue firefighting" id="_10001"/>
        <xs:enumeration value="heavy ground equipment other" id="_10004"/>
        <xs:enumeration value="dozer or plow" id="_10005"/>
        <xs:enumeration value="tractor" id="_10006"/>
        <xs:enumeration value="tanker or tender" id="_10008"/>
        <xs:enumeration value="aircraft other" id="_10024"/>
        <xs:enumeration value="aircraft fixed wing tanker" id="_10025"/>
        <xs:enumeration value="helitanker" id="_10026"/>
        <xs:enumeration value="helicopter" id="_10027"/>
        <xs:enumeration value="marine equipment other" id="_10034"/>
        <xs:enumeration value="fire boat with pump" id="_10035"/>
        <xs:enumeration value="boat no pump" id="_10036"/>
        <xs:enumeration value="support apparatus other" id="_10044"/>
        <xs:enumeration value="breathing apparatus support" id="_10045"/>
        <xs:enumeration value="light and air unit" id="_10046"/>
        <xs:enumeration value="medical rescue unit other" id="_10054"/>
        <xs:enumeration value="rescue unit" id="_10055"/>
        <xs:enumeration value="urban search rescue unit" id="_10056"/>
        <xs:enumeration value="high angle rescue" id="_10057"/>
        <xs:enumeration value="crash fire rescue" id="_10058"/>
        <xs:enumeration value="bLS unit" id="_10059"/>
        <xs:enumeration value="aLS unit" id="_10060"/>
        <xs:enumeration value="mobile command post" id="_10075"/>
        <xs:enumeration value="chief officer car" id="_10076"/>
        <xs:enumeration value="hAZMAT unit" id="_10077"/>
        <xs:enumeration value="type i hand crew" id="_10078"/>
        <xs:enumeration value="type ii hand crew" id="_10079"/>
        <xs:enumeration value="privately owned vehicle" id="_10083"/>
        <xs:enumeration value="other apparatus resource" id="_10084"/>
        <xs:enumeration value="ambulance" id="_10085"/>
        <xs:enumeration value="bomb squad van" id="_10086"/>
        <xs:enumeration value="combine harvester" id="_10087"/>
        <xs:enumeration value="construction vehicle" id="_10088"/>
        <xs:enumeration value="farm tractor" id="_10089"/>
        <xs:enumeration value="grass cutting machines" id="_10090"/>
        <xs:enumeration value="hAZMAT containment tow" id="_10091"/>
        <xs:enumeration value="heavy tow" id="_10092"/>
        <xs:enumeration value="light tow" id="_10094"/>
        <xs:enumeration value="flatbed tow" id="_10114"/>
        <xs:enumeration value="hedge cutting machines" id="_10093"/>
        <xs:enumeration value="mobile crane" id="_10095"/>
        <xs:enumeration value="refuse collection vehicle" id="_10096"/>
        <xs:enumeration value="resurfacing vehicle" id="_10097"/>
        <xs:enumeration value="road sweeper" id="_10098"/>
        <xs:enumeration value="survey crews" id="_10115"/>
        <xs:enumeration value="roadside litter collection crews" id="_10099"/>
        <xs:enumeration value="salvage vehicle" id="_10100"/>
        <xs:enumeration value="sand truck" id="_10101"/>
        <xs:enumeration value="snowplow" id="_10102"/>
        <xs:enumeration value="steam roller" id="_10103"/>
        <xs:enumeration value="swat team van" id="_10104"/>
        <xs:enumeration value="track laying vehicle" id="_10105"/>
        <xs:enumeration value="unknown vehicle" id="_10106"/>
```

```
                    <xs:enumeration value="white lining vehicle" id="_10107"/>
                    <xs:enumeration value="dump truck" id="_10108"/>
                    <xs:enumeration value="supervisor vehicle" id="_10109"/>
                    <xs:enumeration value="snow blower" id="_10110"/>
                    <xs:enumeration value="rotary snow blower" id="_10111"/>
                    <xs:enumeration value="road grader" id="_10112"/>
                    <xs:enumeration value="steam truck" id="_10113"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:IncidentResponseEquipment" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.11 Data Element: DE_Incident Response Status

Use: The ITIS enumeration list commonly referred to as "Incident Response Status," is assigned the upper byte value of [11] (which provides for value ranges from 2816 to 3071, inclusive). This list is formally called "IncidentResponseStatus" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 17 different phrases. The remaining 110 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 2944).

ASN.1 Representation:
```
IncidentResponseStatus ::= ENUMERATED {
   unconfirmed-report                   (2817),
   initial-response-en-route            (2818),
   follow-up-response-en-route          (2819),
   initial-response-on-scene            (2820),
   follow-up-response-on-scene          (2821),
   confirmed-report                     (2822),
   scene-is-unsecured-at-this-time      (2823),   -- Caution: This has different meanings
                                                  -- in Public Safety use
   response-scene-secured               (2824),   -- Caution: This has different meanings
                                                  -- in Public Safety use
   rescue-and-recovery-work-in-progress (2825),
   extraction-in-progress               (2826),
   clearance-work-in-progress           (2827),
   body-removal-operations              (2828),
   fire-containment-contained           (2829),
   fire-containment-not-contained       (2830),
   event-cleared                        (2831),   -- Meaning that responder has left
                                                  -- scene, not that surrounding traffic
                                                  -- has cleared to a normal level
   traffic-clearing                     (2832),
   incident-closed                      (2833),   -- A "case closed" meaning which can
                                                  -- differ considerably by local agency
                                                  -- policies
   ... -- # LOCAL_CONTENT_ITIS
}
-- Primarily this list is used for exchanging response status with other agencies.
-- Some of these phrases should be avoided in ITIS targeted for consumer use
```

XML Representation:
```
<xs:simpleType name="IncidentResponseStatus" >
      <xs:union>
         <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
               <xs:minInclusive value="2816"/>
               <xs:maxInclusive value="3071"/>
            </xs:restriction>
         </xs:simpleType>
         <xs:simpleType>
            <xs:restriction base="xs:string">
               <xs:enumeration value="unconfirmed report" id="_2817"/>
               <xs:enumeration value="initial response en route" id="_2818"/>
               <xs:enumeration value="follow up response en route" id="_2819"/>
               <xs:enumeration value="initial response on scene" id="_2820"/>
               <xs:enumeration value="follow up response on scene" id="_2821"/>
               <xs:enumeration value="confirmed report" id="_2822"/>
               <xs:enumeration value="scene is unsecured at this time" id="_2823"/>
               <xs:enumeration value="response scene secured" id="_2824"/>
               <xs:enumeration value="rescue and recovery work in progress" id="_2825"/>
               <xs:enumeration value="extraction in progress" id="_2826"/>
               <xs:enumeration value="clearance work in progress" id="_2827"/>
               <xs:enumeration value="body removal operations" id="_2828"/>
               <xs:enumeration value="fire containment contained" id="_2829"/>
               <xs:enumeration value="fire containment not contained" id="_2830"/>
               <xs:enumeration value="event cleared" id="_2831"/>
               <xs:enumeration value="traffic clearing" id="_2832"/>
               <xs:enumeration value="incident closed" id="_2833"/>
            </xs:restriction>
         </xs:simpleType >
         <xs:simpleType>
            <xs:restriction base="xs:string">
               <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
         </xs:simpleType>
         <xs:simpleType>
            <xs:restriction base="local:IncidentResponseStatus" />
         </xs:simpleType>
      </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.12 Data Element: DE_Information System

Use: The ITIS enumeration list commonly referred to as "Information System," is assigned the upper byte
value of [17] (which provides for value ranges from 4352 to 4607, inclusive). This list is formally called
"SystemInformation" in the ASN.1 and XML productions. Items from this enumeration list can be used as
an event category classification. This list contains a total of 16 different phrases, divided into 2 further sub-
categories (the division into these sub-categories is informational only and other groupings may also be
used). The remaining 111 values up to the lower byte value of [127] are reserved for additional "national"
phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128
and proceeding upward from there (in other words, the first value assigned for any local additions to this
list would be given the value 4480).

ASN.1 Representation:
```
SystemInformation ::= ENUMERATED  {
   information-available-on-radio       (4353),  -- Not to be used as a default for
                                                 -- this category D12-1
   information-available-on-TV          (4354),
   call-to-get-information              (4355),
   information-available-via-Internet   (4356),
   test-message                         (4357),  -- Not to be displayed on consumer
                                                 -- devices if possible
   no-information-available             (4358),  -- Typically combined with "on xxx
```

- 35 -

```
                                              -- service" where xxx is a type of
                                              -- service (bus, rail, etc.)
   null-description                  (4359),  -- (but with event location or other
                                              -- information provided in the
                                              -- message)
   police-assistance                 (4361), -- NEW:
   police-monitor-CB                 (4362), -- NEW: D12-3
   emergency-notification            (4363), -- NEW:
   in-emergency-dial-911             (4364), -- NEW: D12-14
   travel-Info-call-511              (4365), -- NEW: D`12-5
   car-pool-information              (4366), -- NEW: D12-2
   information-service-resumed       (4478),
   -- Cancel Types
   information-service-is-being-suspended (4360),
   message-canceled                  (4479), -- Not Recommended for use
   ... -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:
```xml
<xs:simpleType name="SystemInformation" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="4352"/>
              <xs:maxInclusive value="4607"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="information available on radio" id="_4353"/>
              <xs:enumeration value="information available on TV" id="_4354"/>
              <xs:enumeration value="call to get information" id="_4355"/>
              <xs:enumeration value="information available via Internet" id="_4356"/>
              <xs:enumeration value="test message" id="_4357"/>
              <xs:enumeration value="no information available" id="_4358"/>
              <xs:enumeration value="null description" id="_4359"/>
              <xs:enumeration value="police assistance" id="_4361"/>
              <xs:enumeration value="police monitor CB" id="_4362"/>
              <xs:enumeration value="emergency notification" id="_4363"/>
              <xs:enumeration value="in emergency dial 911" id="_4364"/>
              <xs:enumeration value="travel Info call 511" id="_4365"/>
              <xs:enumeration value="car pool information" id="_4366"/>
              <xs:enumeration value="information service resumed" id="_4478"/>
              <xs:enumeration value="information service is being suspended"
id="_4360"/>
              <xs:enumeration value="message canceled" id="_4479"/>
           </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:pattern value="\[.+\].*"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="local:SystemInformation" />
        </xs:simpleType>
     </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.13 Data Element: DE_Instructions (Mandatory)

Use: The ITIS enumeration list commonly referred to as "Instructions (Mandatory)," is assigned the upper byte value of [29] (which provides for value ranges from 7424 to 7679, inclusive). This list is formally called "AdviceInstructionsMandatory" in the ASN.1 and XML productions. Items from this enumeration

list can be used as an event category classification. This list contains a total of 30 different phrases, divided into 2 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 97 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 7552).

ASN.1 Representation:

```
AdviceInstructionsMandatory ::= ENUMERATED  {
    keep-to-the-right                    (7425),
    keep-to-the-left                     (7426),
    use-right-lane                       (7427),
    use-left-lane                        (7428),
    stay-in-lane                         (7450),  -- NEW:
    merge                                (7451),  -- NEW: Typically followed by direction
                                                  -- left/right Used for W4-1R and W4-1L
    heavy-vehicles-use-right-lane        (7429),
    heavy-vehicles-use-left-lane         (7430),
    observe-signals                      (7431),
    observe-signs                        (7432),
    no-passing                           (7433),  -- Used for MUTCD signs
    no-smoking                           (7434),
    no-open-flames                       (7435),
    use-shoulder-as-lane                 (7436),
    do-not-drive-on-the-shoulder         (7437),
    allow-emergency-vehicles-to-pass     (7438),
    clear-a-lane-for-emergency-vehicles  (7439),
    pull-over-to-the-edge-of-the-roadway (7440),
    wait-for-escort-vehicle              (7441),
    in-emergency-wait-for-police-patrol  (7442),
    reduce-your-speed                    (7443),
    observe-speed-limits                 (7444),
    check-point                          (7445),
    entry-requirements                   (7446),
    insurance-requirements               (7447),
    firearms-requirements                (7448),
    pet-requirements                     (7449),
    slower-traffic-keep-right            (7452),  -- NEW:
    keep-off                             (7453),  -- NEW: Typically followed by object
    -- Cancel Types
    shoulder-travel-no-longer-allowed    (7547),
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:

```
<xs:simpleType name="AdviceInstructionsMandatory" >
    <xs:union>
       <xs:simpleType>
          <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="7424"/>
              <xs:maxInclusive value="7679"/>
          </xs:restriction>
       </xs:simpleType>
       <xs:simpleType>
          <xs:restriction base="xs:string">
             <xs:enumeration value="keep to the right" id="_7425"/>
             <xs:enumeration value="keep to the left" id="_7426"/>
             <xs:enumeration value="use right lane" id="_7427"/>
             <xs:enumeration value="use left lane" id="_7428"/>
             <xs:enumeration value="stay in lane" id="_7450"/>
             <xs:enumeration value="merge" id="_7451"/>
             <xs:enumeration value="heavy vehicles use right lane" id="_7429"/>
             <xs:enumeration value="heavy vehicles use left lane" id="_7430"/>
             <xs:enumeration value="observe signals" id="_7431"/>
             <xs:enumeration value="observe signs" id="_7432"/>
             <xs:enumeration value="no passing" id="_7433"/>
             <xs:enumeration value="no smoking" id="_7434"/>
             <xs:enumeration value="no open flames" id="_7435"/>
             <xs:enumeration value="use shoulder as lane" id="_7436"/>
```

```
                    <xs:enumeration value="do not drive on the shoulder" id="_7437"/>
                    <xs:enumeration value="allow emergency vehicles to pass" id="_7438"/>
                    <xs:enumeration value="clear a lane for emergency vehicles" id="_7439"/>
                    <xs:enumeration value="pull over to the edge of the roadway" id="_7440"/>
                    <xs:enumeration value="wait for escort vehicle" id="_7441"/>
                    <xs:enumeration value="in emergency wait for police patrol" id="_7442"/>
                    <xs:enumeration value="reduce your speed" id="_7443"/>
                    <xs:enumeration value="observe speed limits" id="_7444"/>
                    <xs:enumeration value="check point" id="_7445"/>
                    <xs:enumeration value="entry requirements" id="_7446"/>
                    <xs:enumeration value="insurance requirements" id="_7447"/>
                    <xs:enumeration value="firearms requirements" id="_7448"/>
                    <xs:enumeration value="pet requirements" id="_7449"/>
                    <xs:enumeration value="slower traffic keep right" id="_7452"/>
                    <xs:enumeration value="keep off" id="_7453"/>
                    <xs:enumeration value="shoulder travel no longer allowed" id="_7547"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:AdviceInstructionsMandatory" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.14 Data Element: DE_Instructions (Recommendations)

Use: The ITIS enumeration list commonly referred to as "Instructions (Recommendations)," is assigned the upper byte value of [28] (which provides for value ranges from 7168 to 7423, inclusive). This list is formally called "AdviceInstructionsRecommendations" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 35 different phrases. The remaining 92 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 7296).

ASN.1 Representation:
```
AdviceInstructionsRecommendations ::= ENUMERATED  {
    drive-carefully                                       (7169),
    drive-with-extreme-caution                            (7170),
    approach-with-care                                    (7171),
    keep-your-distance                                    (7172),
    increase-normal-following-distance                    (7173),
    test-your-brakes                                      (7174),
    cross-intersection-with-care                          (7175),
    pass-with-care                                        (7176),  -- Use as MUTCD
                                                                   -- sign
    pass                                                  (7200),  -- NEW: Used for
                                                                   -- passiong
                                                                   -- action, as in
                                                                   -- do not pass
    use-low-beam-headlights                               (7177),
    use-fog-lights                                        (7178),
    use-hazard-warning-lights                             (7179),  -- Alternative
                                                                   -- Rendering:
                                                                   -- use blinkers
    do-not-leave-your-vehicle                             (7180),
    leave-your-vehicle-and-proceed-to-next-safe-place     (7181),
    turn-off-engine                                       (7182),  -- Alternative
```

```
                                                          -- Rendering:
                                                          -- switch off
                                                          -- engine
    close-all-windows-turn-off-heater-air-conditioner-and-vents (7183),
    turn-off-air-conditioner-to-prevent-engine-overheating    (7184),
    turn-off-mobile-phones-and-two-way-radios                 (7185),  -- Alternative
                                                          -- Rendering:
                                                          -- switch off
                                                          -- mobile phones
                                                          -- and two way
                                                          -- radios
    prepare-to-stop                                       (7186),
    be-prepared-to-stop                                   (7201),  -- NEW:
    stop-at-next-rest-area                                (7187),
    stop-at-next-safe-place                               (7188),
    only-travel-if-absolutely-necessary                   (7189),
    drive-to-another-service-area                         (7190),
    use-through-traffic-lanes                             (7191),
    use-local-traffic-lanes                               (7192),
    use-left-hand-parallel-roadway                        (7193),
    use-right-hand-parallel-roadway                       (7194),
    use-heavy-vehicle-lane                                (7195),  -- Alternative
                                                          -- Rendering:
                                                          -- use truck
                                                          -- lanes
    observe-recommended-speed                             (7196),
    signals-sequenced-for-speed                           (7202),  -- NEW: Typically
                                                          -- followed by
                                                          -- speed
    maintain-top-safe-speed                               (7203),  -- NEW:
    facing-traffic                                        (7197),  -- NEW:
    push-button                                           (7198),  -- NEW:
    to-cross-street                                       (7199),  -- NEW:
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:

```xml
<xs:simpleType name="AdviceInstructionsRecommendations" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="7168"/>
                <xs:maxInclusive value="7423"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="drive carefully" id="_7169"/>
                <xs:enumeration value="drive with extreme caution" id="_7170"/>
                <xs:enumeration value="approach with care" id="_7171"/>
                <xs:enumeration value="keep your distance" id="_7172"/>
                <xs:enumeration value="increase normal following distance" id="_7173"/>
                <xs:enumeration value="test your brakes" id="_7174"/>
                <xs:enumeration value="cross intersection with care" id="_7175"/>
                <xs:enumeration value="pass with care" id="_7176"/>
                <xs:enumeration value="pass" id="_7200"/>
                <xs:enumeration value="use low beam headlights" id="_7177"/>
                <xs:enumeration value="use fog lights" id="_7178"/>
                <xs:enumeration value="use hazard warning lights" id="_7179"/>
                <xs:enumeration value="do not leave your vehicle" id="_7180"/>
                <xs:enumeration value="leave your vehicle and proceed to next safe place"
id="_7181"/>
                <xs:enumeration value="turn off engine" id="_7182"/>
                <xs:enumeration value="close all windows turn off heater air conditioner
and vents" id="_7183"/>
                <xs:enumeration value="turn off air conditioner to prevent engine
overheating" id="_7184"/>
                <xs:enumeration value="turn off mobile phones and two way radios"
id="_7185"/>
                <xs:enumeration value="prepare to stop" id="_7186"/>
```

```
                <xs:enumeration value="be prepared to stop" id="_7201"/>
                <xs:enumeration value="stop at next rest area" id="_7187"/>
                <xs:enumeration value="stop at next safe place" id="_7188"/>
                <xs:enumeration value="only travel if absolutely necessary" id="_7189"/>
                <xs:enumeration value="drive to another service area" id="_7190"/>
                <xs:enumeration value="use through traffic lanes" id="_7191"/>
                <xs:enumeration value="use local traffic lanes" id="_7192"/>
                <xs:enumeration value="use left hand parallel roadway" id="_7193"/>
                <xs:enumeration value="use right hand parallel roadway" id="_7194"/>
                <xs:enumeration value="use heavy vehicle lane" id="_7195"/>
                <xs:enumeration value="observe recommended speed" id="_7196"/>
                <xs:enumeration value="signals sequenced for speed" id="_7202"/>
                <xs:enumeration value="maintain top safe speed" id="_7203"/>
                <xs:enumeration value="facing traffic" id="_7197"/>
                <xs:enumeration value="push button" id="_7198"/>
                <xs:enumeration value="to cross street" id="_7199"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:AdviceInstructionsRecommendations" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.15 Data Element: DE_ITIS_Text

Use: Simple text used with ITIS codes.

ASN.1 Representation:
```
ITIStext ::= IA5String (SIZE(1..500))
```

XML Representation:
```
<xs:simpleType name="ITIStext" >
      <xs:restriction base="xs:string">
          <xs:minLength value="1"/>
          <xs:maxLength value="500"/>
      </xs:restriction>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS-Codes_And_Text <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.16 Data Element: DE_ITISgroups

Use: The range of ITIS codes dealing with the division of ITIS groups defined in the entire ITIS collection. This data element can be used to clarify what group a phrase or event belongs to. The enumeration value represents the upper byte of the two-byte value assigned to each group (category) of phrases.

ASN.1 Representation:
```
ITISgroups ::= ENUMERATED {
    trafficConditions               (1),
    accidentsAndIncidents           (2),
    closures                        (3),
    roadwork                        (4),
    obstruction                     (5),
```

```
delayStatusCancellation            (6),
unusualDriving                     (7),
mobileSituation                    (8),
deviceStatus                       (9),
restrictionClass                  (10),
incidentResponseStatus            (11),
disasters                         (12),
disturbances                      (13),
sportingEvents                    (14),
specialEvents                     (15),
parkingInformation                (16),
systemInformation                 (17),
weatherConditions                 (18),
precipitation                     (19),
winds                             (20),
visibilityAndAirQuality           (21),
temperature                       (22),
pavementConditions                (23),
winterDrivingRestrictions         (24),
winterDrivingIndex                (25),
suggestionAdvice                  (26),
warningAdvice                     (27),
adviceInstructionsRecommendations (28),
adviceInstructionsMandatory       (29),
qualifiers                        (30),
genericLocations                  (31),
laneRoadway                       (32),
alternateRoute                    (33),
units                             (34),
transitMode                       (35),
vehicleGroupAffected              (36),
travelerGroupAffected             (37),
responderGroupAffected            (38),
incidentResponseEquipment         (39),
assetStatus                       (40),
roadsideAssets                    (41),
transitOperations                 (42),
objects                           (43),
validManeuvers                    (44), -- NEW:
largeNumbers                      (45), -- NEW:
namedObjects                      (46), -- NEW:
recreationalObjectsAndActivities  (47), -- NEW:
regulatoryAndWarningSigns         (48), -- NEW:
smallNumbers                      (49), -- NEW:
states                            (50), -- NEW:
structures                        (51), -- NEW:
streetSuffixes                    (52), -- NEW:
mUTCDLocations                    (53), -- NEW:
...
}
```

XML Representation:
```xml
<xs:simpleType name="ITISgroups" >
    <xs:annotation>
        <xs:appinfo>
          trafficConditions (1)
          accidentsAndIncidents (2)
          closures (3)
          roadwork (4)
          obstruction (5)
          delayStatusCancellation (6)
          unusualDriving (7)
          mobileSituation (8)
          deviceStatus (9)
          restrictionClass (10)
          incidentResponseStatus (11)
          disasters (12)
          disturbances (13)
          sportingEvents (14)
          specialEvents (15)
          parkingInformation (16)
```

```
           systemInformation (17)
           weatherConditions (18)
           precipitation (19)
           winds (20)
           visibilityAndAirQuality (21)
           temperature (22)
           pavementConditions (23)
           winterDrivingRestrictions (24)
           winterDrivingIndex (25)
           suggestionAdvice (26)
           warningAdvice (27)
           adviceInstructionsRecommendations (28)
           adviceInstructionsMandatory (29)
           qualifiers (30)
           genericLocations (31)
           laneRoadway (32)
           alternateRoute (33)
           units (34)
           transitMode (35)
           vehicleGroupAffected (36)
           travelerGroupAffected (37)
           responderGroupAffected (38)
           incidentResponseEquipment (39)
           assetStatus (40)
           roadsideAssets (41)
           transitOperations (42)
           objects (43)
           validManeuvers (44) -- NEW:
           largeNumbers (45) -- NEW:
           namedObjects (46) -- NEW:
           recreationalObjectsAndActivities (47) -- NEW:
           regulatoryAndWarningSigns (48) -- NEW:
           smallNumbers (49) -- NEW:
           states (50) -- NEW:
           structures (51) -- NEW:
           streetSuffixes (52) -- NEW:
           mUTCDLocations (53) -- NEW:
       </xs:appinfo>
   </xs:annotation>
   <xs:union>
       <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
               <xs:minInclusive value="1"/>
               <xs:maxInclusive value="53"/>
           </xs:restriction>
       </xs:simpleType>
       <xs:simpleType>
           <xs:restriction base="xs:string">
               <xs:enumeration value="trafficConditions"/>
               <xs:enumeration value="accidentsAndIncidents"/>
               <xs:enumeration value="closures"/>
               <xs:enumeration value="roadwork"/>
               <xs:enumeration value="obstruction"/>
               <xs:enumeration value="delayStatusCancellation"/>
               <xs:enumeration value="unusualDriving"/>
               <xs:enumeration value="mobileSituation"/>
               <xs:enumeration value="deviceStatus"/>
               <xs:enumeration value="restrictionClass"/>
               <xs:enumeration value="incidentResponseStatus"/>
               <xs:enumeration value="disasters"/>
               <xs:enumeration value="disturbances"/>
               <xs:enumeration value="sportingEvents"/>
               <xs:enumeration value="specialEvents"/>
               <xs:enumeration value="parkingInformation"/>
               <xs:enumeration value="systemInformation"/>
               <xs:enumeration value="weatherConditions"/>
               <xs:enumeration value="precipitation"/>
               <xs:enumeration value="winds"/>
               <xs:enumeration value="visibilityAndAirQuality"/>
               <xs:enumeration value="temperature"/>
               <xs:enumeration value="pavementConditions"/>
```

- 42 -

```
                <xs:enumeration value="winterDrivingRestrictions"/>
                <xs:enumeration value="winterDrivingIndex"/>
                <xs:enumeration value="suggestionAdvice"/>
                <xs:enumeration value="warningAdvice"/>
                <xs:enumeration value="adviceInstructionsRecommendations"/>
                <xs:enumeration value="adviceInstructionsMandatory"/>
                <xs:enumeration value="qualifiers"/>
                <xs:enumeration value="genericLocations"/>
                <xs:enumeration value="laneRoadway"/>
                <xs:enumeration value="alternateRoute"/>
                <xs:enumeration value="units"/>
                <xs:enumeration value="transitMode"/>
                <xs:enumeration value="vehicleGroupAffected"/>
                <xs:enumeration value="travelerGroupAffected"/>
                <xs:enumeration value="responderGroupAffected"/>
                <xs:enumeration value="incidentResponseEquipment"/>
                <xs:enumeration value="assetStatus"/>
                <xs:enumeration value="roadsideAssets"/>
                <xs:enumeration value="transitOperations"/>
                <xs:enumeration value="objects"/>
                <xs:enumeration value="validManeuvers"/>
                <xs:enumeration value="largeNumbers"/>
                <xs:enumeration value="namedObjects"/>
                <xs:enumeration value="recreationalObjectsAndActivities"/>
                <xs:enumeration value="regulatoryAndWarningSigns"/>
                <xs:enumeration value="smallNumbers"/>
                <xs:enumeration value="states"/>
                <xs:enumeration value="structures"/>
                <xs:enumeration value="streetSuffixes"/>
                <xs:enumeration value="mUTCDLocations"/>
            </xs:restriction>
        </xs:simpleType >
    </xs:union>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

6.17 Data Element: DE_ITIS

Use: The complete ITIS enumeration list commonly referred to as "ITIS," which contains the entire list of codes. This list is formally called "ITIScodes" in the ASN.1 and XML productions. This list contains a total of 2443 different phrases, divided into 145 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). Additional local phrases may be added to this list in each upper byte value starting with the lower byte value of 128 and proceeding upward from there. In other words, the first value assigned for any local additions to this list would be given the value 128 plus 256 times its upper byte value.

ASN.1 Representation:
```
ITIScodes ::= ENUMERATED  {
    -- Traffic Conditions
    stopped-traffic                       (257),
    stop-and-go-traffic                   (258),
    slow-traffic                          (259),
    heavy-traffic                         (260),
    traffic-building                      (261),
    long-queues                           (262),
    traffic-congestion                    (263),
    traffic-lighter-than-normal           (264),
    traffic-heavier-than-normal           (265),
    traffic-much-heavier-than-normal      (266),
    current-speed                         (267),   -- Typically followed by a value
                                                   -- entry and a units entry
                                                   -- (MPH/KPH)
    speed-limit                           (268),   -- Typically followed by a value
                                                   -- entry and a units entry
                                                   -- (MPH/KPH)
    travel-time                           (269),   -- Typically followed by a value
                                                   -- entry and a units entry
```

- 43 -

```
                                                  -- (seconds)
merging-traffic                      (272),   -- NEW: Typically followed by
                                              -- direction left/right. Can be
                                              -- used for W4-1R and W4-1L signs
-- Cancel Types
traffic-flowing-freely               (379),
traffic-easing                       (380),   -- Alternative rendering: traffic
                                              -- clearing
traffic-returned-to-normal           (381),
no-problems-to-report                (382),
traffic-congestion-cleared           (383),
-- Accidents and Incidents
-- Accidents
accident                             (513),   -- Use when no further data is
                                              -- available regarding involved
                                              -- vehicle type
serious-accident                     (514),
injury-accident                      (515),
minor-accident                       (516),
multi-vehicle-accident               (517),   -- To be used when events are NOT
                                              -- distributed along a road
                                              -- segment (i.e. one location)
numerous-accidents                   (518),   -- To be used when events are
                                              -- distributed along a road
                                              -- segment
accident-involving-a-bicycle         (519),
accident-involving-a-bus             (520),
accident-involving-a-motorcycle      (521),
accident-involving-a-pedestrian      (522),
accident-involving-a-train           (523),
accident-involving-a-truck           (524),
accident-involving-a-semi-trailer    (562),
accident-involving-hazardous-materials (525),
earlier-accident                     (526),   -- Hint: Typically used as a
                                              -- cause, as with "Due to"
medical-emergency                    (527),
secondary-accident                   (528),
rescue-and-recovery-work-REMOVED     (529),   -- Removed, use Rescue and
                                              -- recovery work in progress in
                                              -- the Incident Response Status
                                              -- group when needed
accident-investigation-work          (530),
incident                             (531),   -- Hint: For non-accident
                                              -- incidents (disabled, police
                                              -- pull over, etc.) where no
                                              -- further information is
                                              -- available
-- Disabled, etc.
stalled-vehicle                      (532),
abandoned-vehicle                    (533),
disabled-vehicle                     (534),
disabled-truck                       (535),
disabled-semi-trailer                (536),   -- Alternative Rendering:
                                              -- disabled tractor-trailer
disabled-bus                         (537),
disabled-train                       (538),
vehicle-spun-out                     (539),
vehicle-on-fire                      (540),
vehicle-in-water                     (541),
vehicles-slowing-to-look-at-accident (542),   -- Alternative Rendering:
                                              -- On-looker slowdown,
                                              -- Rubbernecking
-- Jackknifed
jackknifed-semi-trailer              (543),   -- Alternatives can use:
                                              -- jackknifed tractor-trailer,
                                              -- jackknifed truck, jackknifed
                                              -- big-rig
jackknifed-trailer-home              (544),
jackknifed-trailer                   (545),   -- Hint: Used for smaller
                                              -- trailers (i.e. not type
                                              -- "jackknifed semi trailer"
```

- 44 -

```
                                                -- above)
-- Spills
spillage-occurring-from-moving-vehicle    (546),
acid-spill                                (547),
chemical-spill                            (548),
fuel-spill                                (549),
hazardous-materials-spill                 (550),    -- Also use the Disaster lists
                                                    -- for large HAZMAT events
oil-spill                                 (551),
spilled-load                              (552),
toxic-spill                               (553),
-- Overturned. Stuck
overturned-vehicle                        (554),    -- Use when no further data is
                                                    -- available regarding involved
                                                    -- vehicle types
overturned-truck                          (555),
overturned-semi-trailer                   (556),
overturned-bus                            (557),
derailed-train                            (558),
stuck-vehicle                             (559),    -- It is preferred to provide
                                                    -- data which denotes WHY the
                                                    -- vehicle is stuck (i.e.
                                                    -- mud/snow, under bridge, too
                                                    -- wide, etc.)
truck-stuck-under-bridge                  (560),    -- Alternative Rendering:  high
                                                    -- load hit involving truck
bus-stuck-under-bridge                    (561),    -- Alternative Rendering:  high
                                                    -- load hit involving bus
-- Cancel Types
accident-cleared                          (638),
incident-cleared                          (639),
-- Closures (Road and Lane)
closed-to-traffic                         (769),    -- Used for road-closed and
                                                    -- variations
closed                                    (770),    -- Hint: use this only for NON
                                                    -- road-lane items (such as a
                                                    -- rest stop)
closed-ahead                              (771),
closed-intermittently                     (772),
closed-for-repairs                        (773),
closed-for-the-season                     (774),
blocked                                   (775),
blocked-ahead                             (776),
reduced-to-one-lane                       (777),
reduced-to-two-lanes                      (778),
reduced-to-three-lanes                    (779),
collapse                                  (780),    -- Used with bridges and tunnels
out                                       (781),    -- Used with bridges and roads
-- Cancel Types
open-to-traffic                           (891),
open                                      (892),    -- Hint: use this only for NON
                                                    -- road-lane items (such as a
                                                    -- rest stop)
reopened-to-traffic                       (893),
clearing                                  (894),
cleared-from-road                         (895),
-- Roadwork
-- Roads
road-construction                         (1025),   -- Alt text: Road Work
major-road-construction                   (1026),
long-term-road-construction               (1027),
construction-work                         (1028),
paving-operations                         (1029),
work-in-the-median                        (1030),
road-reconstruction                       (1031),
opposing-traffic                          (1032),
narrow-lanes                              (1033),
construction-traffic-merging              (1034),
single-line-traffic-alternating-directions (1035),
road-maintenance-operations               (1036),
road-marking-operations                   (1037),
```

```
road-widening                       (1061),    -- Used for roadwork, not as an
                                               -- MUTCD sign
cracks                              (1052),    -- Used for disjoint roadway
                                               -- surface
crack-REMOVE                        (1058),    -- No Longer Used. Used for
                                               -- disjoint roadway surface
bumps                               (1053),    -- Used for swelling
drop-off                            (1059),
storm-drain                         (1054),
-- Bridges
bridge-maintenance-operations       (1038),
bridge-construction                 (1039),
bridge-demolition-work              (1040),
seismic-retrofit                    (1060),    -- All types of earthquake
                                               -- construction

-- Other
overgrown-grass                     (1055),
overgrown-brushshrubs               (1056),
overgrown-trees                     (1057),
blasting                            (1041),    -- See also: avalanche
avalanche-control-activities        (1042),
water-main-work                     (1043),
gas-main-work                       (1044),
work-on-underground-cables          (1045),
work-on-underground-services        (1046),
new-road-construction-layout        (1047),
new-road-layout                     (1048),
temporary-lane-markings             (1049),
temporary-traffic-lights            (1050),
emergency-maintenance               (1051),
utiltity-work                       (1062),    -- NEW:
-- Cancel Types
road-maintenance-cleared            (1146),
normal-road-layout-restored         (1147),
road-work-clearance-in-progress     (1148),
road-construction-cleared           (1149),
normal-traffic-lanes-restored       (1150),
road-work-cleared                   (1151),
-- Obstructions
-- General
obstruction-on-roadway              (1281),
object-on-roadway                   (1282),
objects-falling-from-moving-vehicle (1283),
debris-on-roadway                   (1284),
storm-damage                        (1285),
-- People
people-on-roadway                   (1286),
bicyclists-on-roadway               (1287),
sightseers-obstructing-access       (1288),
large-numbers-of-visitors           (1289),
-- Animals
animal-on-roadway                   (1290),
large-animal-on-roadway             (1291),
herd-of-animals-on-roadway          (1292),
animal-struck                       (1293),
-- Specific Items
advertising-signs                   (1315),    -- Used for illegal signage as
                                               -- well
fallen-trees                        (1294),
over-turned-trees                   (1311),
tree-limbs                          (1312),
utility-pole-down                   (1314),
downed-power-lines                  (1295),    -- Alternative Rendering:  fallen
                                               -- power lines
downed-cables                       (1296),    -- Alternative Rendering:  fallen
                                               -- cables
subsidence                          (1297),    -- Alternative Rendering: road
                                               -- collapse
road-surface-collapse               (1298),
frost-jacking                       (1317),    -- A unique Alaska problem caused
                                               -- by culverts or other features
```

```
                                                   -- jacking out of ground due to
                                                   -- freezing
frost-heave                           (1316),      -- A large standing wave of soil
                                                   -- under pavement due to frost
                                                   -- action

pavement-buckled                      (1299),
pothole                               (1300),
flooding                              (1301),
broken-water-main                     (1302),
collapsed-sewer                       (1303),
wash-out                              (1319),      -- What can happen to roads
washboard                             (1318),      -- A term for rough road or
                                                   -- unpaved roads

sewer-overflow                        (1304),
gas-leak                              (1305),
snowmelt                              (1306),      -- Hint: Typically used as a
                                                   -- cause

mudslide                              (1307),
avalanche                             (1308),      -- Possibly a disaster as well
rockfall                              (1309),
landslide                             (1310),
-- Cancel Types
clearance-work                        (1406),
obstruction-cleared                   (1407),
-- Delays, Status, And Cancellations
-- Delays
delays                                (1537),
short-delays                          (1538),
long-delays                           (1539),
very-long-delays                      (1540),
delays-of-uncertain-duration          (1541),
delayed-until-further-notice          (1542),
busy                                  (1543),      -- Hint: Combine with generic
                                                   -- locations (station busy, etc.)

very-busy                             (1544),
crowded                               (1545),
overcrowded                           (1546),
-- Cancellations
cancellations                         (1547),
route-cancelled-and-no-replacement    (1548),
service-cancelled                     (1549),
service-suspended                     (1550),
service-withdrawn                     (1551),
service-fully-booked                  (1552),
all-services-fully-booked             (1553),
-- Service Levels
next-departure                        (1554),      -- Typically followed by a time
                                                   -- value
next-arrival                          (1555),      -- Typically followed by a #
                                                   -- value of time

very-frequent-service                 (1556),
frequent-service                      (1557),
fairly-frequent-service               (1558),
regular-service                       (1559),
irregular-service                     (1560),
not-operating                         (1561),
-- Other
system-busy                           (1562),      -- In this context "system" means
                                                   -- the entire network of services
                                                   -- over a wide area such as an
                                                   -- airline system

system-very-busy                      (1563),
system-crowded                        (1564),
system-overcrowded                    (1565),
deleted-travel-time                   (1566),      -- A duplicate entry, now removed
                                                   -- in favor of item 269
headway                               (1567),      -- Typically followed by a #
                                                   -- value of time
extra-services-in-operation           (1568),
-- Cancel Types
delays-clearing                       (1660),
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- 47 -

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delays-cleared                          (1661),
normal-services-resumed                 (1662),
operating                               (1663),    -- Use operating for "services"
                                                   -- such as bus service
-- Unusual Driving
vehicle-traveling-wrong-way             (1793),
reckless-driver                         (1794),    -- Alternative Rendering:
                                                   -- erratic driver
prohibited-vehicle-on-roadway           (1795),
emergency-vehicles-on-roadway           (1796),
high-speed-emergency-vehicles           (1797),
high-speed-chase                        (1798),
-- Cancel Types
dangerous-vehicle-warning-cleared       (1918),
emergency-vehicle-warning-cleared       (1919),
-- Mobile Situation
abnormal-load                           (2049),
wide-load                               (2050),
long-load                               (2051),
slow-vehicle                            (2052),
farm-equipment                          (2053),
horse-drawn-vehicles                    (2054),
overheight-load                         (2055),
overweight-load                         (2056),
tracked-vehicle                         (2057),
vehicle-carrying-hazardous-materials    (2058),
slow-moving-maintenance-vehicle         (2059),    -- Hint: mowing, line stripping,
                                                   -- sweepers, etc.
convoy                                  (2060),
military-convoy                         (2061),
refugee-convoy                          (2062),
motorcade                               (2063),
mobile-situation-repositioning          (2064),
winter-maintenance-vehicles             (2065),
snowplows                               (2066),
-- Cancel Types
slow-moving-maintenance-vehicle-warning-cleared (2172),
exceptional-load-warning-cleared        (2173),
hazardous-load-warning-cleared          (2174),
convoy-cleared                          (2175),
-- Device And Equipment Status
lane-control-signs-not-working          (2305),
lane-control-signs-working-incorrectly  (2306),
lane-control-signs-operating            (2307),
variable-message-signs-not-working      (2308),
variable-message-signs-working-incorrectly (2309),
variable-message-signs-operating        (2310),
emergency-telephones-not-working        (2311),
emergency-telephone-number-not-working  (2312),
traffic-lights-not-working              (2313),
traffic-lights-working-incorrectly      (2314),
ramp-control-signals-not-working        (2315),
ramp-control-signals-working-incorrectly (2316),
temporary-traffic-lights-not-working    (2317),
temporary-traffic-lights-working-incorrectly (2318),
traffic-signal-control-computer-not-working (2319),
traffic-signal-timings-changed          (2320),
overheight-warning-system-triggered     (2321),
equipment-failure                       (2322),
railroad-crossing-equipment-failure     (2323),
tunnel-ventilation-not-working          (2324),
power-failure                           (2325),    -- Hint: Use for localized cases
                                                   -- of power loss
widespread-power-outages                (2326),    -- Alternative  rendering:
                                                   -- widespread power cuts
technical-problems                      (2327),
sign-down                               (2328),
lines-in-road-faded                     (2329),
damaged-light-standard                  (2330),    -- Used for all forms of pole /
                                                   -- support damage
traffic-signal-stuck-on-flash           (2331),
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guide-rail                                    (2332),   -- Used for barriers as well
fencing                                       (2333),
light-standard-hanging-by-wires               (2334),
call-box                                      (2335),
signal-cabinet                                (2336),   -- Use for all types of equipment
                                                        -- cabinets
detector                                      (2337),   -- All forms of vehicle detectors
improper-use-of-State-vehicle-or-equipment (2338),
bulb-out                                      (2339),
not-yet-operational                           (2340),   -- When installed but not yet
                                                        -- brought on-line for use by the
                                                        -- system
not-yet-installed                             (2341),   -- When planned
-- Cancel Types
electronic-signs-repaired                     (2428),
emergency-call-facilities-restored            (2429),
traffic-signals-repaired                      (2430),
railroad-crossing-equipment-now-working-normally (2431),
-- Restrictions
restrictions                                  (2561),
ramp-restrictions                             (2562),
truck-restriction                             (2563),
speed-restriction                             (2564),   -- Used for required speeds, not
                                                        -- advised speeds
noise-restriction                             (2565),
traffic-regulations-have-been-changed         (2566),
local-access-only                             (2567),
no-trailers                                   (2568),
no-high-profile-vehicles                      (2569),
hazardous-materials-truck-restriction         (2570),
no-through-traffic                            (2571),
no-motor-vehicles                             (2572),
width-limit                                   (2573),   -- Typically followed by a number
                                                        -- and unit value
height-limit                                  (2574),   -- Typically followed by a number
                                                        -- and unit value
length-limit                                  (2575),   -- Typically followed by a number
                                                        -- and unit value
axle-load-limit                               (2576),   -- Typically followed by a number
                                                        -- and unit value
gross-weight-limit                            (2577),   -- Typically followed by a number
                                                        -- and unit value
axle-count-limit                              (2578),   -- Typically followed by a number
                                                        -- and unit value
carpool-lane-available                        (2579),
carpool-restrictions-changed                  (2580),
hOV-2-no-single-occupant-vehicles             (2581),
hOV-3-no-vehicles-with-less-than-three-occupants (2582),
bus-lane-available-for-all-vehicles           (2583),
truck-lane-available-for-all-vehicles         (2584),
permits-call-in-basis                         (2585),
permits-temporarily-closed                    (2586),
permits-closed                                (2587),
road-use-permits-required                     (2588),   -- NEW:
-- Cancel Types
permits-open                                  (2675),
restrictions-for-high-profile-vehicles-lifted (2676),
width-limit-lifted                            (2677),
height-limit-lifted                           (2678),
length-limit-lifted                           (2679),
axle-load-limit-lifted                        (2680),
weight-limit-lifted                           (2681),
axle-count-limit-lifted                       (2682),
carpool-restrictions-lifted                   (2683),
lane-restrictions-lifted                      (2684),
ramp-restrictions-lifted                      (2685),
motor-vehicle-restrictions-lifted             (2686),
restrictions-lifted                           (2687),
-- Incident Response Status
unconfirmed-report                            (2817),
initial-response-en-route                     (2818),
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follow-up-response-en-route              (2819),
initial-response-on-scene                (2820),
follow-up-response-on-scene              (2821),
confirmed-report                         (2822),
scene-is-unsecured-at-this-time          (2823),   -- Caution: This has different
                                                   -- meanings in Public Safety use
response-scene-secured                   (2824),   -- Caution: This has different
                                                   -- meanings in Public Safety use
rescue-and-recovery-work-in-progress     (2825),
extraction-in-progress                   (2826),
clearance-work-in-progress               (2827),
body-removal-operations                  (2828),
fire-containment-contained               (2829),
fire-containment-not-contained           (2830),
event-cleared                            (2831),   -- Meaning that responder has
                                                   -- left scene, not that
                                                   -- surrounding traffic has
                                                   -- cleared to a normal level
traffic-clearing                         (2832),
incident-closed                          (2833),   -- A "case closed" meaning which
                                                   -- can differ considerably by
                                                   -- local agency policies

-- Disasters
-- Water Related
flash-flood                              (3073),
major-flood                              (3074),
reservoir-failure                        (3075),
levee-failure                            (3076),
tsunami                                  (3077),
tidal-wave                               (3078),
-- Fire Related
volcanic-eruption                        (3079),
ash-fall                                 (3080),
lava-flow                                (3081),
serious-fire                             (3082),
forest-fire                              (3083),
wildfire                                 (3084),
building-fire                            (3085),
brush-fire                               (3086),
grass-fire                               (3087),
fire-danger-extreme                      (3088),
fire-danger-very-high                    (3089),
fire-danger-high                         (3090),
fire-danger-medium                       (3091),
fire-danger-low                          (3092),
--   Other
earthquake-damage                        (3093),
air-crash                                (3094),
rail-crash                               (3095),
toxic-release                            (3096),
toxic-leak                               (3097),
radioactive-release                      (3098),
radiation-hazard                         (3099),
reactor-leakage                          (3100),
explosion                                (3101),
major-hazardous-materials-fire           (3102),   -- Alternative Rendering:  Major
                                                   -- HAZMAT fire
major-hazardous-materials-release        (3103),   -- Alternative Rendering:  Major
                                                   -- HAZMAT release

-- Cancel Types
disaster-cleared                         (3199),
-- Disturbances
assault                                  (3329),   -- This index is not to be used
                                                   -- as a default value for this
                                                   -- category
crime                                    (3330),
robbery                                  (3331),
fare-dispute                             (3332),
shooting                                 (3333),
gunfire-on-roadway                       (3334),
suicide                                  (3335),
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fight                                   (3336),   -- Involves a few  persons and is
                                                  -- localized (alt: brawl)
gang-fight                              (3337),   -- Multi-party event occurring
                                                  -- which may involve weapons
person-harassment                       (3338),   -- "person" may be rendered as
                                                  -- "passenger" if used in a
                                                  -- controlled environment such as
                                                  -- transit
person-injured                          (3339),
sick-customer                           (3363),
unruly-passenger                        (3340),
person-intoxicated                      (3341),
crowd-control-problem                   (3342),
demonstration                           (3343),
march                                   (3344),
public-disturbance                      (3345),
riot                                    (3346),
civil-unrest                            (3347),
civil-emergency                         (3348),
strike                                  (3349),
public-transit-strike                   (3350),   -- Hint: Strike affecting
                                                  -- services
stampede                                (3351),
teargas-used                            (3352),
security-alert                          (3353),   -- Heightened security procedures
                                                  -- in effect
security-incident                       (3354),
checkpoint                              (3355),
bomb-alert                              (3356),
terrorist-incident                      (3357),
high-velocity-shell-fire                (3358),   -- Hint: Used as a part of
                                                  -- avalanche control
explosives-in-use                       (3359),
air-raid                                (3360),
weapons-of-mass-destruction-threat      (3361),
military-operations                     (3362),   -- (war)
-- Cancel Types
security-problem-cleared                (3454),
traffic-disturbance-cleared             (3455),
-- Sporting Events
sports-event                            (3585),
game                                    (3586),
tournament                              (3587),
track-and-field-event                   (3588),
baseball-game                           (3589),
basketball-game                         (3590),
boxing-match                            (3591),
football-game                           (3592),
soccer-game                             (3593),
golf-tournament                         (3594),
hockey-game                             (3595),
tennis-tournament                       (3596),
wrestling-match                         (3597),
road-race                               (3598),   -- Hint: used for motorcycle
                                                  -- races as well
automobile-race                         (3599),
bicycle-race                            (3600),
race-event                              (3601),
marathon                                (3602),
horse-show                              (3603),
rodeo                                   (3604),
water-sports-event                      (3605),
winter-sports-event                     (3606),
skating-event                           (3607),
dog-sled-race                           (3608),
-- Cancel Types
sporting-event-ended                    (3711),
-- Special Events
major-event                             (3841),
airshow                                 (3842),
hot-air-ballooning                      (3843),
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concert                                    (3844),
state-occasion                             (3845),
vIP-visit                                  (3846),
show                                       (3847),
festival                                   (3848),     -- Used for farmers' markets as
                                                       -- well
exhibition                                 (3849),
performing-arts                            (3850),
outdoor-market                             (3851),     -- Used for farmers' markets as
                                                       -- well
fair                                       (3852),
carnival                                   (3853),
fireworks-display                          (3854),
trade-expo                                 (3855),
movie-filming                              (3856),
presidential-visit                         (3857),
parade                                     (3858),
procession                                 (3859),
funeral-procession                         (3860),
crowd                                      (3861),
holiday-traffic-crowds                     (3862),
-- Cancel Types
event-ended                                (3967),
-- Parking Information
normal-parking-restrictions-lifted         (4097),     -- Hint: used when a PARKING
                                                       -- restriction is lifted
                                                       -- (overnight parking allowed
                                                       -- during event)  Not to be used
                                                       -- as a default for this category
parking-meter-restrictions-lifted          (4098),     -- Hint: used when a METER
                                                       -- restriction is lifted (metered
                                                       -- parking free during event)
special-parking-restrictions-in-force      (4099),
full-parking-lot                           (4100),
full-parking-garage                        (4101),
all-parking-lots-full                      (4102),
no-parking-spaces-available                (4103),
only-a-few-spaces-available                (4104),
spaces-available                           (4105),     -- Typically preceded by a #
                                                       -- value
no-parking                                 (4106),     -- Typically followed by
                                                       -- restriction data
parking-on-one-side-of-street-only         (4107),
parking-on-both-sides-of-street            (4108),
parallel-parking-only                      (4109),
parking-meters-not-available               (4110),
use-of-parking-meters-restricted           (4111),
event-parking                              (4112),
handicapped-parking                        (4113),
long-term-parking                          (4114),
overnight-parking                          (4115),
short-term-parking                         (4116),
parking-by-permit-only                     (4117),
emergency-parking-only                     (4118),     -- NEW:
emergency-stopping-only                    (4119),     -- NEW:
parking                                    (4120),     -- NEW:  Typically followed by
                                                       -- restriction data
stopping                                   (4121),     -- NEW:  Typically followed by
                                                       -- restriction data
standing                                   (4122),     -- NEW:  Typically followed by
                                                       -- restriction data
tow-away-zone                              (4123),     -- NEW:
school-zone                                (4124),     -- NEW:  Treat as Speed Limit,
                                                       -- with details to follow
speed-zone                                 (4125),     -- NEW:  Treat as Speed Limit,
                                                       -- with details to follow
loading-zone                               (4126),     -- NEW:  Typically followed by
                                                       -- restriction data
state-law                                  (4127),     -- NEW:
van-accessible                             (4128),     -- NEW:
-- Cancel Types
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special-parking-restrictions-lifted      (4222),
no-parking-information-available          (4223),
-- Information System
information-available-on-radio            (4353),   -- Not to be used as a default
                                                    -- for this category D12-1

information-available-on-TV               (4354),
call-to-get-information                   (4355),
information-available-via-Internet        (4356),
test-message                              (4357),   -- Not to be displayed on
                                                    -- consumer devices if possible
no-information-available                  (4358),   -- Typically combined with "on
                                                    -- xxx service" where xxx is a
                                                    -- type of service (bus, rail,
                                                    -- etc.)
null-description                          (4359),   -- (but with event location or
                                                    -- other information provided in
                                                    -- the message)
police-assistance                         (4361),   -- NEW:
police-monitor-CB                         (4362),   -- NEW: D12-3
emergency-notification                    (4363),   -- NEW:
in-emergency-dial-911                     (4364),   -- NEW: D12-14
travel-Info-call-511                      (4365),   -- NEW: D`12-5
car-pool-information                      (4366),   -- NEW: D12-2
information-service-resumed               (4478),
-- Cancel Types
information-service-is-being-suspended    (4360),
message-canceled                          (4479),   -- Not Recommended for use
-- Weather Conditions
-- General Weather
overcast                                  (4609),   -- This index is not to be used
                                                    -- as a default value for this
                                                    -- category
cloudy                                    (4610),
mostly-cloudy                             (4611),
partly-cloudy                             (4612),
partly-sunny                              (4613),
mostly-sunny                              (4614),
sunny                                     (4615),
fair-skies                                (4616),
clear-skies                               (4617),
mostly-clear                              (4618),
mostly-dry                                (4619),
dry                                       (4620),
uV-index-very-high                        (4621),
uV-index-high                             (4622),
uV-index-moderate                         (4623),
uV-index-low                              (4624),
uV-index-very-low                         (4625),
barometric-pressure                       (4626),   -- Typically followed by a number
                                                    -- and value
ozone-alert                               (4627),
-- Lighting Types
lighting-unknown                          (4628),
artificial-exterior-light                 (4629),
artificial-interior-light                 (4630),
darkness                                  (4631),   -- Also used when not lighted
dusk                                      (4632),
dawn                                      (4633),
moonlight                                 (4634),
daylight                                  (4635),
-- Cancel Types
weather-forecast-withdrawn                (4735),
-- Precipitation
severe-weather                            (4865),
blizzard                                  (4866),
heavy-snow                                (4867),
snow                                      (4868),
light-snow                                (4869),
snow-showers                              (4870),
winter-storm                              (4871),
ice-glaze                                 (4872),
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heavy-frost                       (4873),
frost                             (4874),
ice-storm                         (4875),
sleet                             (4876),
rain-and-snow-mixed               (4877),
rain-changing-to-snow             (4878),
damaging-hail                     (4879),
hail                              (4880),
thunderstorms                     (4881),
thundershowers                    (4882),
extremely-heavy-downpour          (4883),
heavy-rain                        (4884),
rain                              (4885),
light-rain                        (4886),
drizzle                           (4887),
showers                           (4888),
dew                               (4889),
-- Cancel Types
precipitation-cleared             (4991),
-- Winds
tornado                           (5121),   -- Note that this can be combined
                                            -- with "alert" "warning" etc.
                                            -- This index is not to be used
                                            -- as a default value for this
                                            -- category

hurricane                         (5122),
hurricane-force-winds             (5123),
tropical-storm                    (5124),
gale-force-winds                  (5125),
storm-force-winds                 (5126),
strong-winds                      (5127),
moderate-winds                    (5128),
light-winds                       (5129),
calm                              (5130),
gusty-winds                       (5131),
crosswinds                        (5132),
windy                             (5133),
-- Cancel Types
strong-winds-have-eased           (5246),
strong-wind-forecast-withdrawn    (5247),
-- Visibility & Air Quality
-- Visibility
dense-fog                         (5377),   -- This index is not to be used
                                            -- as a default value for this
                                            -- category

fog                               (5378),
patchy-fog                        (5379),
freezing-fog                      (5380),
ice-fog                           (5405),   -- Different than freezing fog,
                                            -- ice fog occurs well below
                                            -- freezing temps and is quite
                                            -- common in the Fairbanks area.
mist                              (5381),
haze                              (5382),
visibility-reduced                (5383),
visibility-blocked                (5404),   -- Used when signs, trees, etc.,
                                            -- block the view
white-out                         (5384),   -- Alternative Rendering:  Snow
                                            -- glare
blowing-snow                      (5385),
smoke-hazard                      (5386),
spray-hazard                      (5387),
low-sun-glare                     (5388),   -- Do not use for snow glare
snow-glare                        (5389),
blowing-dust                      (5390),
blowing-sand                      (5391),   -- Hint: dune accumulations
dust-storms                       (5392),
sandstorms                        (5393),
-- Air Quality
air-quality-good                  (5394),
air-quality-fair                  (5395),
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air-quality-poor                        (5396),
air-quality-very-poor                   (5397),
severe-exhaust-pollution                (5398),
smog-alert                              (5399),
pollen-count-high                       (5400),
pollen-count-medium                     (5401),
pollen-count-low                        (5402),
swarms-of-insects                       (5403),
-- Cancel Types
fog-clearing                            (5499),
visibility-improved                     (5500),
fog-forecast-withdrawn                  (5501),
pollution-alert-ended                   (5502),
air-quality-improved                    (5503),
-- Temperature
maximum-temperature                     (5633),    -- This index is not to be used
                                                   -- as a default value for this
                                                   -- category
temperature                             (5634),    -- Typically followed by a number
                                                   -- value and a unit value

minimum-temperature                     (5635),
current-temperature                     (5636),
heat-index                              (5637),
extreme-heat                            (5638),
hot                                     (5639),
hotter                                  (5640),
heat                                    (5641),
warmer                                  (5642),
warm                                    (5643),
mild                                    (5644),
cool                                    (5645),
cooler                                  (5646),
cold                                    (5647),
colder                                  (5648),
very-cold                               (5649),
extreme-cold                            (5650),
wind-chill                              (5651),
dewpoint                                (5652),
relative-humidity                       (5653),
-- Cancel Types
temperatures-close-to-the-seasonal-norm (5758),
less-extreme-temperatures               (5759),
-- Pavement Conditions
-- General
impassable                              (5889),
almost-impassable                       (5890),
passable-with-care                      (5891),
passable                                (5892),
surface-water-hazard                    (5893),
danger-of-hydroplaning                  (5894),
wet-pavement                            (5895),
treated-pavement                        (5896),    -- Alternative Rendering:
                                                   -- chemical wet
slippery                                (5897),
low-ground-clearance                    (5938),    -- NEW: Use for W12-2 types
at-grade-level-crossnig                 (5937),    -- NEW:
-- On Roadway items
mud-on-roadway                          (5898),
leaves-on-roadway                       (5899),
loose-sand-on-roadway                   (5900),
loose-gravel                            (5901),
fuel-on-roadway                         (5902),
oil-on-roadway                          (5903),
road-surface-in-poor-condition          (5904),
melting-tar                             (5905),
uneven-lanes                            (5935),    -- NEW:
rough-road                              (5931),    -- NEW:
rough-crossing                          (5936),    -- NEW: Typically used with grade
                                                   -- crossings at rails
-- Ice & Snow
ice                                     (5906),
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icy-patches                              (5907),
black-ice                                (5908),
ice-pellets-on-roadway                   (5909),
ice-build-up                             (5910),
freezing-rain                            (5911),
wet-and-icy-roads                        (5912),
slush                                    (5914),
melting-snow                             (5913),
frozen-slush                             (5915),
snow-on-roadway                          (5916),
packed-snow                              (5917),
packed-snow-patches                      (5918),
plowed-snow                              (5919),
wet-snow                                 (5920),
fresh-snow                               (5921),
powder-snow                              (5922),
granular-snow                            (5923),
frozen-snow                              (5924),
crusted-snow                             (5925),
deep-snow                                (5926),
snow-drifts                              (5927),
drifting-snow                            (5928),
expected-snow-accumulation               (5929),
current-snow-accumulation                (5930),
-- Road Surface
sand                                     (5932),    -- NEW: Can use for W7-4d
gravel                                   (5933),    -- NEW: Can use for W7-4e
paved                                    (5934),    -- NEW: Can use for W7-4f
-- Cancel Types
dry-pavement                             (6011),
snow-cleared                             (6012),
pavement-conditions-improved             (6013),
skid-hazard-reduced                      (6014),
pavement-conditions-cleared              (6015),
-- Winter Driving Restrictions and Recommendations
winter-equipment-recommended             (6145),
winter-equipment-required                (6146),
snow-chains-recommended                  (6147),
snow-chains-required                     (6148),
snow-chains-prohibited                   (6149),
studded-tires-prohibited                 (6150),
snow-tires-recommended                   (6151),
snow-tires-required                      (6152),
four-wheel-drive-recommended             (6153),
four-wheel-drive-required                (6154),
snow-tires-or-chains-recommended         (6155),
snow-tires-or-chains-required            (6156),
-- Cancel Types
winter-driving-requirements-lifted       (6271),    -- In early editions this was
                                                     -- incorrectly listed as code
                                                     -- 6157

-- Winter Driving Index
driving-conditions-good                  (6401),
driving-conditions-fair                  (6402),
difficult-driving-conditions             (6403),
very-difficult-driving-conditions        (6404),
hazardous-driving-conditions             (6405),
extremely-hazardous-driving-conditions   (6406),
-- Suggestion Advice
why-not-ride-share                       (6657),
is-this-your-no-ride-day                 (6658),
why-not-use-transit                      (6659),
why-not-park-and-ride                    (6660),
why-not-try-paratransit                  (6661),
why-not-travel-by-rail                   (6662),
why-not-use-the-subway                   (6663),
why-not-try-rapid-transit                (6664),
why-not-travel-by-bus                    (6665),
your-parking-ticket-covers-the-return-ride (6666),
avoid-the-rush-hour                      (6667),
do-not-allow-unnecessary-gaps            (6668),
```

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    follow-the-vehicle-in-front-smoothly       (6669),
    do-not-slow-down-unnecessarily             (6670),
    watch-for-muggers                          (6671),
    watch-for-pickpockets                      (6672),
    watch-for-thieves                          (6673),
    sorry-for-any-delay                        (6674),
    thank-you-for-your-understanding           (6675),
    we-appreciate-your-patience                (6676),
    we-are-grateful-for-your-cooperation       (6677),
    share-the-road                             (6678),   -- NEW:
    -- Warning Advice
    risk                                       (6913),   -- Conditions are more likely
                                                         -- than "normal"
    watch                                      (6914),   -- Conditions are favorable for
                                                         -- an event to occur
    warning                                    (6915),   -- An event has occurred but is
                                                         -- not (yet) near
    alert                                      (6916),   -- An event has occurred and it
                                                         -- is near
    danger                                     (6917),
    danger-of-explosion                        (6918),
    danger-of-fire                             (6919),
    extra-police-patrols-in-operation          (6920),
    look-out-for-vehicles-stopped-under-bridges (6921),
    increased-risk-of-accident                 (6922),
    rescue-and-recovery-work-in-progress-at-sceneREMOVED (6923), -- No long used, see
item 2825
    police-at-scene                            (6924),
    emergency-vehicles-at-scene                (6925),
    traffic-being-directed-around-accident-area (6926),
    police-directing-traffic                   (6927),
    rescue-workers-directing-traffic           (6928),
    repairs-in-progress                        (6929),
    pilot-car-in-operation                     (6930),
    look-out-for-flagger                       (6931),   -- Alternative Rendering:  look
                                                         -- out for flagman
    look-out-for-workers                       (6952),   -- NEW: Alternative Rendering:
                                                         -- workers
    police-checks-in-operation                 (6932),   -- Hint: all types of checks
    truck-check-point                          (6937),
    lockdown                                   (6935),
    security-check-point                       (6936),
    single-occupancy-vehicle-check-point       (6938),
    mandatory-speed-limit-in-force             (6933),
    speed-limit-in-force-for-heavy-vehicles    (6934),
    behind-you                                 (6950),   -- NEW:
    ride-with-traffic                          (6953),   -- NEW:
    -- MUTCD Signs
    look                                       (6939),   -- NEW:
    photo-enforced                             (6940),   -- NEW:
    traffic-signs                              (6951),   -- NEW:
    traffic-laws                               (6941),   -- NEW:
    use-low-gear                               (6942),   -- NEW:
    bridge-ices-before-road                    (6943),   -- NEW:
    speed-checked-by-radar                     (6944),   -- NEW:
    speed-checked-by-aircraft                  (6945),   -- NEW:
    fines                                      (6946),   -- NEW:
    fines-higher                               (6947),   -- NEW:
    fines-doubled                              (6948),   -- NEW:
    fines-tripled                              (6949),   -- NEW:
    -- Cancel Types
    warning-canceled                           (7034),   -- Canceling a warning may
                                                         -- "revert" to a watch
    watch-canceled                             (7035),
    alert-canceled                             (7036),   -- Canceling an alert may
                                                         -- "revert" to a warning
    ended                                      (7037),   -- Hint: used for many sporting /
                                                         -- special events
    cleared                                    (7038),
    canceled                                   (7039),
    -- Instructions (Recommendations)
```

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drive-carefully                                 (7169),
drive-with-extreme-caution                      (7170),
approach-with-care                              (7171),
keep-your-distance                              (7172),
increase-normal-following-distance              (7173),
test-your-brakes                                (7174),
cross-intersection-with-care                    (7175),
pass-with-care                                  (7176),  -- Use as MUTCD sign
pass                                            (7200),  -- NEW: Used for passiong action,
                                                         -- as in do not pass
use-low-beam-headlights                         (7177),
use-fog-lights                                  (7178),
use-hazard-warning-lights                       (7179),  -- Alternative Rendering:  use
                                                         -- blinkers
do-not-leave-your-vehicle                       (7180),
leave-your-vehicle-and-proceed-to-next-safe-place (7181),
turn-off-engine                                 (7182),  -- Alternative Rendering: switch
                                                         -- off engine
close-all-windows-turn-off-heater-air-conditioner-and-vents (7183),
turn-off-air-conditioner-to-prevent-engine-overheating (7184),
turn-off-mobile-phones-and-two-way-radios (7185),  -- Alternative Rendering:  switch
                                                         -- off mobile phones and two way
                                                         -- radios
prepare-to-stop                                 (7186),
be-prepared-to-stop                             (7201),  -- NEW:
stop-at-next-rest-area                          (7187),
stop-at-next-safe-place                         (7188),
only-travel-if-absolutely-necessary             (7189),
drive-to-another-service-area                   (7190),
use-through-traffic-lanes                       (7191),
use-local-traffic-lanes                         (7192),
use-left-hand-parallel-roadway                  (7193),
use-right-hand-parallel-roadway                 (7194),
use-heavy-vehicle-lane                          (7195),  -- Alternative Rendering:  use
                                                         -- truck lanes
observe-recommended-speed                       (7196),
signals-sequenced-for-speed                     (7202),  -- NEW: Typically followed by
                                                         -- speed
maintain-top-safe-speed                         (7203),  -- NEW:
facing-traffic                                  (7197),  -- NEW:
push-button                                     (7198),  -- NEW:
to-cross-street                                 (7199),  -- NEW:
-- Instructions (Mandatory)
keep-to-the-right                               (7425),
keep-to-the-left                                (7426),
use-right-lane                                  (7427),
use-left-lane                                   (7428),
stay-in-lane                                    (7450),  -- NEW:
merge                                           (7451),  -- NEW: Typically followed by
                                                         -- direction left/right Used for
                                                         -- W4-1R and W4-1L
heavy-vehicles-use-right-lane                   (7429),
heavy-vehicles-use-left-lane                    (7430),
observe-signals                                 (7431),
observe-signs                                   (7432),
no-passing                                      (7433),  -- Used for MUTCD signs
no-smoking                                      (7434),
no-open-flames                                  (7435),
use-shoulder-as-lane                            (7436),
do-not-drive-on-the-shoulder                    (7437),
allow-emergency-vehicles-to-pass                (7438),
clear-a-lane-for-emergency-vehicles             (7439),
pull-over-to-the-edge-of-the-roadway            (7440),
wait-for-escort-vehicle                         (7441),
in-emergency-wait-for-police-patrol             (7442),
reduce-your-speed                               (7443),
observe-speed-limits                            (7444),
check-point                                     (7445),
entry-requirements                              (7446),
insurance-requirements                          (7447),
firearms-requirements                           (7448),
```

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pet-requirements                           (7449),
slower-traffic-keep-right                  (7452),    -- NEW:
keep-off                                   (7453),    -- NEW: Typically followed by
                                                      -- object
-- Cancel Types
shoulder-travel-no-longer-allowed          (7547),
-- Qualifiers
-- Locations
above                                      (7681),    -- Not to be used as the default
                                                      -- for this category
below                                      (7682),
in                                         (7683),
around                                     (7684),
after                                      (7685),
before                                     (7686),
at                                         (7687),    -- Hint: used in conjunction with
                                                      -- generic locations
on                                         (7688),    -- Hint: used in conjunction with
                                                      -- "roadway" or other terms for
                                                      -- both places (on-shoulder) and
                                                      -- events (on-green)
near                                       (7689),    -- Hint: used with generic
                                                      -- locations and lanes
from-the                                   (7690),
terminal                                   (7691),
-- Weather Related
falling-slowly                             (7692),
falling                                    (7693),
falling-quickly                            (7694),
rising-slowly                              (7695),
rising                                     (7696),
rising-quickly                             (7697),
steady                                     (7698),
likely                                     (7699),
changing-to                                (7700),
mostly                                     (7701),
partly                                     (7702),
minus                                      (7703),
weather-ended                              (7704),
expected                                   (7705),
low                                        (7706),    -- Typically used in
                                                      -- temperatures. See also "upper"
mid                                        (7707),
high                                       (7708),
upper                                      (7709),    -- Typically used in
                                                      -- temperatures. See also "low"
unseasonably                               (7710),
reported                                   (7711),
-- Instructions
advice                                     (7712),
due-to                                     (7713),
proceed-to                                 (7714),
transferred-to                             (7715),
use                                        (7716),
-- Prepositional Use
affecting                                  (7717),
blocking                                   (7718),
connecting                                 (7719),
finished                                   (7720),    -- Alt term: finsh
for                                        (7721),
or                                         (7722),
-- Other
and                                        (7723),
later                                      (7724),
level                                      (7725),
shortly                                    (7726),
soon                                       (7727),
service                                    (7728),
graffiti                                   (7733),
damaged                                    (7729),
out-of-order                               (7730),    -- See Asset Status items as well
```

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on-State-right-of-way                  (7732),
found-property                         (7734),
vandalism                              (7731),
-- MUTCD Sign Usage
begin-time                             (7735),    -- NEW:  Typically followed by a
                                                  -- value entry and a time entry
                                                  -- (AM/PM)
added                                  (7736),    -- NEW:  Typically preceded by an
                                                  -- object entry
end-time                               (7737),    -- NEW:  Typically followed by a
                                                  -- value entry and a time entry
                                                  -- (AM/PM)
no                                     (7738),    -- NEW:  Typically followed by a
                                                  -- value entry and any day/time
                                                  -- limits
do-not                                 (7739),    -- NEW: Also used for "does not"
block                                  (7740),    -- NEW: Also used for blocks
except                                 (7741),    -- NEW:  Typically followed by a
                                                  -- value entry and a day/time
                                                  -- entry
day                                    (7742),    -- NEW: Alt: daytime, daylight
                                                  -- hours
night                                  (7743),    -- NEW: Alt: night time, night
                                                  -- time hours
any-time                               (7744),    -- NEW: Used also for "allowed"
has                                    (7745),    -- NEW: As in: has green (alt
                                                  -- form: with)
must                                   (7757),    -- NEW: As in: <lane> must <turn>
may-have                               (7746),    -- NEW: As in: may have green
may-excced                             (7759),    -- NEW: As in: may exceed 80 mph
only                                   (7747),    -- NEW:
lifted                                 (7748),    -- NEW: As in gate lifted
empty                                  (7749),    -- NEW:
turning                                (7750),    -- NEW: Used also for turns or
                                                  -- turn
u-turn                                 (7751),    -- NEW: As in no u-turn allowed
wait-for                               (7752),    -- NEW:
when-flashing                          (7753),    -- NEW:
duration                               (7754),    -- NEW:  Typically followed by a
                                                  -- value entry and a time entry
                                                  -- (Days/Hours/Min)
cross                                  (7755),    -- NEW:
when-wet                               (7756),    -- NEW:
oncoming                               (7758),    -- NEW: Typically followed by
                                                  -- object or vehicle types
to-request                             (7760),    -- NEW:  As in to request X do Y
exempt                                 (7761),    -- NEW:
skewed                                 (7762),    -- NEW:
when-children-are-present              (7763),    -- NEW: Use for S4-2
-- Generic Locations
-- Road Related
on-bridges                             (7937),    -- Not to be used as the default
                                                  -- for this category
in-tunnels                             (7938),
entering-or-leaving-tunnels            (7939),
on-ramps                               (7940),
in-road-construction-area              (7941),
around-a-curve                         (7942),
on-curve                               (8026),    -- NEW:
on-tracks                              (8009),    -- NEW:
in-street                              (8025),    -- NEW: As in in-street pad
                                                  -- crossing
shoulder                               (8027),    -- NEW:
on-minor-roads                         (7943),
in-the-opposing-lanes                  (7944),
adjacent-to-roadway                    (7945),
across-tracks                          (8024),    -- NEW:
on-bend                                (7946),
intersection                           (8032),    -- NEW:
entire-intersection                    (7947),
in-the-median                          (7948),
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moved-to-side-of-road              (7949),
moved-to-shoulder                  (7950),
on-the-roadway                     (7951),    -- Use generic locations and
                                              -- groups affected to make other
                                              -- such phrases
dip                                (8010),    -- NEW:
traffic-circle                     (8011),    -- NEW: Used for W2-6 graphic as
                                              -- well. Alt term: roundabout
crossover                          (8028),    -- NEW:
cross-road                         (8029),    -- NEW: Also used for W2-1 Note
                                              -- that in some uses this is one
                                              -- word
side-road                          (8030),    -- NEW: Do not used for W2-2R and
                                              -- W2-2L
to                                 (8014),    -- NEW:
by                                 (8015),    -- NEW:
through                            (8016),    -- NEW:
area-of                            (8017),    -- NEW: Also area
under                              (8018),    -- NEW:
over                               (8019),    -- NEW:
from                               (8020),    -- NEW:
approaching                        (8021),    -- NEW:
entering-at                        (8022),    -- NEW: Alt form: Entrance
exiting-at                         (8023),    -- NEW:
-- Terrain & Geography
in-shaded-areas                    (7952),
in-low-lying-areas                 (7953),
in-the-downtown-area               (7954),
in-the-inner-city-area             (7955),
in-parts                           (7956),
in-some-places                     (7957),
in-the-ditch                       (7958),
in-the-valley                      (7959),
on-hill-top                        (7960),
near-the-foothills                 (7961),
at-high-altitudes                  (7962),
near-the-lake                      (7963),
near-the-shore                     (7964),
nearby-basin                       (8008),
over-the-crest-of-a-hill           (7965),
other-than-on-the-roadway          (7966),
near-the-beach                     (7967),
near-beach-access-point            (7968),
mountain-pass                      (8006),
lower-level                        (7969),
upper-level                        (7970),
-- Transit Travel, Air Travel and Places
airport                            (7971),
concourse                          (7972),
gate                               (7973),
baggage-claim                      (7974),
customs-point                      (7975),
reservation-center                 (8007),
station                            (7976),
platform                           (7977),    -- Alternative Rendering:  track
dock                               (7978),
depot                              (7979),
ev-charging-point                  (7980),
information-welcome-point          (7981),    -- Use for Tourist Information as
                                              -- well (D9-10)
at-rest-area                       (7982),
at-service-area                    (7983),
at-weigh-station                   (7984),
roadside-park                      (8033),    -- NEW:
picnic-areas                       (7985),
rest-area                          (7986),
service-stations                   (7987),
toilets                            (7988),    -- Note also rest rooms in
                                              -- structures
bus-stop                           (8031),    -- NEW:
park-and-ride-lot                  (8012),    -- NEW: Not to be used as a mode
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- 61 -

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                                                    -- of travel
-- Direction of Travel
on-the-right                            (7989),
on-the-left                             (7990),
in-the-center                           (7991),
in-the-opposite-direction               (7992),
cross-traffic                           (7993),
northbound-traffic                      (7994),
eastbound-traffic                       (7995),
southbound-traffic                      (7996),
westbound-traffic                       (7997),
-- Compass Points
north                                   (7998),
south                                   (7999),
east                                    (8000),
west                                    (8001),
northeast                               (8002),
northwest                               (8003),
southeast                               (8004),
southwest                               (8005),
-- Lane / Roadway Descriptions
-- Lanes
all-roadways                            (8193),    -- Used as the default value
through-lanes                           (8194),
left-lane                               (8195),
right-lane                              (8196),
center-lane                             (8197),
middle-lanes                            (8198),
middle-two-lanes                        (8199),
right-turning-lanes                     (8200),
left-turning-lanes                      (8201),
upper-deck-lanes                        (8236),
lower-deck-lanes                        (8237),
reversible-lanes                        (8238),
right-exit-lanes                        (8239),
left-exit-lanes                         (8240),
right-merging-lanes                     (8241),
left-merging-lanes                      (8242),
-- Ramps
right-exit-ramp                         (8202),
right-second-exit-ramp                  (8243),
right-entrance-ramp                     (8203),
right-second-entrance-ramp              (8245),
left-exit-ramp                          (8204),
left-second-exit-ramp                   (8244),
left-entrance-ramp                      (8205),
left-second-entrance-ramp               (8246),
escape-ramp                             (8234),    -- A truck feature on steep
                                                   -- downgrades common in both
                                                   -- Alaska and elsewhere.
-- Shoulders
hard-shoulder                           (8206),
soft-shoulder                           (8207),
right-shoulder                          (8208),
left-shoulder                           (8209),
median                                  (8252),    -- NEW:
sidewalk                                (8251),    -- NEW:
-- Other
highways                                (8235),
right-hand-parallel-lanes               (8210),    -- Alternative Rendering:
                                                   -- right-hand frontage road
left-hand-parallel-lanes                (8211),    -- Alternative Rendering:
                                                   -- left-hand frontage road
connecting-lanes                        (8212),
express-lanes                           (8213),
local-lanes                             (8214),
toll-lanes                              (8215),
electronic-toll-lanes                   (8216),
toll-plaza                              (8217),
inspection-lane                         (8218),    -- Alternative Rendering:  Border
                                                   -- patrol inspection lane
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hOV-lanes                              (8219),    -- Use when 2+ or 3+ is unknown
                                                  -- and for HOV in general
bus-lanes                              (8220),
carpool-lanes                          (8221),
truck-lanes                            (8222),
emergency-lanes                        (8223),
passing-lanes                          (8224),
climbing-lanes                         (8225),
slow-lane                              (8226),    -- Alternative Rendering:
                                                  -- Crawler lane
service-road                           (8227),    -- Alternative Rendering:
                                                  -- Frontage Road
cycle-lane                             (8228),    -- Use for bicycle lanes of all
                                                  -- types
tracks                                 (8250),    -- NEW: Use for light rail and
                                                  -- transit uses, may have count
                                                  -- of tracks
-- Bridges, Tunnels
bridge                                 (8229),
overpass                               (8230),
elevated-lanes                         (8231),
underpass                              (8232),
tunnel                                 (8233),    -- Use for RG-200
-- Lanes Groups
all-exit-lanes                         (8247),    -- NEW:
all-entry-lanes                        (8248),    -- NEW:
either-shoulder                        (8249),    -- NEW:
shoulder-work                          (8253),    -- NEW: Use for W21-5 as well
-- Alternate Route
detour-where-possible                  (8449),
no-detour-available                    (8450),
follow-signs                           (8451),
follow-detour-signs                    (8452),
follow-special-detour-markers          (8453),
do-not-follow-detour-signs             (8454),
detour-in-operation                    (8455),
follow-local-detour                    (8456),
compulsory-detour-in-operation         (8457),
no-suitable-detour-available           (8458),
detour-is-no-longer-recommended        (8459),
local-drivers-are-recommended-to-avoid-the-area (8460),
trucks-are-recommended-to-avoid-the-area (8461),
consider-alternate-route               (8462),
consider-alternate-parking             (8463),
consider-alternate-destination         (8464),
consider-alternate-area                (8465),
-- Specific Route Types
snow-route                             (8466),    -- NEW:
emergency-snow-route                   (8467),    -- NEW:
evacuation-route                       (8468),    -- NEW: May be preceded by a
                                                  -- specific type, Used also for
                                                  -- general emergency routes.
truck-route                            (8469),    -- NEW:
hazardous-materials-route              (8470),    -- NEW: May be used with 'any
                                                  -- time' for allowed, or 'no' for
                                                  -- probibited, or 'detour'
detour                                 (8471),    -- NEW:
-- Unit Values
-- Areas,  Distances  &  Speeds
square-feet                            (8705),
square-meters                          (8706),
acres                                  (8707),
hectares                               (8708),
inches                                 (8709),
feet                                   (8710),
mile                                   (8711),    -- Hint: used for offset as in
                                                  -- "at mile 123"  Alternative
                                                  -- Rendering: milepost marker
miles                                  (8712),    -- Hint: Used for distance, as in
                                                  -- "ending 5 miles"
nautical-miles                         (8713),
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millimeters                         (8714),
meters                              (8715),
kilometer                           (8716),    -- Hint: used for offset as in
                                               -- "at kilometer 123"

kilometers                          (8717),
feet-per-second                     (8718),
meters-per-second                   (8719),
mPH                                 (8720),
kPH                                 (8721),
knots                               (8722),
elevation                           (8766),    -- NEW: Typically followed by
                                               -- value and units
-- Times,  Days  &  Dates
aM                                  (8723),    -- Both a time value and a radio
                                               -- band value.  A number value
                                               -- may PRECEDE the unit value
                                               -- used in representing the
                                               -- frequency of a radio station
pM                                  (8724),
holiday                             (8726),
seconds                             (8727),
minutes                             (8728),
hours                               (8729),
days                                (8730),    -- Hint: useful for events
                                               -- occurring for at least 24
                                               -- hours
weeks                               (8731),
months                              (8732),
other-times                         (8767),    -- NEW: Typically used to
                                               -- represent a "default" allowed
                                               -- condition
-- Days of the Week
xSunday                             (8758),    -- NEW:
xMonday                             (8759),    -- NEW:
xTuesday                            (8760),    -- NEW:
xWednesday                          (8761),    -- NEW:
xThursday                           (8762),    -- NEW:
xFriday                             (8763),    -- NEW:
xSaturday                           (8764),    -- NEW:
weekdays                            (8765),    -- NEW: Alt text: Mon-Fri
weekends                            (8725),    -- In general date/time values
                                               -- can be better coded in other
                                               -- ways in most message sets

-- Temps, Weights, Masses and Measurements
degrees                             (8733),    -- Used for latitude, longitude
                                               -- and bearing measured clockwise
                                               -- from North
degrees-Celsius                     (8734),    -- Alternate renderings possible
degrees-Fahrenheit                  (8735),    -- Alternate renderings possible
grams                               (8736),
kilograms                           (8737),    -- Also called a metric ton
                                               -- (1000kg or ~2204 lbs)
ounces                              (8738),
pounds                              (8739),
tons                                (8740),    -- English Units (2000 lbs = 1
                                               -- ton)
fluid-ounces                        (8741),
gallons                             (8742),
milliliters                         (8743),
liters                              (8744),
kilograms-per-lane-mile             (8745),
tons-per-lane-mile                  (8746),
-- Misc.
dollar                              (8747),    -- Alternative rendering: dollar
                                               -- symbol  Not to be used as the
                                               -- default value for this
                                               -- category
percent                             (8748),    -- Alternative rendering: percent
                                               -- symbol
grade                               (8757),    -- NEW: Typically preceded by a
                                               -- percent value entry
```

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time-delimiter                         (8749),    -- Alternative rendering: "-"
dollars                                (8750),    -- Alternative rendering can use
                                                  -- local currency sign
flight-number                          (8751),    -- A number value may PRECEDE the
                                                  -- unit value in use
person-people                          (8752),
response-plan                          (8753),    -- A value may PRECEDE the unit
                                                  -- value in use (involving a
                                                  -- combination of numbers and /
                                                  -- or letters)
placard-type                           (8754),    -- For hazmat class and division
                                                  -- type designations, a value may
                                                  -- PRECEDE the unit value in use
placard-number                         (8755),    -- For chemical designations, a
                                                  -- value may PRECEDE the unit
                                                  -- value in use
fM                                     (8756),    -- A number value may PRECEDE the
                                                  -- unit value in use representing
                                                  -- the frequency of a radio
                                                  -- station

-- Transit Mode
travel                                 (8961),    -- Hint: may include all modes
transit                                (8962),    -- Hint: may include all public
                                                  -- transit modes
bus                                    (8963),
trolleybus                             (8964),
rail                                   (8965),
commuter-rail                          (8966),
subway                                 (8967),
rapid-transit                          (8968),
light-rail                             (8969),
streetcar                              (8970),    -- Alternative Rendering:  tram
dial-a-ride                            (8971),    -- Alternative Rendering:  demand
                                                  -- responsive transit
park-and-ride                          (8972),    -- Not to be used as a place
shuttle                                (8973),
free-shuttle                           (8974),    -- Alternative Rendering:  tram
airport-shuttle                        (8975),
taxies                                 (8976),
ferry                                  (8977),
passenger-ferry                        (8978),
vehicle-ferry                          (8979),
aerial-tramway                         (8980),
automated-guideway                     (8981),    -- Include all types of guideways
cable-cars                             (8982),
monorail                               (8983),
air-travel                             (8984),    -- All modes of air travel
hitch-hitching                         (8985),    -- NEW:
walk                                   (8986),    -- NEW:  Alt form: Walking
-- Vehicle Groups Affected
all-vehicles                           (9217),
bicycles                               (9218),
motorcycles                            (9219),    -- to include mopeds as well
cars                                   (9220),    -- (remapped from ERM value of
                                                  -- zero)
light-vehicles                         (9221),
cars-and-light-vehicles                (9222),
cars-with-trailers                     (9223),
cars-with-recreational-trailers        (9224),
vehicles-with-trailers                 (9225),
heavy-vehicles                         (9226),
trucks                                 (9227),    -- Use for RG-190
buses                                  (9228),
articulated-buses                      (9229),
school-buses                           (9230),
vehicles-with-semi-trailers            (9231),
vehicles-with-double-trailers          (9232),    -- Alternative Rendering:
                                                  -- western doubles
high-profile-vehicles                  (9233),
wide-vehicles                          (9234),
long-vehicles                          (9235),
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hazardous-loads                               (9236),
exceptional-loads                             (9237),
abnormal-loads                                (9238),
convoys                                       (9239),
maintenance-vehicles                          (9240),
delivery-vehicles                             (9241),
vehicles-with-even-numbered-license-plates    (9242),
vehicles-with-odd-numbered-license-plates     (9243),
vehicles-with-parking-permits                 (9244),
vehicles-with-catalytic-converters            (9245),
vehicles-without-catalytic-converters         (9246),
gas-powered-vehicles                          (9247),
diesel-powered-vehicles                       (9248),
lPG-vehicles                                  (9249),
military-convoys                              (9250),
military-vehicles                             (9251),
electric-powered-vehicles                     (9252),    -- NEW:
hybrid-powered-vehicles                       (9253),    -- NEW:
inherently-low-emisson-vehicles               (9254),    -- NEW:
commerical-vehicles                           (9255),    -- NEW:
runaway-vehicles                              (9256),    -- NEW:
vehicles-with-lugs                            (9257),    -- NEW:
motor-driven-cycles                           (9258),    -- NEW:
recreational-vehicles                         (9259),    -- NEW:   Use for RVs
non-motorized-vehicles                        (9260),    -- NEW:
traffic                                       (9261),    -- NEW: Refers to all types of
                                                         -- motor traffic, all groups
-- Traveler Group Affected
through-traffic                               (9473),
holiday-traffic                               (9474),
residents                                     (9475),
visitors                                      (9476),
long-distance-traffic                         (9477),
local-traffic                                 (9478),
regional-traffic                              (9479),
arrivals                                      (9480),
departures                                    (9481),
airline-travelers                             (9482),
commuter-airline-travelers                    (9483),
domestic-airline-travelers                    (9484),
international-airline-travelers               (9485),
pedestrians                                   (9486),
bicyclists                                    (9487),    -- Hint: may be used as a
                                                         -- traveler restriction, as in
                                                         -- "bicycles prohibited on
                                                         -- subways during rush hour" or
                                                         -- "road closed to bicyclists"

-- Responder Group Affected
emergency-vehicle-units                       (9729),    -- Default phrase, to be used
                                                         -- when one of the below does not
                                                         -- fit better
federal-law-enforcement-units                 (9730),
state-police-units                            (9731),
county-police-units                           (9732),    -- Hint: also sheriff response
                                                         -- units
local-police-units                            (9733),
ambulance-units                               (9734),
rescue-units                                  (9735),
fire-units                                    (9736),
hAZMAT-units                                  (9737),    -- Any vehcile assigned to HAZMAT
                                                         -- duties
light-tow-unit                                (9738),
heavy-tow-unit                                (9739),
private-tow-units                             (9743),    -- NEW: For 3rd Party tow trucks
freeway-service-patrols                       (9740),
transportation-response-units                 (9741),
private-contractor-response-units             (9742),
-- Incident Response Equipment
ground-fire-suppression                       (9985),
heavy-ground-equipment                        (9986),
aircraft                                      (9988),
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marine-equipment                        (9989),
support-equipment                       (9990),
medical-rescue-unit                     (9991),
other                                   (9993),   -- Depreciated by fire standards,
                                                  -- do not use

ground-fire-suppression-other           (9994),
engine                                  (9995),
truck-or-aerial                         (9996),
quint                                   (9997),   -- A five-function type of fire
                                                  -- apparatus.  The units in the
                                                  -- movie Backdraft were quints

tanker-pumper-combination               (9998),
brush-truck                             (10000),
aircraft-rescue-firefighting            (10001),
heavy-ground-equipment-other            (10004),
dozer-or-plow                           (10005),
tractor                                 (10006),
tanker-or-tender                        (10008),
aircraft-other                          (10024),
aircraft-fixed-wing-tanker              (10025),
helitanker                              (10026),
helicopter                              (10027),
marine-equipment-other                  (10034),
fire-boat-with-pump                     (10035),
boat-no-pump                            (10036),
support-apparatus-other                 (10044),
breathing-apparatus-support             (10045),
light-and-air-unit                      (10046),
medical-rescue-unit-other               (10054),
rescue-unit                             (10055),
urban-search-rescue-unit                (10056),
high-angle-rescue                       (10057),
crash-fire-rescue                       (10058),
bLS-unit                                (10059),
aLS-unit                                (10060),
mobile-command-post                     (10075),   -- Depreciated, do not use
chief-officer-car                       (10076),
hAZMAT-unit                             (10077),
type-i-hand-crew                        (10078),
type-ii-hand-crew                       (10079),
privately-owned-vehicle                 (10083),   -- (Often found in volunteer fire
                                                   -- teams)
other-apparatus-resource                (10084),   -- (Remapped from fire code zero)
ambulance                               (10085),
bomb-squad-van                          (10086),
combine-harvester                       (10087),
construction-vehicle                    (10088),
farm-tractor                            (10089),
grass-cutting-machines                  (10090),
hAZMAT-containment-tow                  (10091),
heavy-tow                               (10092),
light-tow                               (10094),
flatbed-tow                             (10114),
hedge-cutting-machines                  (10093),
mobile-crane                            (10095),
refuse-collection-vehicle               (10096),
resurfacing-vehicle                     (10097),
road-sweeper                            (10098),
roadside-litter-collection-crews        (10099),
survey-crews                            (10115),   -- NEW:
salvage-vehicle                         (10100),
sand-truck                              (10101),
snowplow                                (10102),
steam-roller                            (10103),
swat-team-van                           (10104),
track-laying-vehicle                    (10105),
unknown-vehicle                         (10106),
white-lining-vehicle                    (10107),   -- Consider using Roadwork "road
                                                   -- marking operations" unless the
                                                   -- objective is to refer to the
                                                   -- specific vehicle of this type.
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                                                       -- Alternative Rendering: line
                                                       -- painting vehicle
dump-truck                                 (10108),
supervisor-vehicle                         (10109),
snow-blower                                (10110),
rotary-snow-blower                         (10111),
road-grader                                (10112),  -- Alternative term: motor grader
steam-truck                                (10113),  -- A special truck that thaws
                                                       -- culverts and storm drains

-- Asset Status
unknown-status                             (10240),  -- Used when status is not known
ready-for-use                              (10241),
working-normally                           (10242),
working-autonomously                       (10243),
working-incorrectly                        (10244),
not-working                                (10245),
normal-maintenance                         (10246),
in-route-to-use                            (10247),
returning-from-use                         (10248),
out-of-service                             (10249),
off-duty                                   (10250),
on-patrol                                  (10251),
on-call                                    (10252),
on-break                                   (10253),
mandatory-time-off                         (10254),
low-on-fuel                                (10255),
low-on-water                               (10256),
low-charge                                 (10257),
missing                                    (10258),  -- Use "sign down" in device
                                                       -- status if an object is damaged
                                                       -- (or use "damaged") and could
                                                       -- be returned to service, use
                                                       -- "missing" only if an object is
                                                       -- in fact missing

-- Roadside Assets
-- Inanimate Objects
none                                       (10496),  -- Implies free text follows
light-pole                                 (10497),
utiltity-pole                              (10498),
gantry-way                                 (10499),
sign-support                               (10500),  -- All forms of signage
signal-pole                                (10501),
signage-public                             (10502),
signage-private                            (10503),
overhead-sign                              (10568),
ground-sign                                (10569),
cones                                      (10504),  -- Typical std height cones as
                                                       -- per MUTCD
cones-post-type                            (10505),  -- Also called channelizer cones
                                                       -- or delineator posts
cones-glue-post                            (10506),  -- For all glue-down types
cones-other                                (10507),  -- Specialty types or misc.
                                                       -- smaller cones
barriers                                   (10508),
barrier-Aframe                             (10509),  -- Sizes larger than 1.5 meters
                                                       -- in length
barriers-heavy-duty                        (10510),  -- All types requiring equipment
                                                       -- to place
barricade-type-III                         (10511),  -- All collapsible Type III
                                                       -- Barricades
barricade-small                            (10512),  -- Type I and all small A frame
                                                       -- types, also so-called "mini"
                                                       -- or "narrows" types
solid-barrier                              (10565),
moveable-barrier                           (10566),
barricade-lights                           (10513),  -- Std 7" light as per ITE stds
beacon                                     (10514),  -- All types of strobe and
                                                       -- rotating lights
t-stand                                    (10515),
a-stand                                    (10516),
drums                                      (10517),  -- Common drums and barrel types
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sand-barrel                        (10567),
impact-attenuator                  (10518),   -- Water-filled and other
                                              -- crushable types
barricade-tape                     (10519),   -- Lettering type (legend) to be
                                              -- conveyed elsewhere
safety-fence                       (10520),
temp-pavement-markings             (10521),   -- All forms of temp markings
speed-bumps                        (10522),   -- Use also for speed humps
temp-curbs                         (10523),
parking-blocks                     (10524),
signboard-fixed                    (10525),
signboard-portable                 (10526),
stripe                             (10572),   -- NEW:
island                             (10573),   -- NEW: Used for raised islands
                                              -- in median
-- Controllable or Active Objects
har                                (10527),   -- Transmission type not known
har-AM                             (10528),
har-FM                             (10529),
har-DSRC                           (10530),
traffic-light                      (10531),   -- Also used for signalized
                                              -- intersections
lane-control-signal                (10532),
traffic-detector                   (10533),
vehicle-detector                   (10534),
system-alarm                       (10535),
arrow-board                        (10536),
fixed-VMS                          (10537),
mobile-VMS                         (10538),
ramp-control                       (10539),
gate-control                       (10540),   -- Other than rail types
temporary-traffic-light            (10541),
over-height-warning-system         (10542),
over-weight-warning-system         (10543),
emergency-telephones               (10544),
railroad-crossing-equipment        (10545),
tunnel-ventilation                 (10546),   -- Use also for fans
ccTV                               (10547),
environmental-sensor               (10548),
emergency-signal                   (10570),   -- NEW:
countdown-pedestrian-sign          (10571),   -- NEW:
-- Items Used by Rail and Transit
switch                             (10549),   -- In the context of a railroad
                                              -- device
signal                             (10550),   -- In the context of a railroad
                                              -- device
third-rail                         (10551),
overhead-power                     (10552),   -- Specifically the power feed
                                              -- line for a vehicle, do not use
                                              -- for general power lines
concrete-tie                       (10553),
wooden-tie                         (10554),
manhole-cover                      (10559),
-- Misc. Items
culvert                            (10560),
escalator                          (10555),
elevator                           (10556),
snow-poles                         (10561),   -- A tall pole and overhanging
                                              -- arm (like a luminaire) with
                                              -- reflective markers to help
                                              -- indicate roadway in mountain
                                              -- passes during whiteout
                                              -- conditions
track                              (10557),
guide-poles                        (10562),   -- Poles along road to indicate
                                              -- guard rail in deep snow
drawbridge                         (10558),
expansion-joint                    (10563),
shifted-plate                      (10564),
-- Transit Operations
unknown-transit-problem            (10753),
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sleeping-customer                          (10754),
assault-on-passenger                       (10755),
assault-on-employee                        (10756),
broken-seat                                (10757),
bus-alarm                                  (10758),
crime-or-drug-deal                         (10759),
eating-on-board                            (10760),
equipment-problem-with-air-conditioning    (10761),
equipment-problem-with-air-system          (10762),
equipment-problem-with-brakes              (10763),
equipment-problem-with-chassis-or-suspension (10764),
equipment-problem-with-cooling-system      (10765),
equipment-problem-with-doors               (10766),
equipment-problem-with-electrical          (10767),
equipment-problem-with-engine              (10768),
equipment-problem-with-exterior-or-body    (10769),
equipment-problem-with-fare-collection     (10770),
equipment-problem-with-fuel-or-exhaust     (10771),
equipment-problem-with-horn                (10772),
equipment-problem-with-interior            (10773),
equipment-problem-with-liftkneeling        (10774),
equipment-problem-with-lights              (10775),
equipment-problem-with-lubrication         (10776),
equipment-problem-with-radio-or-communication (10777),
equipment-problem-with-signs               (10778),
equipment-problem-with-steering            (10779),
equipment-problem-with-tires               (10780),
equipment-problem-with-transmission        (10781),
equipment-problem-with-unknown-alarm       (10782),
equipment-problem-with-wipers              (10783),
fare-dispute-expired-pass                  (10784),
fare-dispute-expired-transfer              (10785),
fare-dispute-expired-upgrade               (10786),
fare-dispute-other                         (10787),
fare-dispute-refuses-to-pay                (10788),
lift-passenger-cycle-completed             (10789),
lift-passenger-ready-to-alight             (10790),
lift-passenger-ready-to-board              (10791),
lost-article                               (10792),
objects-thrown                             (10793),
passenger-accident-alighting               (10794),
passenger-accident-boarding                (10795),
passenger-accident-fallen-on-board         (10796),
passenger-load                             (10797),
passenger-accident-other                   (10798),
passenger-sick-or-injured                  (10799),
right-of-way                               (10800),
theft                                      (10801),
theft-of-service                           (10802),
waiting-to-get-relief-for-schedule-break   (10803),
waiting-to-get-relief-after-run-is-finished (10804),
waiting-to-provide-relief                  (10805),
-- Objects
-- Misc Items
unknown-object                             (11009),
tire                                       (11010),
rim                                        (11011),
retread                                    (11012),
trash                                      (11013),  -- Consider using the
                                                     -- CleanUpItems of IEEE 1512 for
                                                     -- operational needs
cargo                                      (11014),
diesel                                     (11015),
gasoline                                   (11016),  -- RM-060
anti-freeze                                (11017),
propane-gas                                (11061), -- NEW:
alternative-fuel                           (11060), -- NEW: (Implies CNG)
seat-belts                                 (11018), -- NEW:
litter-container                           (11019), -- NEW: RG-130  Alt term: Trash
                                                    -- Container
all-Terrain-vehicle                        (11020), -- NEW: Rl-170
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seaplane                                  (11021),   -- NEW: RG-260
chairlift                                 (11022),   -- NEW: RS-100
fishing-pier                              (11023),   -- NEW: RW-160
telephone                                 (11025),   -- NEW: RM-150 See also
                                                     -- Emergency-Telephones 10544
railroad-cross-buck                       (11024),   -- NEW:  (Used for Railroad
                                                     -- crossings)
horn                                      (11048),   -- NEW:
train                                     (11047),   -- NEW: The train itself
                                                     -- regardless of the type (not
                                                     -- the mode of transit)
deer                                      (11049),   -- NEW: W11-3
horse                                     (11051),   -- NEW: Use for equestrian as
                                                     -- well
cattle                                    (11050),   -- NEW: W11-4
golf-cart                                 (11052),   -- NEW: W11-10
services                                  (11056),   -- NEW:
motorist-services                         (11059),   -- NEW:  Alt text motor services
                                                     -- D9-18
food-services                             (11053),   -- NEW:
roadside-table                            (11055),   -- NEW:
ambulance-staging-point                   (11054),   -- NEW: Use for ambulance station
                                                     -- as well
-- Shelters-Structures
fallout                                   (11026),   -- NEW: a type of shelter or
                                                     -- structure
medical                                   (11027),   -- NEW: a type of shelter or
                                                     -- structure
chemical                                  (11028),   -- NEW: a type of shelter or
                                                     -- structure
welfare                                   (11029),   -- NEW: a type of shelter or
                                                     -- structure
decontamination                           (11063),   -- NEW:
evacuation                                (11030),   -- NEW: a type of shelter or
                                                     -- structure
registration                              (11062),   -- NEW: a type of shelter or
                                                     -- structure
emergency                                 (11064),   -- NEW:Use only when no other
                                                     -- type is known
-- Signal States
left-arrow-signal                         (11031),   -- NEW:
ahead-arrow-signal                        (11032),   -- NEW:
right-arrow-signal                        (11033),   -- NEW:
green-light-signal                        (11034),   -- NEW:
green-arrow-signal                        (11035),   -- NEW:
yellow-light-signal                       (11036),   -- NEW:
yellow-arrow-signal                       (11037),   -- NEW:
red-light-signal                          (11038),   -- NEW:
red-arrow-signal                          (11039),   -- NEW:
extended-green-signal                     (11040),   -- NEW:
advance-arrow-signal                      (11041),   -- NEW:
pedestrian-Signal-Stop                    (11042),   -- NEW: Used for don't walk sign
pedestrian-Signal-Caution                 (11043),   -- NEW: Used for don't start to
                                                     -- walk
pedestrian-Signal-Walk                    (11044),   -- NEW:
pedestrian-Signal-Light                   (11045),   -- NEW: Use for light itself
                                                     -- (regardless of state)
pedestrian-Signal-Time-Display            (11046),   -- NEW: Use for count down timer
                                                     -- display
-- Valid Maneuvers
prohibit-None-Allowed-LU-LT-L45-S-R45-RT-RU (11264),  -- NEW:
prohibit-RU-Allowed-LU-LT-L45-S-R45-RT    (11265),   -- NEW: All Maneuvers allowed
prohibit-RT-Allowed-LU-LT-L45-S-R45-RU    (11266),   -- NEW:
prohibit-RT-RU-Allowed-LU-LT-L45-S-R45    (11267),   -- NEW:
prohibit-R45-Allowed-LU-LT-L45-S-RT-RU    (11268),   -- NEW:
prohibit-R45-RU-Allowed-LU-LT-L45-S-RT    (11269),   -- NEW:
prohibit-R45-RT-Allowed-LU-LT-L45-S-RU    (11270),   -- NEW:
prohibit-R45-RT-RU-Allowed-LU-LT-L45-S    (11271),   -- NEW: Left or Straight Only
                                                     -- (R3-6), Right Turn prohibited
prohibit-S-Allowed-LU-LT-L45-R45-RT-RU    (11272),   -- NEW:
prohibit-S-RU-Allowed-LU-LT-L45-R45-RT    (11273),   -- NEW:
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- 71 -

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prohibit-S-RT-Allowed-LU-LT-L45-R45-RU        (11274),   -- NEW:
prohibit-S-RT-RU-Allowed-LU-LT-L45-R45        (11275),   -- NEW:
prohibit-S-R45-Allowed-LU-LT-L45-RT-RU        (11276),   -- NEW:
prohibit-S-R45-RU-Allowed-LU-LT-L45-RT        (11277),   -- NEW:
prohibit-S-R45-RT-Allowed-LU-LT-L45-RU        (11278),   -- NEW:
prohibit-S-R45-RT-RU-Allowed-LU-LT-L45        (11279),   -- NEW:
prohibit-L45-Allowed-LU-LT-S-R45-RT-RU        (11280),   -- NEW: Left 45 deg turn
                                                         -- prohibited
prohibit-L45-RU-Allowed-LU-LT-S-R45-RT        (11281),   -- NEW:
prohibit-L45-RT-Allowed-LU-LT-S-R45-RU        (11282),   -- NEW:
prohibit-L45-RT-RU-Allowed-LU-LT-S-R45        (11283),   -- NEW:
prohibit-L45-R45-Allowed-LU-LT-S-RT-RU        (11284),   -- NEW:
prohibit-L45-R45-RU-Allowed-LU-LT-S-RT        (11285),   -- NEW:
prohibit-L45-R45-RT-Allowed-LU-LT-S-RU        (11286),   -- NEW:
prohibit-L45-R45-RT-RU-Allowed-LU-LT-S        (11287),   -- NEW:
prohibit-L45-S-Allowed-LU-LT-R45-RT-RU        (11288),   -- NEW:
prohibit-L45-S-RU-Allowed-LU-LT-R45-RT        (11289),   -- NEW:
prohibit-L45-S-RT-Allowed-LU-LT-R45-RU        (11290),   -- NEW:
prohibit-L45-S-RT-RU-Allowed-LU-LT-R45        (11291),   -- NEW:
prohibit-L45-S-R45-Allowed-LU-LT-RT-RU        (11292),   -- NEW:
prohibit-L45-S-R45-RU-Allowed-LU-LT-RT        (11293),   -- NEW:
prohibit-L45-S-R45-RT-Allowed-LU-LT-RU        (11294),   -- NEW:
prohibit-L45-S-R45-RT-RU-Allowed-LU-LT        (11295),   -- NEW: Left U-Turn and Left Turn
                                                         -- Allowed
prohibit-LT-Allowed-LU-L45-S-R45-RT-RU        (11296),   -- NEW: Left Turn Prohibited
                                                         -- (R3-2)
prohibit-LT-RU-Allowed-LU-L45-S-R45-RT        (11297),   -- NEW:
prohibit-LT-RT-Allowed-LU-L45-S-R45-RU        (11298),   -- NEW: Left and Right Turn
                                                         -- Prohibited  (R3-3), Straight
                                                         -- Only
prohibit-LT-RT-RU-Allowed-LU-L45-S-R45        (11299),   -- NEW:
prohibit-LT-R45-Allowed-LU-L45-S-RT-RU        (11300),   -- NEW:
prohibit-LT-R45-RU-Allowed-LU-L45-S-RT        (11301),   -- NEW:
prohibit-LT-R45-RT-Allowed-LU-L45-S-RU        (11302),   -- NEW:
prohibit-LT-R45-RT-RU-Allowed-LU-L45-S        (11303),   -- NEW:
prohibit-LT-S-Allowed-LU-L45-R45-RT-RU        (11304),   -- NEW: Straight Ahead Prohibited
prohibit-LT-S-RU-Allowed-LU-L45-R45-RT        (11305),   -- NEW:
prohibit-LT-S-RT-Allowed-LU-L45-R45-RU        (11306),   -- NEW:
prohibit-LT-S-RT-RU-Allowed-LU-L45-R45        (11307),   -- NEW:
prohibit-LT-S-R45-Allowed-LU-L45-RT-RU        (11308),   -- NEW:
prohibit-LT-S-R45-RU-Allowed-LU-L45-RT        (11309),   -- NEW:
prohibit-LT-S-R45-RT-Allowed-LU-L45-RU        (11310),   -- NEW:
prohibit-LT-S-R45-RT-RU-Allowed-LU-L45        (11311),   -- NEW:
prohibit-LT-L45-Allowed-LU-S-R45-RT-RU        (11312),   -- NEW:
prohibit-LT-L45-RU-Allowed-LU-S-R45-RT        (11313),   -- NEW:
prohibit-LT-L45-RT-Allowed-LU-S-R45-RU        (11314),   -- NEW:
prohibit-LT-L45-RT-RU-Allowed-LU-S-R45        (11315),   -- NEW:
prohibit-LT-L45-R45-Allowed-LU-S-RT-RU        (11316),   -- NEW:
prohibit-LT-L45-R45-RU-Allowed-LU-S-RT        (11317),   -- NEW:
prohibit-LT-L45-R45-RT-Allowed-LU-S-RU        (11318),   -- NEW:
prohibit-LT-L45-R45-RT-RU-Allowed-LU-S        (11319),   -- NEW:
prohibit-LT-L45-S-Allowed-LU-R45-RT-RU        (11320),   -- NEW:
prohibit-LT-L45-S-RU-Allowed-LU-R45-RT        (11321),   -- NEW:
prohibit-LT-L45-S-RT-Allowed-LU-R45-RU        (11322),   -- NEW:
prohibit-LT-L45-S-RT-RU-Allowed-LU-R45        (11323),   -- NEW:
prohibit-LT-L45-S-R45-Allowed-LU-RT-RU        (11324),   -- NEW:
prohibit-LT-L45-S-R45-RU-Allowed-LU-RT        (11325),   -- NEW:
prohibit-LT-L45-S-R45-RT-Allowed-LU-RU        (11326),   -- NEW:
prohibit-LT-L45-S-R45-RT-RU-Allowed-LU        (11327),   -- NEW: Left U-Turn Allowed
prohibit-LU-Allowed-LT-L45-S-R45-RT-RU        (11328),   -- NEW: Left U-Turn Prohibited
                                                         -- (R3-4)
prohibit-LU-RU-Allowed-LT-L45-S-R45-RT        (11329),   -- NEW:
prohibit-LU-RT-Allowed-LT-L45-S-R45-RU        (11330),   -- NEW:
prohibit-LU-RT-RU-Allowed-LT-L45-S-R45        (11331),   -- NEW:
prohibit-LU-R45-Allowed-LT-L45-S-RT-RU        (11332),   -- NEW:
prohibit-LU-R45-RU-Allowed-LT-L45-S-RT        (11333),   -- NEW:
prohibit-LU-R45-RT-Allowed-LT-L45-S-RU        (11334),   -- NEW:
prohibit-LU-R45-RT-RU-Allowed-LT-L45-S        (11335),   -- NEW:
prohibit-LU-S-Allowed-LT-L45-R45-RT-RU        (11336),   -- NEW:
prohibit-LU-S-RU-Allowed-LT-L45-R45-RT        (11337),   -- NEW:
prohibit-LU-S-RT-Allowed-LT-L45-R45-RU        (11338),   -- NEW:
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prohibit-LU-S-RT-RU-Allowed-LT-L45-R45          (11339),   -- NEW:
prohibit-LU-S-R45-Allowed-LT-L45-RT-RU          (11340),   -- NEW:
prohibit-LU-S-R45-RU-Allowed-LT-L45-RT          (11341),   -- NEW:
prohibit-LU-S-R45-RT-Allowed-LT-L45-RU          (11342),   -- NEW:
prohibit-LU-S-R45-RT-RU-Allowed-LT-L45          (11343),   -- NEW:
prohibit-LU-L45-Allowed-LT-S-R45-RT-RU          (11344),   -- NEW:
prohibit-LU-L45-RU-Allowed-LT-S-R45-RT          (11345),   -- NEW:
prohibit-LU-L45-RT-Allowed-LT-S-R45-RU          (11346),   -- NEW:
prohibit-LU-L45-RT-RU-Allowed-LT-S-R45          (11347),   -- NEW:
prohibit-LU-L45-R45-Allowed-LT-S-RT-RU          (11348),   -- NEW:
prohibit-LU-L45-R45-RU-Allowed-LT-S-RT          (11349),   -- NEW:
prohibit-LU-L45-R45-RT-Allowed-LT-S-RU          (11350),   -- NEW:
prohibit-LU-L45-R45-RT-RU-Allowed-LT-S          (11351),   -- NEW: Left Turn and Straight
                                                           -- Ahead Only
prohibit-LU-L45-S-Allowed-LT-R45-RT-RU          (11352),   -- NEW:
prohibit-LU-L45-S-RU-Allowed-LT-R45-RT          (11353),   -- NEW:
prohibit-LU-L45-S-RT-Allowed-LT-R45-RU          (11354),   -- NEW:
prohibit-LU-L45-S-RT-RU-Allowed-LT-R45          (11355),   -- NEW:
prohibit-LU-L45-S-R45-Allowed-LT-RT-RU          (11356),   -- NEW:
prohibit-LU-L45-S-R45-RU-Allowed-LT-RT          (11357),   -- NEW: Left Turn and Right Turn
                                                           -- Only
prohibit-LU-L45-S-R45-RT-Allowed-LT-RU          (11358),   -- NEW:
prohibit-LU-L45-S-R45-RT-RU-Allowed-LT          (11359),   -- NEW: Left Turn Only   (R3-5)
prohibit-LU-LT-Allowed-L45-S-R45-RT-RU          (11360),   -- NEW: Left U-Turn and Left Turn
                                                           -- Prohibited   (R3-18)
prohibit-LU-LT-RU-Allowed-L45-S-R45-RT          (11361),   -- NEW:
prohibit-LU-LT-RT-Allowed-L45-S-R45-RU          (11362),   -- NEW:
prohibit-LU-LT-RT-RU-Allowed-L45-S-R45          (11363),   -- NEW:
prohibit-LU-LT-R45-Allowed-L45-S-RT-RU          (11364),   -- NEW:
prohibit-LU-LT-R45-RU-Allowed-L45-S-RT          (11365),   -- NEW:
prohibit-LU-LT-R45-RT-Allowed-L45-S-RU          (11366),   -- NEW:
prohibit-LU-LT-R45-RT-RU-Allowed-L45-S          (11367),   -- NEW:
prohibit-LU-LT-S-Allowed-L45-R45-RT-RU          (11368),   -- NEW:
prohibit-LU-LT-S-RU-Allowed-L45-R45-RT          (11369),   -- NEW:
prohibit-LU-LT-S-RT-Allowed-L45-R45-RU          (11370),   -- NEW:
prohibit-LU-LT-S-RT-RU-Allowed-L45-R45          (11371),   -- NEW:
prohibit-LU-LT-S-R45-Allowed-L45-RT-RU          (11372),   -- NEW:
prohibit-LU-LT-S-R45-RU-Allowed-L45-RT          (11373),   -- NEW:
prohibit-LU-LT-S-R45-RT-Allowed-L45-RU          (11374),   -- NEW:
prohibit-LU-LT-S-R45-RT-RU-Allowed-L45          (11375),   -- NEW:
prohibit-LU-LT-L45-Allowed-S-R45-RT-RU          (11376),   -- NEW: Right Turn or Straight
                                                           -- Only
prohibit-LU-LT-L45-RU-Allowed-S-R45-RT          (11377),   -- NEW:
prohibit-LU-LT-L45-RT-Allowed-S-R45-RU          (11378),   -- NEW:
prohibit-LU-LT-L45-RT-RU-Allowed-S-R45          (11379),   -- NEW:
prohibit-LU-LT-L45-R45-Allowed-S-RT-RU          (11380),   -- NEW:
prohibit-LU-LT-L45-R45-RU-Allowed-S-RT          (11381),   -- NEW:
prohibit-LU-LT-L45-R45-RT-Allowed-S-RU          (11382),   -- NEW:
prohibit-LU-LT-L45-R45-RT-RU-Allowed-S          (11383),   -- NEW: Straight Ahead Only
                                                           -- (R3-5a)
prohibit-LU-LT-L45-S-Allowed-R45-RT-RU          (11384),   -- NEW:
prohibit-LU-LT-L45-S-RU-Allowed-R45-RT          (11385),   -- NEW:
prohibit-LU-LT-L45-S-RT-Allowed-R45-RU          (11386),   -- NEW:
prohibit-LU-LT-L45-S-RT-RU-Allowed-R45          (11387),   -- NEW:
prohibit-LU-LT-L45-S-R45-Allowed-RT-RU          (11388),   -- NEW:
prohibit-LU-LT-L45-S-R45-RU-Allowed-RT          (11389),   -- NEW: Right Turn Only
prohibit-LU-LT-L45-S-R45-RT-Allowed-RU          (11390),   -- NEW:
prohibit-LU-LT-L45-S-R45-RT-RU-Allowed-None (11391),   -- NEW: All Maneuvers are
                                                           -- Prohibited
-- Large Numbers
n1-16th                                         (11521),   -- NEW: The fraction 1/16th
n1-10th                                         (11522),   -- NEW: The fraction 1/10th
n1-8th                                          (11523),   -- NEW: The fraction 1/8th
n1-4th                                          (11524),   -- NEW: The fraction 1/4th
n1-3rd                                          (11525),   -- NEW: The fraction 1/3rd
n1-2                                            (11526),   -- NEW: The fraction 1/2
n3-4                                            (11527),   -- NEW: The fraction 3/4th
n300                                            (11531),   -- NEW:
n350                                            (11532),   -- NEW:
n400                                            (11533),   -- NEW:
n450                                            (11534),   -- NEW:
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n500	(11535),	--	NEW:
n550	(11536),	--	NEW:
n600	(11537),	--	NEW:
n650	(11538),	--	NEW:
n700	(11539),	--	NEW:
n750	(11540),	--	NEW:
n800	(11541),	--	NEW:
n850	(11542),	--	NEW:
n900	(11543),	--	NEW:
n950	(11544),	--	NEW:
n1000	(11545),	--	NEW:
n1100	(11546),	--	NEW:
n1200	(11547),	--	NEW:
n1300	(11548),	--	NEW:
n1400	(11549),	--	NEW:
n1500	(11550),	--	NEW:
n1600	(11551),	--	NEW:
n1700	(11552),	--	NEW:
n1800	(11553),	--	NEW:
n1900	(11554),	--	NEW:
n2000	(11555),	--	NEW:
n2100	(11556),	--	NEW:
n2200	(11557),	--	NEW:
n2300	(11558),	--	NEW:
n2400	(11559),	--	NEW:
n2500	(11560),	--	NEW:
n2600	(11561),	--	NEW:
n2700	(11562),	--	NEW:
n2800	(11563),	--	NEW:
n2900	(11564),	--	NEW:
n3000	(11565),	--	NEW:
n3500	(11566),	--	NEW:
n4000	(11567),	--	NEW:
n4500	(11568),	--	NEW:
n5000	(11569),	--	NEW:
n5500	(11570),	--	NEW:
n6000	(11571),	--	NEW:
n6500	(11572),	--	NEW:
n7000	(11573),	--	NEW:
n7500	(11574),	--	NEW:
n8000	(11575),	--	NEW:
n8500	(11576),	--	NEW:
n9000	(11577),	--	NEW:
n9500	(11578),	--	NEW:
n10000	(11579),	--	NEW:
n11000	(11580),	--	NEW:
n12000	(11581),	--	NEW:
n13000	(11582),	--	NEW:
n14000	(11583),	--	NEW:
n15000	(11584),	--	NEW:
n16000	(11585),	--	NEW:
n17000	(11586),	--	NEW:
n18000	(11587),	--	NEW:
n19000	(11588),	--	NEW:
n20000	(11589),	--	NEW:
n21000	(11590),	--	NEW:
n22000	(11591),	--	NEW:
n23000	(11592),	--	NEW:
n24000	(11593),	--	NEW:
n25000	(11594),	--	NEW:
n26000	(11595),	--	NEW:
n27000	(11596),	--	NEW:
n28000	(11597),	--	NEW:
n29000	(11598),	--	NEW:
n30000	(11599),	--	NEW:
n35000	(11600),	--	NEW:
n40000	(11601),	--	NEW:
n45000	(11602),	--	NEW:
n50000	(11603),	--	NEW:
n55000	(11604),	--	NEW:
n60000	(11605),	--	NEW:

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n65000                              (11606),  -- NEW:
n70000                              (11607),  -- NEW:
n75000                              (11608),  -- NEW:
n80000                              (11609),  -- NEW:
n85000                              (11610),  -- NEW:
n90000                              (11611),  -- NEW:
n95000                              (11612),  -- NEW:
n100000                             (11613),  -- NEW:
-- Named Objects
name-follows                        (11777),  -- NEW: Used for other types of
                                              -- named objects to delimit name
freeway                             (11778),  -- NEW: Typically followed by
                                              -- name
us-Route                            (11779),  -- NEW: Typically followed by
                                              -- name, M1-4
state-Route                         (11780),  -- NEW: Typically followed by
                                              -- name, M1-5
interstate                          (11781),  -- NEW: Typically followed by
                                              -- name, M1-1
business-Loop                       (11782),  -- NEW: Typically followed by
                                              -- name, M1-2, M4-3
spur                                (11797),  -- NEW: Typically followed by
                                              -- name, M1-3
juncton                             (11798),  -- NEW: Typically followed by
                                              -- names, M2-1, M2-2
alternative                         (11783),  -- NEW: Typically followed by
                                              -- name, M4-1, M4-1a
county-Route                        (11784),  -- NEW: Typically followed by
                                              -- name, M1-6
forest-Route                        (11785),  -- NEW: Typically followed by
                                              -- name, M1-7
farm-to-Market-Route                (11786),  -- NEW: Typically followed by
                                              -- name
eisenhower-Interstate-System        (11787),  -- NEW: Typically followed by
                                              -- name, M1-10
americas-Byways                     (11788),  -- NEW: Typically followed by
                                              -- name, Alt term: National
                                              -- Scenic Byways
national-Network-Route              (11789),  -- NEW: Typically followed by
                                              -- name
scenic-Area                         (11790),  -- NEW: Typically followed by
                                              -- name
parking-Area                        (11791),  -- NEW: Typically followed by
                                              -- name
weight-Station                      (11792),  -- NEW: Typically followed by
                                              -- name
road                                (11793),  -- NEW: Typically followed by
                                              -- name (all types of roads and
                                              -- streets not otherwise listed
                                              -- above)
exit                                (11794),  -- NEW: Typically followed by
                                              -- name
historical-route                    (11795),  -- NEW: Typically followed by
                                              -- name
state-line                          (11796),  -- NEW: Preceeded by a state name
                                              -- I-2
bicyle-route                        (11799),  -- NEW: Typically followed by
                                              -- name, M1-8
bicyle-interstate-route             (11800),  -- NEW: Typically followed by
                                              -- name, M1-9
national-park                       (11801),  -- NEW: Typically preceded by
                                              -- name, D7-1, D7-2
-- Recreational Objects And Activities
-- General Items
bear-veiwing-area                   (12033),  -- NEW: RG-020
deer-viewing-area                   (12034),  -- NEW: RG-040
drinking-water                      (12035),  -- NEW: RG-050
environmental-study-area            (12036),  -- NEW: RG-060
falling-rocks                       (12037),  -- NEW: RG-070 See also ITIS
                                              -- code: Rockfall 1309
firearms                            (12038),  -- NEW: RG-080
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leashed-pets                     (12039),  -- NEW: RG-110
point-of-interest                (12040),  -- NEW: RG-160
smoking                          (12041),  -- NEW: RG-180
dog                              (12042),  -- NEW: RG-240
tent-camping                     (12043),  -- NEW: RM-010
trailer-camping                  (12044),  -- NEW: RM-020
first-aid                        (12045),  -- NEW: RM-040
handicapped                      (12046),  -- NEW: RM-080
mechanic                         (12047),  -- NEW: RM-100
trailer-sanitary-station         (12048),  -- NEW: RM-160   Alt: Trailer
                                           -- Waste Station
viewing-area                     (12049),  -- NEW: RM-170
scenic-overlook                  (12095),  -- NEW: For D6-2
campfire                         (12050),  -- NEW: RA-030
locker                           (12051),  -- NEW: RA-070
sleeping                         (12052),  -- NEW: RA-110 As in Sleeping
                                           -- Shelter
trail                            (12053),  -- NEW: RA-120 As in Trail
                                           -- Shelter
climbing                         (12054),  -- NEW: RL-020
rock-climbing                    (12055),  -- NEW: RL-030
hunting                          (12056),  -- NEW: RL-040
playground                       (12057),  -- NEW: RL-050
rock-collecting                  (12058),  -- NEW: RL-060
spelunking                       (12059),  -- NEW: RL-070
bicycle-trail                    (12060),  -- NEW: RL-090
hiking-trail                     (12061),  -- NEW: RL-100
horse-trail                      (12062),  -- NEW: RL-110
trail-interpretive-auto          (12063),  -- NEW: RL-120
trail-interpretive-pedestrian    (12064),  -- NEW: RL-130
trail-road-for-4WD-vehicles      (12065),  -- NEW: RL-140
trail-for-trail-bikes            (12066),  -- NEW: RL-150
archer                           (12067),  -- NEW: RL-190
hang-glider                      (12068),  -- NEW: RL-210
-- Water Related
boat-tours                       (12069),  -- NEW: RW-010
canoeing                         (12070),  -- NEW: RW-020
diving                           (12071),  -- NEW: RW-030
scuba-diving                     (12072),  -- NEW: RW-040
fishing                          (12073),  -- NEW: RW-050
marine-recreation-area           (12074),  -- NEW: RW-060
motorboating                     (12075),  -- NEW: RW-070
boat-ramp                        (12076),  -- NEW: RW-080
rowboating                       (12077),  -- NEW: RW-090
sailboating                      (12078),  -- NEW: RW-100
water-skiing                     (12079),  -- NEW: RW-110
surfing                          (12080),  -- NEW: RW-120
swimming                         (12081),  -- NEW: RW-130
wading                           (12082),  -- NEW: RW-140
hand-launch                      (12083),  -- NEW: RW-170
kayak                            (12084),  -- NEW: RW-190
wind-surf                        (12085),  -- NEW: RW-210
-- Winter-Snow Related
ice-skating                      (12086),  -- NEW: RS-010
ski-jumping                      (12087),  -- NEW: RS-020
bobbing                          (12088),  -- NEW: RS-030
cross-country-skiing             (12089),  -- NEW: RS-040
downhill-skiing                  (12090),  -- NEW: RS-050
sledding                         (12091),  -- NEW: RS-060
snowmobiling                     (12092),  -- NEW: RS-070
snowshoeing                      (12093),  -- NEW: RS-080
winter-recreation-area           (12094),  -- NEW: RS-090
-- Regulatory And Warning Signs
-- MUTCD Signage Types
regulatory-sign                  (12289),  -- NEW: Followed by sign data
warning-sign                     (12290),  -- NEW: Followed by sign data
information-sign                  (12291),  -- NEW: Followed by sign data
construction-sign                (12292),  -- NEW: Followed by sign data
guide-sign                       (12293),  -- NEW: Followed by sign data
-- MUCTD Basic Signs
stop                             (12294),  -- NEW:
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yield                                  (12295),  -- NEW:
caution                                (12330),  -- NEW:
temporary                              (12331),  -- NEW:
to-oncoming-traffic                    (12296),  -- NEW:
four-way                               (12297),  -- NEW: As in 4-way stop
all-way                                (12298),  -- NEW: All directions of travel
                                                 -- allowed or all lanes at a
                                                 -- junction
one-way                                (12329),  -- NEW: One direction of travel
                                                 -- allowed
-- MUCTD Sign Fragments
zone                                   (12299),  -- NEW: Typically preceded by
                                                 -- type of zone
narrows                                (12300),  -- NEW: Used as an MUTCD sign,
                                                 -- typically preceded by road
widens                                 (12301),  -- NEW: Used as an MUTCD sign,
                                                 -- typically preceded by road
reduced                                (12302),  -- NEW: Used as an MUTCD sign,
                                                 -- typically preceded by road or
                                                 -- lane
combined                               (12303),  -- NEW:
minimum                                (12304),  -- NEW:
maximum                                (12305),  -- NEW:
divided-road                           (12306),  -- NEW: Use for divided highway
                                                 -- as well
double-arrow                           (12307),  -- NEW:
dead-end                               (12308),  -- NEW:
no-outlet                              (12309),  -- NEW:
wrong-way                              (12310),  -- NEW: R-5-1a
do-not-enter                           (12314),  -- NEW: R-5-1
detour                                 (12312),  -- NEW: Typically followed by
                                                 -- arrows and distance
chevron                                (12313),  -- NEW:
-- MUCTD Intersection Graphics
t-intersection-to-the-side             (12315),  -- NEW:
t-intersection-oncoming                (12316),  -- NEW: Use for W2-4 graphic
y-intersection-to-the-side             (12317),  -- NEW:
y-intersection-oncoming                (12318),  -- NEW: Use for W2-5 graphic
four-way-divided-highway-crossing      (12319),  -- NEW: Use for R6-3 graphic
t-way-divided-highway-crossing         (12320),  -- NEW: Use for R6-3a graphic
light-rail-divided-highway-crossing    (12321),  -- NEW: Use for R15-7 graphic
light-rail-t-divided-highway-crossing  (12322),  -- NEW: Use for R15-7a graphic
side-road-to-right                     (12323),  -- NEW: Use for W2-2R graphic
side-road-to-left                      (12324),  -- NEW: Use for W2-2L graphic
side-road-to-right-at-angle            (12325),  -- NEW: Use for W2-3R graphic
side-road-to-left-at-angle             (12326),  -- NEW: Use for W2-3L graphic
entering-roadway-merge                 (12327),  -- NEW: Use for W4-5 graphic
entering-roadway-added-lane            (12328),  -- NEW: Use for W4-6 graphic
-- Small Numbers
n1                                     (12545),  -- NEW:
n2                                     (12546),  -- NEW:
n3                                     (12547),  -- NEW:
n4                                     (12548),  -- NEW:
n5                                     (12549),  -- NEW:
n6                                     (12550),  -- NEW:
n7                                     (12551),  -- NEW:
n8                                     (12552),  -- NEW:
n9                                     (12553),  -- NEW:
n10                                    (12554),  -- NEW:
n11                                    (12555),  -- NEW:
n12                                    (12556),  -- NEW:
n13                                    (12557),  -- NEW:
n14                                    (12558),  -- NEW:
n15                                    (12559),  -- NEW:
n16                                    (12560),  -- NEW:
n17                                    (12561),  -- NEW:
n18                                    (12562),  -- NEW:
n19                                    (12563),  -- NEW:
n20                                    (12564),  -- NEW:
n21                                    (12565),  -- NEW:
n22                                    (12566),  -- NEW:
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n23                                          (12567),   --  NEW:
n24                                          (12568),   --  NEW:
n25                                          (12569),   --  NEW:
n26                                          (12570),   --  NEW:
n27                                          (12571),   --  NEW:
n28                                          (12572),   --  NEW:
n29                                          (12573),   --  NEW:
n30                                          (12574),   --  NEW:
n31                                          (12575),   --  NEW:
n32                                          (12576),   --  NEW:
n33                                          (12577),   --  NEW:
n34                                          (12578),   --  NEW:
n35                                          (12579),   --  NEW:
n36                                          (12580),   --  NEW:
n37                                          (12581),   --  NEW:
n38                                          (12582),   --  NEW:
n39                                          (12583),   --  NEW:
n40                                          (12584),   --  NEW:
n41                                          (12585),   --  NEW:
n42                                          (12586),   --  NEW:
n43                                          (12587),   --  NEW:
n44                                          (12588),   --  NEW:
n45                                          (12589),   --  NEW:
n46                                          (12590),   --  NEW:
n47                                          (12591),   --  NEW:
n48                                          (12592),   --  NEW:
n49                                          (12593),   --  NEW:
n50                                          (12594),   --  NEW:
n51                                          (12595),   --  NEW:
n52                                          (12596),   --  NEW:
n53                                          (12597),   --  NEW:
n54                                          (12598),   --  NEW:
n55                                          (12599),   --  NEW:
n56                                          (12600),   --  NEW:
n57                                          (12601),   --  NEW:
n58                                          (12602),   --  NEW:
n59                                          (12603),   --  NEW:
n60                                          (12604),   --  NEW:
n61                                          (12605),   --  NEW:
n62                                          (12606),   --  NEW:
n63                                          (12607),   --  NEW:
n64                                          (12608),   --  NEW:
n65                                          (12609),   --  NEW:
n66                                          (12610),   --  NEW:
n67                                          (12611),   --  NEW:
n68                                          (12612),   --  NEW:
n69                                          (12613),   --  NEW:
n70                                          (12614),   --  NEW:
n71                                          (12615),   --  NEW:
n72                                          (12616),   --  NEW:
n73                                          (12617),   --  NEW:
n74                                          (12618),   --  NEW:
n75                                          (12619),   --  NEW:
n76                                          (12620),   --  NEW:
n77                                          (12621),   --  NEW:
n78                                          (12622),   --  NEW:
n79                                          (12623),   --  NEW:
n80                                          (12624),   --  NEW:
n81                                          (12625),   --  NEW:
n82                                          (12626),   --  NEW:
n83                                          (12627),   --  NEW:
n84                                          (12628),   --  NEW:
n85                                          (12629),   --  NEW:
n86                                          (12630),   --  NEW:
n87                                          (12631),   --  NEW:
n88                                          (12632),   --  NEW:
n89                                          (12633),   --  NEW:
n90                                          (12634),   --  NEW:
n91                                          (12635),   --  NEW:
n92                                          (12636),   --  NEW:
n93                                          (12637),   --  NEW:
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n94                              (12638),   -- NEW:
n95                              (12639),   -- NEW:
n96                              (12640),   -- NEW:
n97                              (12641),   -- NEW:
n98                              (12642),   -- NEW:
n99                              (12643),   -- NEW:
n100                             (12644),   -- NEW:
n101                             (12645),   -- NEW:
n102                             (12646),   -- NEW:
n103                             (12647),   -- NEW:
n104                             (12648),   -- NEW:
n105                             (12649),   -- NEW:
n106                             (12650),   -- NEW:
n107                             (12651),   -- NEW:
n108                             (12652),   -- NEW:
n109                             (12653),   -- NEW:
n110                             (12654),   -- NEW:
n111                             (12655),   -- NEW:
n112                             (12656),   -- NEW:
n113                             (12657),   -- NEW:
n114                             (12658),   -- NEW:
n115                             (12659),   -- NEW:
n116                             (12660),   -- NEW:
n117                             (12661),   -- NEW:
n118                             (12662),   -- NEW:
n119                             (12663),   -- NEW:
n120                             (12664),   -- NEW:
n121                             (12665),   -- NEW:
n122                             (12666),   -- NEW:
n123                             (12667),   -- NEW:
n124                             (12668),   -- NEW:
n125                             (12669),   -- NEW:
n126                             (12670),   -- NEW:
n127                             (12671),   -- NEW:
n128                             (12672),   -- NEW:
n129                             (12673),   -- NEW:
n130                             (12674),   -- NEW:
n131                             (12675),   -- NEW:
n132                             (12676),   -- NEW:
n133                             (12677),   -- NEW:
n134                             (12678),   -- NEW:
n135                             (12679),   -- NEW:
n136                             (12680),   -- NEW:
n137                             (12681),   -- NEW:
n138                             (12682),   -- NEW:
n139                             (12683),   -- NEW:
n140                             (12684),   -- NEW:
n141                             (12685),   -- NEW:
n142                             (12686),   -- NEW:
n143                             (12687),   -- NEW:
n144                             (12688),   -- NEW:
n145                             (12689),   -- NEW:
n146                             (12690),   -- NEW:
n147                             (12691),   -- NEW:
n148                             (12692),   -- NEW:
n149                             (12693),   -- NEW:
n150                             (12694),   -- NEW:
n151                             (12695),   -- NEW:
n152                             (12696),   -- NEW:
n153                             (12697),   -- NEW:
n154                             (12698),   -- NEW:
n155                             (12699),   -- NEW:
n156                             (12700),   -- NEW:
n157                             (12701),   -- NEW:
n158                             (12702),   -- NEW:
n159                             (12703),   -- NEW:
n160                             (12704),   -- NEW:
n161                             (12705),   -- NEW:
n162                             (12706),   -- NEW:
n163                             (12707),   -- NEW:
n164                             (12708),   -- NEW:
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n165                                  (12709),    --  NEW:
n166                                  (12710),    --  NEW:
n167                                  (12711),    --  NEW:
n168                                  (12712),    --  NEW:
n169                                  (12713),    --  NEW:
n170                                  (12714),    --  NEW:
n171                                  (12715),    --  NEW:
n172                                  (12716),    --  NEW:
n173                                  (12717),    --  NEW:
n174                                  (12718),    --  NEW:
n175                                  (12719),    --  NEW:
n176                                  (12720),    --  NEW:
n177                                  (12721),    --  NEW:
n178                                  (12722),    --  NEW:
n179                                  (12723),    --  NEW:
n180                                  (12724),    --  NEW:
n181                                  (12725),    --  NEW:
n182                                  (12726),    --  NEW:
n183                                  (12727),    --  NEW:
n184                                  (12728),    --  NEW:
n185                                  (12729),    --  NEW:
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n187                                  (12731),    --  NEW:
n188                                  (12732),    --  NEW:
n189                                  (12733),    --  NEW:
n190                                  (12734),    --  NEW:
n191                                  (12735),    --  NEW:
n192                                  (12736),    --  NEW:
n193                                  (12737),    --  NEW:
n194                                  (12738),    --  NEW:
n195                                  (12739),    --  NEW:
n196                                  (12740),    --  NEW:
n197                                  (12741),    --  NEW:
n198                                  (12742),    --  NEW:
n199                                  (12743),    --  NEW:
n200                                  (12744),    --  NEW:
n201                                  (12745),    --  NEW:
n202                                  (12746),    --  NEW:
n203                                  (12747),    --  NEW:
n204                                  (12748),    --  NEW:
n205                                  (12749),    --  NEW:
n206                                  (12750),    --  NEW:
n207                                  (12751),    --  NEW:
n208                                  (12752),    --  NEW:
n209                                  (12753),    --  NEW:
n210                                  (12754),    --  NEW:
n211                                  (12755),    --  NEW:
n212                                  (12756),    --  NEW:
n213                                  (12757),    --  NEW:
n214                                  (12758),    --  NEW:
n215                                  (12759),    --  NEW:
n216                                  (12760),    --  NEW:
n217                                  (12761),    --  NEW:
n218                                  (12762),    --  NEW:
n219                                  (12763),    --  NEW:
n220                                  (12764),    --  NEW:
n221                                  (12765),    --  NEW:
n222                                  (12766),    --  NEW:
n223                                  (12767),    --  NEW:
n224                                  (12768),    --  NEW:
n225                                  (12769),    --  NEW:
n226                                  (12770),    --  NEW:
n227                                  (12771),    --  NEW:
n228                                  (12772),    --  NEW:
n229                                  (12773),    --  NEW:
n230                                  (12774),    --  NEW:
n231                                  (12775),    --  NEW:
n232                                  (12776),    --  NEW:
n233                                  (12777),    --  NEW:
n234                                  (12778),    --  NEW:
n235                                  (12779),    --  NEW:
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n236                                  (12780),   -- NEW:
n237                                  (12781),   -- NEW:
n238                                  (12782),   -- NEW:
n239                                  (12783),   -- NEW:
n240                                  (12784),   -- NEW:
n241                                  (12785),   -- NEW:
n242                                  (12786),   -- NEW:
n243                                  (12787),   -- NEW:
n244                                  (12788),   -- NEW:
n245                                  (12789),   -- NEW:
n246                                  (12790),   -- NEW:
n247                                  (12791),   -- NEW:
n248                                  (12792),   -- NEW:
n249                                  (12793),   -- NEW:
n250                                  (12794),   -- NEW:
n251                                  (12795),   -- NEW:
n252                                  (12796),   -- NEW:
n253                                  (12797),   -- NEW:
n254                                  (12798),   -- NEW:
n255                                  (12799),   -- NEW:
-- States And Territories
alabama                               (12801),   -- NEW:
alaska                                (12802),   -- NEW:
american-Samoa                        (12803),   -- NEW:
arizona                               (12804),   -- NEW:
arkansas                              (12805),   -- NEW:
california                            (12806),   -- NEW:
colorado                              (12807),   -- NEW:
connecticut                           (12808),   -- NEW:
delaware                              (12809),   -- NEW:
district-of-Columbia                  (12810),   -- NEW:
florida                               (12811),   -- NEW:
georgia                               (12812),   -- NEW:
guam                                  (12813),   -- NEW:
hawaii                                (12814),   -- NEW:
idaho                                 (12815),   -- NEW:
illinois                              (12816),   -- NEW:
indiana                               (12817),   -- NEW:
iowa                                  (12818),   -- NEW:
kansas                                (12819),   -- NEW:
kentucky                              (12820),   -- NEW:
louisiana                             (12821),   -- NEW:
maine                                 (12822),   -- NEW:
maryland                              (12823),   -- NEW:
massachusetts                         (12824),   -- NEW:
michigan                              (12825),   -- NEW:
minnesota                             (12826),   -- NEW:
mississippi                           (12827),   -- NEW:
missouri                              (12828),   -- NEW:
montana                               (12829),   -- NEW:
nebraska                              (12830),   -- NEW:
nevada                                (12831),   -- NEW:
new-Hampshire                         (12832),   -- NEW:
new-Jersey                            (12833),   -- NEW:
new-Mexico                            (12834),   -- NEW:
new-York                              (12835),   -- NEW:
north-Carolina                        (12836),   -- NEW:
north-Dakota                          (12837),   -- NEW:
northern-Marianas-Islands             (12838),   -- NEW:
ohio                                  (12839),   -- NEW:
oklahoma                              (12840),   -- NEW:
oregon                                (12841),   -- NEW:
pennsylvania                          (12842),   -- NEW:
puerto-rico                           (12843),   -- NEW:
rhode-Island                          (12844),   -- NEW:
south-Carolina                        (12845),   -- NEW:
south-Dakota                          (12846),   -- NEW:
tennessee                             (12847),   -- NEW:
texas                                 (12848),   -- NEW:
utah                                  (12849),   -- NEW:
vermont                               (12850),   -- NEW:
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virginia                             (12851),   -- NEW:
virgin-Islands                       (12852),   -- NEW:
washington                           (12853),   -- NEW:
west-Virginia                        (12854),   -- NEW:
wisconsin                            (12855),   -- NEW:
wyoming                              (12856),   -- NEW:
-- Structures
rest-room                            (13057),   -- NEW: RM-140
mens-rest-room                       (13058),   -- NEW: RA-090
womens-rest-room                     (13059),   -- NEW: RA-100
family-rest-room                     (13060),   -- NEW: RA-150
dam                                  (13061),   -- NEW: RG-030
fish-hatchery                        (13062),   -- NEW: RG-090
information                          (13063),   -- NEW: RG-100
lighthouse                           (13064),   -- NEW: RG-120
lookout-tower                        (13065),   -- NEW: RG-140
ranger-station                       (13066),   -- NEW: RG-170
grocery-store                        (13068),   -- NEW: RM-070
lodging                              (13069),   -- NEW: RM-090
post-office                          (13070),   -- NEW: RM-110
picnic-shelter                       (13072),   -- NEW: RM-130
group-camping                        (13073),   -- NEW: RM-210
group-picnicking                     (13074),   -- NEW: RM-220
n24-hour-pharmacy                    (13075),   -- NEW: RM-230
kennel                               (13076),   -- NEW: RA-050
laundry-facilities                   (13077),   -- NEW: RA-060
shower-facilities                    (13078),   -- NEW: RA-130
amphitheater                         (13079),   -- NEW: RL-010
stable                               (13080),   -- NEW: RL-080
hospital                             (13081),   -- NEW: D9-13a or D9-2
emergency-medical-service-point      (13082),   -- NEW: Use for emergency medical
                                                -- care as well D9-13c
library                              (13083),   -- NEW: I-8p
recycling-collection-center          (13084),   -- NEW: I-11
school                               (13085),   -- NEW: Use for S1-1
-- Street Suffixes
alley                                (13313),   -- NEW:
annex                                (13314),   -- NEW:
arcade                               (13315),   -- NEW:
avenue                               (13316),   -- NEW:
bayoo                                (13317),   -- NEW:
beach                                (13318),   -- NEW:
bend                                 (13319),   -- NEW:
bluff                                (13320),   -- NEW:
bottom                               (13321),   -- NEW:
boulevard                            (13322),   -- NEW:
branch                               (13323),   -- NEW:
nbridge                              (13324),   -- NEW: Note use of "n" to avoid
                                                -- conflict with other entry
brook                                (13325),   -- NEW:
burg                                 (13326),   -- NEW:
bypass                               (13327),   -- NEW:
camp                                 (13328),   -- NEW:
canyon                               (13329),   -- NEW:
cape                                 (13330),   -- NEW:
causeway                             (13331),   -- NEW:
nCenter                              (13332),   -- NEW: Note use of "n" to avoid
                                                -- conflict with other entry
circle                               (13333),   -- NEW:
cliff                                (13334),   -- NEW:
club                                 (13335),   -- NEW:
common                               (13336),   -- NEW:
corner                               (13337),   -- NEW:
course                               (13338),   -- NEW:
court                                (13339),   -- NEW:
cove                                 (13340),   -- NEW:
creek                                (13341),   -- NEW:
crescent                             (13342),   -- NEW:
crest                                (13343),   -- NEW:
nCrossing                            (13344),   -- NEW: Note use of "n" to avoid
                                                -- conflict with other entry
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crossroad                         (13345),   -- NEW:
curve                             (13346),   -- NEW:
dale                              (13347),   -- NEW:
nDam                              (13348),   -- NEW: Note use of "n" to avoid
                                             -- conflict with other entry
divide                            (13349),   -- NEW:
drive                             (13350),   -- NEW:
estate                            (13351),   -- NEW:
expressway                        (13352),   -- NEW:
extension                         (13353),   -- NEW:
fall                              (13354),   -- NEW:
nFerry                            (13355),   -- NEW: Note use of "n" to avoid
                                             -- conflict with other entry
field                             (13356),   -- NEW:
flat                              (13357),   -- NEW:
ford                              (13358),   -- NEW:
forest                            (13359),   -- NEW:
forge                             (13360),   -- NEW:
fork                              (13361),   -- NEW:
fort                              (13362),   -- NEW:
nFreeway                          (13363),   -- NEW: Note use of "n" to avoid
                                             -- conflict with other entry
garden                            (13364),   -- NEW:
gateway                           (13365),   -- NEW:
glen                              (13366),   -- NEW:
green                             (13367),   -- NEW:
grove                             (13368),   -- NEW:
harbor                            (13369),   -- NEW:
haven                             (13370),   -- NEW:
heights                           (13371),   -- NEW:
highway                           (13372),   -- NEW:
nHill                             (13373),   -- NEW: Note use of "n" to avoid
                                             -- conflict with other entry
hollow                            (13374),   -- NEW:
inlet                             (13375),   -- NEW:
nIsland                           (13376),   -- NEW: Note use of "n" to avoid
                                             -- conflict with other entry
isle                              (13377),   -- NEW:
nJunction                         (13378),   -- NEW:  Note use of "n" to avoid
                                             -- conflict with other entry
key                               (13379),   -- NEW:
knoll                             (13380),   -- NEW:
lake                              (13381),   -- NEW:
land                              (13382),   -- NEW:
landing                           (13383),   -- NEW:
nLane                             (13384),   -- NEW:  Note use of "n" to avoid
                                             -- conflict with other entry
light                             (13385),   -- NEW:
loaf                              (13386),   -- NEW:
lock                              (13387),   -- NEW:
lodge                             (13388),   -- NEW:
loop                              (13389),   -- NEW:
mall                              (13390),   -- NEW:
manor                             (13391),   -- NEW:
meadow                            (13392),   -- NEW:
mews                              (13393),   -- NEW:
mill                              (13394),   -- NEW:
mission                           (13395),   -- NEW:
motorway                          (13396),   -- NEW:
mount                             (13397),   -- NEW:
mountain                          (13398),   -- NEW:
neck                              (13399),   -- NEW:
orchard                           (13400),   -- NEW:
oval                              (13401),   -- NEW:
nOverpass                         (13402),   -- NEW: Note use of "n" to avoid
                                             -- conflict with other entry
park                              (13403),   -- NEW:
parkway                           (13404),   -- NEW:
nPass                             (13405),   -- NEW: Note use of "n" to avoid
                                             -- conflict with other entry
passage                           (13406),   -- NEW:
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path                   (13407),   -- NEW:
pike                   (13408),   -- NEW:
pine                   (13409),   -- NEW:
plains                 (13410),   -- NEW:
plaza                  (13411),   -- NEW:
point                  (13412),   -- NEW:
port                   (13413),   -- NEW:
prairie                (13414),   -- NEW:
radial                 (13415),   -- NEW:
ramp                   (13416),   -- NEW:
ranch                  (13417),   -- NEW:
rapid                  (13418),   -- NEW:
rest                   (13419),   -- NEW:
ridge                  (13420),   -- NEW:
river                  (13421),   -- NEW:
nRoad                  (13422),   -- NEW: Note use of "n" to avoid
                                  -- conflict with other entry
route                  (13423),   -- NEW:
row                    (13424),   -- NEW:
rue                    (13425),   -- NEW:
run                    (13426),   -- NEW:
shoal                  (13427),   -- NEW:
shore                  (13428),   -- NEW:
skyway                 (13429),   -- NEW:
spring                 (13430),   -- NEW:
spur                   (13431),   -- NEW:
square                 (13432),   -- NEW:
nStation               (13433),   -- NEW: Note use of "n" to avoid
                                  -- conflict with other entry
stravenue              (13434),   -- NEW:
stream                 (13435),   -- NEW:
street                 (13436),   -- NEW:
summit                 (13437),   -- NEW:
terrace                (13438),   -- NEW:
throughway             (13439),   -- NEW:
trace                  (13440),   -- NEW:
nTrack                 (13441),   -- NEW: Note use of "n" to avoid
                                  -- conflict with other entry
trafficway             (13442),   -- NEW:
nTrail                 (13443),   -- NEW: Note use of "n" to avoid
                                  -- conflict with other entry
xTunnel                (13444),   -- NEW: Note use of "n" to avoid
                                  -- conflict with other entry
turnpike               (13445),   -- NEW:
nUnderpass             (13446),   -- NEW: Note use of "n" to avoid
                                  -- conflict with other entry
union                  (13447),   -- NEW:
valley                 (13448),   -- NEW:
viaduct                (13449),   -- NEW:
view                   (13450),   -- NEW:
village                (13451),   -- NEW:
ville                  (13452),   -- NEW:
vista                  (13453),   -- NEW:
nWalk                  (13454),   -- NEW: Note use of "n" to avoid
                                  -- conflict with other  entry
wall                   (13455),   -- NEW:
way                    (13456),   -- NEW:
well                   (13457),   -- NEW:
-- MUTCD Locations
-- Signage Locations
ahead                  (13569),   -- NEW: Location and used as
                                  -- arrow
here                   (13570),   -- NEW: Location and used as
                                  -- arrow
here-to                (13571),   -- NEW: Followed by specific
                                  -- object
here-to-alley          (13572),   -- NEW:
here-to-corner         (13573),   -- NEW:
here-to-sign           (13574),   -- NEW:
between-signs          (13575),   -- NEW:
between                (13633),   -- NEW: Followed by object, and,
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                                                      -- another object
    this-side-of-street                    (13576),   -- NEW:
    this-side-of-sign                      (13577),   -- NEW:
    right                                  (13579),   -- NEW:
    left                                   (13580),   -- NEW:
    begin-point                            (13581),   -- NEW: Use for "begins" as well.
                                                      -- Do not use for times/dates
    next                                   (13582),   -- NEW: May be followed by a
                                                      -- distance value
    starting-start                         (13611),   -- NEW: Do not use for
                                                      -- times/dates
    ends-end                               (13583),   -- NEW: Do not use for
                                                      -- times/dates
    other-Side                             (13584),   -- NEW:
    crossing                               (13585),   -- NEW:
    crosswalks                             (13586),   -- NEW:
    center-strip                           (13587),   -- NEW: Alt form: center stripe
    lane                                   (13588),   -- NEW: Used for lanes as well
    shelter                                (13634),   -- NEW: Typically preceded by a
                                                      -- specific type
    center                                 (13635),   -- NEW: Typically preceded by a
                                                      -- specific type
-- Signage Arrows
    hill                                   (13589),   -- NEW:
    both-ways-left-and-right               (13590),   -- NEW:
    both-ways-45-degree-angle-tilting-right (13591),  -- NEW:
    both-ways-45-degree-angle-tilting-left (13592),   -- NEW:
    both-directions-of-travel              (13593),   -- NEW: As in Centerline - left
                                                      -- turn arrows - both directions
                                                      -- of travel or for two-way
                                                      -- traffic
    left-arrow                             (13610),   -- NEW:
    left-turn                              (13594),   -- NEW: For W1R
    left-45-degree-arrow                   (13595),   -- NEW:
    left-45-degree-turn                    (13596),   -- NEW:
    ahead-and-to-the-left                  (13597),   -- NEW:
    ahead-and-to-the-left-at-a-45-degree-angle (13598), -- NEW:
    right-arrow                            (13609),   -- NEW:
    right-turn                             (13599),   -- NEW: For W1R
    right-45-degree-arrow                  (13600),   -- NEW: For W1-2
    right-45-degree-turn                   (13601),   -- NEW:
    ahead-and-to-the-right                 (13602),   -- NEW:
    ahead-and-to-the-right-at-a-45-degree-angle (13603), -- NEW:
    downward-left-45-degree                (13604),   -- NEW:
    downward-right-45-degree               (13605),   -- NEW:
    downward-left-and-right-45-degree      (13606),   -- NEW:
    reverse-turn-to-right                  (13636),   -- NEW: For W1-3R
    reverse-turn-to-left                   (13637),   -- NEW: For W1-3L
    reverse-curve-to-right                 (13638),   -- NEW: For W1-4R
    reverse-curve-to-left                  (13639),   -- NEW: For W1-4L
    two-lane-reverse-curve-to-right        (13623),   -- NEW: For W1-4bR
    two-lane-reverse-curve-to-left         (13624),   -- NEW: For W1-4bL
    three-lane-reverse-curve-to-right      (13625),   -- NEW: For W1-4cR
    three-lane-reverse-curve-to-left       (13626),   -- NEW: For W1-4cL
    winding-road-to-right                  (13640),   -- NEW: For W1-5R
    winding-road-to-left                   (13641),   -- NEW: For W1-5L
    chevron-right                          (13613),   -- NEW: For W1-8R
    chevron-left                           (13614),   -- NEW: For W1-8L
    right-turn-with-junction               (13615),   -- NEW: For horizontal alignment
                                                      -- right W1-10R
    left-turn-with-junction                (13616),   -- NEW: For horizontal alignment
                                                      -- left W1-10L
    hairpin-right                          (13617),   -- NEW: For W1-11
    hairpin-left                           (13618),   -- NEW: For W1-11
    truck-rollover-right                   (13619),   -- NEW: For W1-13
    truck-rollover-left                    (13620),   -- NEW:
    n270-degreee-turn-right                (13621),   -- NEW: For W1-15
    n270-degreee-turn-left                 (13622),   -- NEW:
    double-reverse-curve-to-right          (13627),   -- NEW: For W24-1R
    double-reverse-curve-to-left           (13628),   -- NEW: For W24-1L
    two-lane-double-reverse-curve-to-right (13629),   -- NEW: For W24-1aR
```

```
   two-lane-double-reverse-curve-to-left     (13630),  -- NEW: For W24-1aL
   three-lane-double-reverse-curve-to-right  (13631),  -- NEW: For W24-1bR
   three-lane-double-reverse-curve-to-left   (13632),  -- NEW: For W24-1bL
   ... -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:

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   <xs:enumeration value="accident involving a bus" id="_X520"/>
   <xs:enumeration value="accident involving a motorcycle" id="_X521"/>
   <xs:enumeration value="accident involving a pedestrian" id="_X522"/>
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- 86 -

```
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```

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        <xs:enumeration value="hairpin right" id="_X13617"/>
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          <xs:simpleType>
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  </xs:simpleType></scrap>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS-Codes_And_Text <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.18 Data Element: DE_Lane / Roadway Descriptions

Use: The ITIS enumeration list commonly referred to as "Lane / Roadway Descriptions," is assigned the upper byte value of [32] (which provides for value ranges from 8192 to 8447, inclusive). This list is formally called "LaneRoadway" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 61 different phrases, divided into 6 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 66 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 8320).

ASN.1 Representation:
```
LaneRoadway ::= ENUMERATED  {
    -- Lanes
    all-roadways                (8193),   -- Used as the default value
    through-lanes               (8194),
    left-lane                   (8195),
    right-lane                  (8196),
    center-lane                 (8197),
    middle-lanes                (8198),
    middle-two-lanes            (8199),
    right-turning-lanes         (8200),
    left-turning-lanes          (8201),
    upper-deck-lanes            (8236),
    lower-deck-lanes            (8237),
    reversible-lanes            (8238),
    right-exit-lanes            (8239),
    left-exit-lanes             (8240),
    right-merging-lanes         (8241),
    left-merging-lanes          (8242),
    -- Ramps
    right-exit-ramp             (8202),
    right-second-exit-ramp      (8243),
    right-entrance-ramp         (8203),
    right-second-entrance-ramp  (8245),
    left-exit-ramp              (8204),
    left-second-exit-ramp       (8244),
    left-entrance-ramp          (8205),
    left-second-entrance-ramp   (8246),
    escape-ramp                 (8234),   -- A truck feature on steep downgrades common in
                                          -- both Alaska and elsewhere.
    -- Shoulders
    hard-shoulder               (8206),
    soft-shoulder               (8207),
    right-shoulder              (8208),
    left-shoulder               (8209),
    median                      (8252),   -- NEW:
    sidewalk                    (8251),   -- NEW:
    -- Other
    highways                    (8235),
    right-hand-parallel-lanes   (8210),   -- Alternative Rendering:  right-hand frontage
                                          -- road
    left-hand-parallel-lanes    (8211),   -- Alternative Rendering:  left-hand frontage road
    connecting-lanes            (8212),
    express-lanes               (8213),
    local-lanes                 (8214),
    toll-lanes                  (8215),
    electronic-toll-lanes       (8216),
    toll-plaza                  (8217),
    inspection-lane             (8218),   -- Alternative Rendering:  Border patrol
                                          -- inspection lane
    hOV-lanes                   (8219),   -- Use when 2+ or 3+ is unknown and for HOV in
```

```
                                   -- general
bus-lanes               (8220),
carpool-lanes           (8221),
truck-lanes             (8222),
emergency-lanes         (8223),
passing-lanes           (8224),
climbing-lanes          (8225),
slow-lane               (8226),   -- Alternative Rendering:  Crawler lane
service-road            (8227),   -- Alternative Rendering:  Frontage Road
cycle-lane              (8228),   -- Use for bicycle lanes of all types
tracks                  (8250),   -- NEW: Use for light rail and transit uses, may
                                  -- have count of tracks
-- Bridges, Tunnels
bridge                  (8229),
overpass                (8230),
elevated-lanes          (8231),
underpass               (8232),
tunnel                  (8233),   -- Use for RG-200
-- Lanes Groups
all-exit-lanes          (8247),   -- NEW:
all-entry-lanes         (8248),   -- NEW:
either-shoulder         (8249),   -- NEW:
shoulder-work           (8253),   -- NEW: Use for W21-5 as well
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:

```
<xs:simpleType name="LaneRoadway" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="8192"/>
                <xs:maxInclusive value="8447"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="all roadways" id="_8193"/>
                <xs:enumeration value="through lanes" id="_8194"/>
                <xs:enumeration value="left lane" id="_8195"/>
                <xs:enumeration value="right lane" id="_8196"/>
                <xs:enumeration value="center lane" id="_8197"/>
                <xs:enumeration value="middle lanes" id="_8198"/>
                <xs:enumeration value="middle two lanes" id="_8199"/>
                <xs:enumeration value="right turning lanes" id="_8200"/>
                <xs:enumeration value="left turning lanes" id="_8201"/>
                <xs:enumeration value="upper deck lanes" id="_8236"/>
                <xs:enumeration value="lower deck lanes" id="_8237"/>
                <xs:enumeration value="reversible lanes" id="_8238"/>
                <xs:enumeration value="right exit lanes" id="_8239"/>
                <xs:enumeration value="left exit lanes" id="_8240"/>
                <xs:enumeration value="right merging lanes" id="_8241"/>
                <xs:enumeration value="left merging lanes" id="_8242"/>
                <xs:enumeration value="right exit ramp" id="_8202"/>
                <xs:enumeration value="right second exit ramp" id="_8243"/>
                <xs:enumeration value="right entrance ramp" id="_8203"/>
                <xs:enumeration value="right second entrance ramp" id="_8245"/>
                <xs:enumeration value="left exit ramp" id="_8204"/>
                <xs:enumeration value="left second exit ramp" id="_8244"/>
                <xs:enumeration value="left entrance ramp" id="_8205"/>
                <xs:enumeration value="left second entrance ramp" id="_8246"/>
                <xs:enumeration value="escape ramp" id="_8234"/>
                <xs:enumeration value="hard shoulder" id="_8206"/>
                <xs:enumeration value="soft shoulder" id="_8207"/>
                <xs:enumeration value="right shoulder" id="_8208"/>
                <xs:enumeration value="left shoulder" id="_8209"/>
                <xs:enumeration value="median" id="_8252"/>
                <xs:enumeration value="sidewalk" id="_8251"/>
                <xs:enumeration value="highways" id="_8235"/>
                <xs:enumeration value="right hand parallel lanes" id="_8210"/>
```

```
                    <xs:enumeration value="left hand parallel lanes" id="_8211"/>
                    <xs:enumeration value="connecting lanes" id="_8212"/>
                    <xs:enumeration value="express lanes" id="_8213"/>
                    <xs:enumeration value="local lanes" id="_8214"/>
                    <xs:enumeration value="toll lanes" id="_8215"/>
                    <xs:enumeration value="electronic toll lanes" id="_8216"/>
                    <xs:enumeration value="toll plaza" id="_8217"/>
                    <xs:enumeration value="inspection lane" id="_8218"/>
                    <xs:enumeration value="hOV lanes" id="_8219"/>
                    <xs:enumeration value="bus lanes" id="_8220"/>
                    <xs:enumeration value="carpool lanes" id="_8221"/>
                    <xs:enumeration value="truck lanes" id="_8222"/>
                    <xs:enumeration value="emergency lanes" id="_8223"/>
                    <xs:enumeration value="passing lanes" id="_8224"/>
                    <xs:enumeration value="climbing lanes" id="_8225"/>
                    <xs:enumeration value="slow lane" id="_8226"/>
                    <xs:enumeration value="service road" id="_8227"/>
                    <xs:enumeration value="cycle lane" id="_8228"/>
                    <xs:enumeration value="tracks" id="_8250"/>
                    <xs:enumeration value="bridge" id="_8229"/>
                    <xs:enumeration value="overpass" id="_8230"/>
                    <xs:enumeration value="elevated lanes" id="_8231"/>
                    <xs:enumeration value="underpass" id="_8232"/>
                    <xs:enumeration value="tunnel" id="_8233"/>
                    <xs:enumeration value="all exit lanes" id="_8247"/>
                    <xs:enumeration value="all entry lanes" id="_8248"/>
                    <xs:enumeration value="either shoulder" id="_8249"/>
                    <xs:enumeration value="shoulder work" id="_8253"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:LaneRoadway" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.19 Data Element: DE_Large Numbers

Use: The ITIS enumeration list commonly referred to as "Large Numbers," is assigned the upper byte value of [45] (which provides for value ranges from 11520 to 11775, inclusive). This list is formally called "LargeNumbers" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 90 different phrases. The remaining 37 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 11648).

ASN.1 Representation:
```
LargeNumbers ::= ENUMERATED  {
    n1-16th (11521),   -- NEW: The fraction 1/16th
    n1-10th (11522),   -- NEW: The fraction 1/10th
    n1-8th  (11523),   -- NEW: The fraction 1/8th
    n1-4th  (11524),   -- NEW: The fraction 1/4th
    n1-3rd  (11525),   -- NEW: The fraction 1/3rd
    n1-2    (11526),   -- NEW: The fraction 1/2
    n3-4    (11527),   -- NEW: The fraction 3/4th
    n300    (11531),   -- NEW:
    n350    (11532),   -- NEW:
```

```
n400      (11533),   -- NEW:
n450      (11534),   -- NEW:
n500      (11535),   -- NEW:
n550      (11536),   -- NEW:
n600      (11537),   -- NEW:
n650      (11538),   -- NEW:
n700      (11539),   -- NEW:
n750      (11540),   -- NEW:
n800      (11541),   -- NEW:
n850      (11542),   -- NEW:
n900      (11543),   -- NEW:
n950      (11544),   -- NEW:
n1000     (11545),   -- NEW:
n1100     (11546),   -- NEW:
n1200     (11547),   -- NEW:
n1300     (11548),   -- NEW:
n1400     (11549),   -- NEW:
n1500     (11550),   -- NEW:
n1600     (11551),   -- NEW:
n1700     (11552),   -- NEW:
n1800     (11553),   -- NEW:
n1900     (11554),   -- NEW:
n2000     (11555),   -- NEW:
n2100     (11556),   -- NEW:
n2200     (11557),   -- NEW:
n2300     (11558),   -- NEW:
n2400     (11559),   -- NEW:
n2500     (11560),   -- NEW:
n2600     (11561),   -- NEW:
n2700     (11562),   -- NEW:
n2800     (11563),   -- NEW:
n2900     (11564),   -- NEW:
n3000     (11565),   -- NEW:
n3500     (11566),   -- NEW:
n4000     (11567),   -- NEW:
n4500     (11568),   -- NEW:
n5000     (11569),   -- NEW:
n5500     (11570),   -- NEW:
n6000     (11571),   -- NEW:
n6500     (11572),   -- NEW:
n7000     (11573),   -- NEW:
n7500     (11574),   -- NEW:
n8000     (11575),   -- NEW:
n8500     (11576),   -- NEW:
n9000     (11577),   -- NEW:
n9500     (11578),   -- NEW:
n10000    (11579),   -- NEW:
n11000    (11580),   -- NEW:
n12000    (11581),   -- NEW:
n13000    (11582),   -- NEW:
n14000    (11583),   -- NEW:
n15000    (11584),   -- NEW:
n16000    (11585),   -- NEW:
n17000    (11586),   -- NEW:
n18000    (11587),   -- NEW:
n19000    (11588),   -- NEW:
n20000    (11589),   -- NEW:
n21000    (11590),   -- NEW:
n22000    (11591),   -- NEW:
n23000    (11592),   -- NEW:
n24000    (11593),   -- NEW:
n25000    (11594),   -- NEW:
n26000    (11595),   -- NEW:
n27000    (11596),   -- NEW:
n28000    (11597),   -- NEW:
n29000    (11598),   -- NEW:
n30000    (11599),   -- NEW:
n35000    (11600),   -- NEW:
n40000    (11601),   -- NEW:
n45000    (11602),   -- NEW:
n50000    (11603),   -- NEW:
```

```
   n55000  (11604),  -- NEW:
   n60000  (11605),  -- NEW:
   n65000  (11606),  -- NEW:
   n70000  (11607),  -- NEW:
   n75000  (11608),  -- NEW:
   n80000  (11609),  -- NEW:
   n85000  (11610),  -- NEW:
   n90000  (11611),  -- NEW:
   n95000  (11612),  -- NEW:
   n100000 (11613),  -- NEW:
   ... -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:
```
<xs:simpleType name="LargeNumbers" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="11520"/>
              <xs:maxInclusive value="11775"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="n1 16th" id="_11521"/>
              <xs:enumeration value="n1 10th" id="_11522"/>
              <xs:enumeration value="n1 8th" id="_11523"/>
              <xs:enumeration value="n1 4th" id="_11524"/>
              <xs:enumeration value="n1 3rd" id="_11525"/>
              <xs:enumeration value="n1 2" id="_11526"/>
              <xs:enumeration value="n3 4" id="_11527"/>
              <xs:enumeration value="n300" id="_11531"/>
              <xs:enumeration value="n350" id="_11532"/>
              <xs:enumeration value="n400" id="_11533"/>
              <xs:enumeration value="n450" id="_11534"/>
              <xs:enumeration value="n500" id="_11535"/>
              <xs:enumeration value="n550" id="_11536"/>
              <xs:enumeration value="n600" id="_11537"/>
              <xs:enumeration value="n650" id="_11538"/>
              <xs:enumeration value="n700" id="_11539"/>
              <xs:enumeration value="n750" id="_11540"/>
              <xs:enumeration value="n800" id="_11541"/>
              <xs:enumeration value="n850" id="_11542"/>
              <xs:enumeration value="n900" id="_11543"/>
              <xs:enumeration value="n950" id="_11544"/>
              <xs:enumeration value="n1000" id="_11545"/>
              <xs:enumeration value="n1100" id="_11546"/>
              <xs:enumeration value="n1200" id="_11547"/>
              <xs:enumeration value="n1300" id="_11548"/>
              <xs:enumeration value="n1400" id="_11549"/>
              <xs:enumeration value="n1500" id="_11550"/>
              <xs:enumeration value="n1600" id="_11551"/>
              <xs:enumeration value="n1700" id="_11552"/>
              <xs:enumeration value="n1800" id="_11553"/>
              <xs:enumeration value="n1900" id="_11554"/>
              <xs:enumeration value="n2000" id="_11555"/>
              <xs:enumeration value="n2100" id="_11556"/>
              <xs:enumeration value="n2200" id="_11557"/>
              <xs:enumeration value="n2300" id="_11558"/>
              <xs:enumeration value="n2400" id="_11559"/>
              <xs:enumeration value="n2500" id="_11560"/>
              <xs:enumeration value="n2600" id="_11561"/>
              <xs:enumeration value="n2700" id="_11562"/>
              <xs:enumeration value="n2800" id="_11563"/>
              <xs:enumeration value="n2900" id="_11564"/>
              <xs:enumeration value="n3000" id="_11565"/>
              <xs:enumeration value="n3500" id="_11566"/>
              <xs:enumeration value="n4000" id="_11567"/>
              <xs:enumeration value="n4500" id="_11568"/>
              <xs:enumeration value="n5000" id="_11569"/>
```

```
                <xs:enumeration value="n5500" id="_11570"/>
                <xs:enumeration value="n6000" id="_11571"/>
                <xs:enumeration value="n6500" id="_11572"/>
                <xs:enumeration value="n7000" id="_11573"/>
                <xs:enumeration value="n7500" id="_11574"/>
                <xs:enumeration value="n8000" id="_11575"/>
                <xs:enumeration value="n8500" id="_11576"/>
                <xs:enumeration value="n9000" id="_11577"/>
                <xs:enumeration value="n9500" id="_11578"/>
                <xs:enumeration value="n10000" id="_11579"/>
                <xs:enumeration value="n11000" id="_11580"/>
                <xs:enumeration value="n12000" id="_11581"/>
                <xs:enumeration value="n13000" id="_11582"/>
                <xs:enumeration value="n14000" id="_11583"/>
                <xs:enumeration value="n15000" id="_11584"/>
                <xs:enumeration value="n16000" id="_11585"/>
                <xs:enumeration value="n17000" id="_11586"/>
                <xs:enumeration value="n18000" id="_11587"/>
                <xs:enumeration value="n19000" id="_11588"/>
                <xs:enumeration value="n20000" id="_11589"/>
                <xs:enumeration value="n21000" id="_11590"/>
                <xs:enumeration value="n22000" id="_11591"/>
                <xs:enumeration value="n23000" id="_11592"/>
                <xs:enumeration value="n24000" id="_11593"/>
                <xs:enumeration value="n25000" id="_11594"/>
                <xs:enumeration value="n26000" id="_11595"/>
                <xs:enumeration value="n27000" id="_11596"/>
                <xs:enumeration value="n28000" id="_11597"/>
                <xs:enumeration value="n29000" id="_11598"/>
                <xs:enumeration value="n30000" id="_11599"/>
                <xs:enumeration value="n35000" id="_11600"/>
                <xs:enumeration value="n40000" id="_11601"/>
                <xs:enumeration value="n45000" id="_11602"/>
                <xs:enumeration value="n50000" id="_11603"/>
                <xs:enumeration value="n55000" id="_11604"/>
                <xs:enumeration value="n60000" id="_11605"/>
                <xs:enumeration value="n65000" id="_11606"/>
                <xs:enumeration value="n70000" id="_11607"/>
                <xs:enumeration value="n75000" id="_11608"/>
                <xs:enumeration value="n80000" id="_11609"/>
                <xs:enumeration value="n85000" id="_11610"/>
                <xs:enumeration value="n90000" id="_11611"/>
                <xs:enumeration value="n95000" id="_11612"/>
                <xs:enumeration value="n100000" id="_11613"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:LargeNumbers" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

6.20 Data Element: DE_Mobile Situation

Use: The ITIS enumeration list commonly referred to as "Mobile Situation," is assigned the upper byte value of [08] (which provides for value ranges from 2048 to 2303, inclusive). This list is formally called "MobileSituation" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 22 different phrases, divided into 2 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 105 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128

and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 2176).

ASN.1 Representation:
```
MobileSituation ::= ENUMERATED  {
    abnormal-load                                  (2049),
    wide-load                                      (2050),
    long-load                                      (2051),
    slow-vehicle                                   (2052),
    farm-equipment                                 (2053),
    horse-drawn-vehicles                           (2054),
    overheight-load                                (2055),
    overweight-load                                (2056),
    tracked-vehicle                                (2057),
    vehicle-carrying-hazardous-materials           (2058),
    slow-moving-maintenance-vehicle                (2059),  -- Hint: mowing, line
                                                            -- stripping, sweepers, etc.
    convoy                                         (2060),
    military-convoy                                (2061),
    refugee-convoy                                 (2062),
    motorcade                                      (2063),
    mobile-situation-repositioning                 (2064),
    winter-maintenance-vehicles                    (2065),
    snowplows                                       (2066),
    -- Cancel Types
    slow-moving-maintenance-vehicle-warning-cleared (2172),
    exceptional-load-warning-cleared               (2173),
    hazardous-load-warning-cleared                 (2174),
    convoy-cleared                                 (2175),
    ... -- # LOCAL_CONTENT_ITIS
    }
    -- Used for events which are mobile along the network
```

XML Representation:
```xml
<xs:simpleType name="MobileSituation" >
     <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
               <xs:minInclusive value="2048"/>
               <xs:maxInclusive value="2303"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
               <xs:enumeration value="abnormal load" id="_2049"/>
               <xs:enumeration value="wide load" id="_2050"/>
               <xs:enumeration value="long load" id="_2051"/>
               <xs:enumeration value="slow vehicle" id="_2052"/>
               <xs:enumeration value="farm equipment" id="_2053"/>
               <xs:enumeration value="horse drawn vehicles" id="_2054"/>
               <xs:enumeration value="overheight load" id="_2055"/>
               <xs:enumeration value="overweight load" id="_2056"/>
               <xs:enumeration value="tracked vehicle" id="_2057"/>
               <xs:enumeration value="vehicle carrying hazardous materials" id="_2058"/>
               <xs:enumeration value="slow moving maintenance vehicle" id="_2059"/>
               <xs:enumeration value="convoy" id="_2060"/>
               <xs:enumeration value="military convoy" id="_2061"/>
               <xs:enumeration value="refugee convoy" id="_2062"/>
               <xs:enumeration value="motorcade" id="_2063"/>
               <xs:enumeration value="mobile situation repositioning" id="_2064"/>
               <xs:enumeration value="winter maintenance vehicles" id="_2065"/>
               <xs:enumeration value="snowplows" id="_2066"/>
               <xs:enumeration value="slow moving maintenance vehicle warning cleared"
id="_2172"/>
               <xs:enumeration value="exceptional load warning cleared" id="_2173"/>
               <xs:enumeration value="hazardous load warning cleared" id="_2174"/>
               <xs:enumeration value="convoy cleared" id="_2175"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
```

```
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:MobileSituation" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.21 Data Element: DE_MUTCD Locations

Use: The ITIS enumeration list commonly referred to as "MUTCD Locations," is assigned the upper byte
value of [53] (which provides for value ranges from 13568 to 13823, inclusive). This list is formally called
"MUTCDLocations" in the ASN.1 and XML productions. The items in this enumeration list are not
allowed to be used as an event category classification. This list contains a total of 69 different phrases,
divided into 2 further sub-categories (the division into these sub-categories is informational only and other
groupings may also be used). The remaining 58 values up to the lower byte value of [127] are reserved for
additional "national" phrases in this byte range. Local phrases may be added to the list starting with the
lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any
local additions to this list would be given the value 13696).

ASN.1 Representation:
```
MUTCDLocations ::= ENUMERATED  {
    -- Signage Locations
    ahead                                  (13569),  -- NEW: Location and used as
                                                     -- arrow
    here                                   (13570),  -- NEW: Location and used as
                                                     -- arrow
    here-to                                (13571),  -- NEW: Followed by specific
                                                     -- object
    here-to-alley                          (13572),  -- NEW:
    here-to-corner                         (13573),  -- NEW:
    here-to-sign                           (13574),  -- NEW:
    between-signs                          (13575),  -- NEW:
    between                                (13633),  -- NEW: Followed by object, and,
                                                     -- another object
    this-side-of-street                    (13576),  -- NEW:
    this-side-of-sign                      (13577),  -- NEW:
    right                                  (13579),  -- NEW:
    left                                   (13580),  -- NEW:
    begin-point                            (13581),  -- NEW: Use for "begins" as
                                                     -- well. Do not use for
                                                     -- times/dates
    next                                   (13582),  -- NEW: May be followed by a
                                                     -- distance value
    starting-start                         (13611),  -- NEW: Do not use for
                                                     -- times/dates
    ends-end                               (13583),  -- NEW: Do not use for
                                                     -- times/dates
    other-Side                             (13584),  -- NEW:
    crossing                               (13585),  -- NEW:
    crosswalks                             (13586),  -- NEW:
    center-strip                           (13587),  -- NEW: Alt form: center stripe
    lane                                   (13588),  -- NEW: Used for lanes as well
    shelter                                (13634),  -- NEW: Typically preceded by a
                                                     -- specific type
    center                                 (13635),  -- NEW: Typically preceded by a
                                                     -- specific type
    -- Signage Arrows
    hill                                   (13589),  -- NEW:
    both-ways-left-and-right               (13590),  -- NEW:
    both-ways-45-degree-angle-tilting-right (13591),  -- NEW:
```

```
            both-ways-45-degree-angle-tilting-left        (13592),   -- NEW:
            both-directions-of-travel                     (13593),   -- NEW: As in Centerline - left
                                                                     -- turn arrows - both directions
                                                                     -- of travel or for two-way
                                                                     -- traffic
            left-arrow                                    (13610),   -- NEW:
            left-turn                                     (13594),   -- NEW: For W1R
            left-45-degree-arrow                          (13595),   -- NEW:
            left-45-degree-turn                           (13596),   -- NEW:
            ahead-and-to-the-left                         (13597),   -- NEW:
            ahead-and-to-the-left-at-a-45-degree-angle    (13598),   -- NEW:
            right-arrow                                   (13609),   -- NEW:
            right-turn                                    (13599),   -- NEW: For W1R
            right-45-degree-arrow                         (13600),   -- NEW: For W1-2
            right-45-degree-turn                          (13601),   -- NEW:
            ahead-and-to-the-right                        (13602),   -- NEW:
            ahead-and-to-the-right-at-a-45-degree-angle   (13603),   -- NEW:
            downward-left-45-degree                       (13604),   -- NEW:
            downward-right-45-degree                      (13605),   -- NEW:
            downward-left-and-right-45-degree             (13606),   -- NEW:
            reverse-turn-to-right                         (13636),   -- NEW: For W1-3R
            reverse-turn-to-left                          (13637),   -- NEW: For W1-3L
            reverse-curve-to-right                        (13638),   -- NEW: For W1-4R
            reverse-curve-to-left                         (13639),   -- NEW: For W1-4L
            two-lane-reverse-curve-to-right               (13623),   -- NEW: For W1-4bR
            two-lane-reverse-curve-to-left                (13624),   -- NEW: For W1-4bL
            three-lane-reverse-curve-to-right             (13625),   -- NEW: For W1-4cR
            three-lane-reverse-curve-to-left              (13626),   -- NEW: For W1-4cL
            winding-road-to-right                         (13640),   -- NEW: For W1-5R
            winding-road-to-left                          (13641),   -- NEW: For W1-5L
            chevron-right                                 (13613),   -- NEW: For W1-8R
            chevron-left                                  (13614),   -- NEW: For W1-8L
            right-turn-with-junction                      (13615),   -- NEW: For horizontal alignment
                                                                     -- right W1-10R
            left-turn-with-junction                       (13616),   -- NEW: For horizontal alignment
                                                                     -- left W1-10L
            hairpin-right                                 (13617),   -- NEW: For W1-11
            hairpin-left                                  (13618),   -- NEW: For W1-11
            truck-rollover-right                          (13619),   -- NEW: For W1-13
            truck-rollover-left                           (13620),   -- NEW:
            n270-degreee-turn-right                       (13621),   -- NEW: For W1-15
            n270-degreee-turn-left                        (13622),   -- NEW:
            double-reverse-curve-to-right                 (13627),   -- NEW: For W24-1R
            double-reverse-curve-to-left                  (13628),   -- NEW: For W24-1L
            two-lane-double-reverse-curve-to-right        (13629),   -- NEW: For W24-1aR
            two-lane-double-reverse-curve-to-left         (13630),   -- NEW: For W24-1aL
            three-lane-double-reverse-curve-to-right      (13631),   -- NEW: For W24-1bR
            three-lane-double-reverse-curve-to-left       (13632),   -- NEW: For W24-1bL
        ... -- # LOCAL_CONTENT_ITIS
        }
```

XML Representation:

```xml
<xs:simpleType name="MUTCDLocations" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="13568"/>
              <xs:maxInclusive value="13823"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="ahead" id="_13569"/>
              <xs:enumeration value="here" id="_13570"/>
              <xs:enumeration value="here to" id="_13571"/>
              <xs:enumeration value="here to alley" id="_13572"/>
              <xs:enumeration value="here to corner" id="_13573"/>
              <xs:enumeration value="here to sign" id="_13574"/>
              <xs:enumeration value="between signs" id="_13575"/>
              <xs:enumeration value="between" id="_13633"/>
```

```
                <xs:enumeration value="this side of street" id="_13576"/>
                <xs:enumeration value="this side of sign" id="_13577"/>
                <xs:enumeration value="right" id="_13579"/>
                <xs:enumeration value="left" id="_13580"/>
                <xs:enumeration value="begin point" id="_13581"/>
                <xs:enumeration value="next" id="_13582"/>
                <xs:enumeration value="starting start" id="_13611"/>
                <xs:enumeration value="ends end" id="_13583"/>
                <xs:enumeration value="other Side" id="_13584"/>
                <xs:enumeration value="crossing" id="_13585"/>
                <xs:enumeration value="crosswalks" id="_13586"/>
                <xs:enumeration value="center strip" id="_13587"/>
                <xs:enumeration value="lane" id="_13588"/>
                <xs:enumeration value="shelter" id="_13634"/>
                <xs:enumeration value="center" id="_13635"/>
                <xs:enumeration value="hill" id="_13589"/>
                <xs:enumeration value="both ways left and right" id="_13590"/>
                <xs:enumeration value="both ways 45 degree angle tilting right"
id="_13591"/>
                <xs:enumeration value="both ways 45 degree angle tilting left"
id="_13592"/>
                <xs:enumeration value="both directions of travel" id="_13593"/>
                <xs:enumeration value="left arrow" id="_13610"/>
                <xs:enumeration value="left turn" id="_13594"/>
                <xs:enumeration value="left 45 degree arrow" id="_13595"/>
                <xs:enumeration value="left 45 degree turn" id="_13596"/>
                <xs:enumeration value="ahead and to the left" id="_13597"/>
                <xs:enumeration value="ahead and to the left at a 45 degree angle"
id="_13598"/>
                <xs:enumeration value="right arrow" id="_13609"/>
                <xs:enumeration value="right turn" id="_13599"/>
                <xs:enumeration value="right 45 degree arrow" id="_13600"/>
                <xs:enumeration value="right 45 degree turn" id="_13601"/>
                <xs:enumeration value="ahead and to the right" id="_13602"/>
                <xs:enumeration value="ahead and to the right at a 45 degree angle"
id="_13603"/>
                <xs:enumeration value="downward left 45 degree" id="_13604"/>
                <xs:enumeration value="downward right 45 degree" id="_13605"/>
                <xs:enumeration value="downward left and right 45 degree" id="_13606"/>
                <xs:enumeration value="reverse turn to right" id="_13636"/>
                <xs:enumeration value="reverse turn to left" id="_13637"/>
                <xs:enumeration value="reverse curve to right" id="_13638"/>
                <xs:enumeration value="reverse curve to left" id="_13639"/>
                <xs:enumeration value="two lane reverse curve to right" id="_13623"/>
                <xs:enumeration value="two lane reverse curve to left" id="_13624"/>
                <xs:enumeration value="three lane reverse curve to right" id="_13625"/>
                <xs:enumeration value="three lane reverse curve to left" id="_13626"/>
                <xs:enumeration value="winding road to right" id="_13640"/>
                <xs:enumeration value="winding road to left" id="_13641"/>
                <xs:enumeration value="chevron right" id="_13613"/>
                <xs:enumeration value="chevron left" id="_13614"/>
                <xs:enumeration value="right turn with junction" id="_13615"/>
                <xs:enumeration value="left turn with junction" id="_13616"/>
                <xs:enumeration value="hairpin right" id="_13617"/>
                <xs:enumeration value="hairpin left" id="_13618"/>
                <xs:enumeration value="truck rollover right" id="_13619"/>
                <xs:enumeration value="truck rollover left" id="_13620"/>
                <xs:enumeration value="n270 degreee turn right" id="_13621"/>
                <xs:enumeration value="n270 degreee turn left" id="_13622"/>
                <xs:enumeration value="double reverse curve to right" id="_13627"/>
                <xs:enumeration value="double reverse curve to left" id="_13628"/>
                <xs:enumeration value="two lane double reverse curve to right"
id="_13629"/>
                <xs:enumeration value="two lane double reverse curve to left"
id="_13630"/>
                <xs:enumeration value="three lane double reverse curve to right"
id="_13631"/>
                <xs:enumeration value="three lane double reverse curve to left"
id="_13632"/>
            </xs:restriction>
        </xs:simpleType >
```

```
             <xs:simpleType>
                <xs:restriction base="xs:string">
                   <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
             </xs:simpleType>
             <xs:simpleType>
                <xs:restriction base="local:MUTCDLocations" />
             </xs:simpleType>
          </xs:union>
</xs:simpleType>
```

 In addition, this item may be used by data structures in other ITS standards.

6.22 Data Element: DE_Named Objects

Use: The ITIS enumeration list commonly referred to as "Named Objects," is assigned the upper byte value of [46] (which provides for value ranges from 11776 to 12031, inclusive). This list is formally called "NamedObjects" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 25 different phrases. The remaining 102 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 11904).

ASN.1 Representation:
```
NamedObjects ::= ENUMERATED  {
    name-follows                   (11777),   -- NEW: Used for other types of named objects
                                              -- to delimit name
    freeway                        (11778),   -- NEW: Typically followed by name
    us-Route                       (11779),   -- NEW: Typically followed by name, M1-4
    state-Route                    (11780),   -- NEW: Typically followed by name, M1-5
    interstate                     (11781),   -- NEW: Typically followed by name, M1-1
    business-Loop                  (11782),   -- NEW: Typically followed by name, M1-2, M4-3
    spur                           (11797),   -- NEW: Typically followed by name, M1-3
    juncton                        (11798),   -- NEW: Typically followed by names, M2-1, M2-2
    alternative                    (11783),   -- NEW: Typically followed by name, M4-1, M4-1a
    county-Route                   (11784),   -- NEW: Typically followed by name, M1-6
    forest-Route                   (11785),   -- NEW: Typically followed by name, M1-7
    farm-to-Market-Route           (11786),   -- NEW: Typically followed by name
    eisenhower-Interstate-System   (11787),   -- NEW: Typically followed by name, M1-10
    americas-Byways                (11788),   -- NEW: Typically followed by name, Alt term:
                                              -- National Scenic Byways
    national-Network-Route         (11789),   -- NEW: Typically followed by name
    scenic-Area                    (11790),   -- NEW: Typically followed by name
    parking-Area                   (11791),   -- NEW: Typically followed by name
    weight-Station                 (11792),   -- NEW: Typically followed by name
    road                           (11793),   -- NEW: Typically followed by name (all types
                                              -- of roads and streets not otherwise listed
                                              -- above)
    exit                           (11794),   -- NEW: Typically followed by name
    historical-route               (11795),   -- NEW: Typically followed by name
    state-line                     (11796),   -- NEW: Preceeded by a state name I-2
    bicyle-route                   (11799),   -- NEW: Typically followed by name, M1-8
    bicyle-interstate-route        (11800),   -- NEW: Typically followed by name, M1-9
    national-park                  (11801),   -- NEW: Typically preceded by name, D7-1, D7-2
    ... -- # LOCAL_CONTENT_ITIS
    }
```


XML Representation:
```
<xs:simpleType name="NamedObjects" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="11776"/>
              <xs:maxInclusive value="12031"/>
           </xs:restriction>
        </xs:simpleType>
```

```
        <xs:simpleType>
          <xs:restriction base="xs:string">
             <xs:enumeration value="name follows" id="_11777"/>
             <xs:enumeration value="freeway" id="_11778"/>
             <xs:enumeration value="us Route" id="_11779"/>
             <xs:enumeration value="state Route" id="_11780"/>
             <xs:enumeration value="interstate" id="_11781"/>
             <xs:enumeration value="business Loop" id="_11782"/>
             <xs:enumeration value="spur" id="_11797"/>
             <xs:enumeration value="juncton" id="_11798"/>
             <xs:enumeration value="alternative" id="_11783"/>
             <xs:enumeration value="county Route" id="_11784"/>
             <xs:enumeration value="forest Route" id="_11785"/>
             <xs:enumeration value="farm to Market Route" id="_11786"/>
             <xs:enumeration value="eisenhower Interstate System" id="_11787"/>
             <xs:enumeration value="americas Byways" id="_11788"/>
             <xs:enumeration value="national Network Route" id="_11789"/>
             <xs:enumeration value="scenic Area" id="_11790"/>
             <xs:enumeration value="parking Area" id="_11791"/>
             <xs:enumeration value="weight Station" id="_11792"/>
             <xs:enumeration value="road" id="_11793"/>
             <xs:enumeration value="exit" id="_11794"/>
             <xs:enumeration value="historical route" id="_11795"/>
             <xs:enumeration value="state line" id="_11796"/>
             <xs:enumeration value="bicyle route" id="_11799"/>
             <xs:enumeration value="bicyle interstate route" id="_11800"/>
             <xs:enumeration value="national park" id="_11801"/>
          </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
          <xs:restriction base="xs:string">
             <xs:pattern value="\[.+\].*"/>
          </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="local:NamedObjects" />
        </xs:simpleType>
     </xs:union>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

6.23 Data Element: DE_Objects

Use: The ITIS enumeration list commonly referred to as "Objects," is assigned the upper byte value of [43] (which provides for value ranges from 11008 to 11263, inclusive). This list is formally called "Objects" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 54 different phrases, divided into 3 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 73 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 11136).

ASN.1 Representation:
```
Objects ::= ENUMERATED  {
   -- Misc Items
   unknown-object             (11009),
   tire                       (11010),
   rim                        (11011),
   retread                    (11012),
   trash                      (11013),  -- Consider using the CleanUpItems of IEEE
                                        -- 1512 for operational needs
   cargo                      (11014),
   diesel                     (11015),
   gasoline                   (11016),  -- RM-060
   anti-freeze                (11017),
   propane-gas                (11061),  -- NEW:
```

```
alternative-fuel              (11060),   -- NEW: (Implies CNG)
seat-belts                    (11018),   -- NEW:
litter-container              (11019),   -- NEW: RG-130  Alt term: Trash Container
all-Terrain-vehicle           (11020),   -- NEW: Rl-170
seaplane                      (11021),   -- NEW: RG-260
chairlift                     (11022),   -- NEW: RS-100
fishing-pier                  (11023),   -- NEW: RW-160
telephone                     (11025),   -- NEW: RM-150 See also Emergency-Telephones
                                         -- 10544
railroad-cross-buck           (11024),   -- NEW:    (Used for Railroad crossings)
horn                          (11048),   -- NEW:
train                         (11047),   -- NEW: The train itself regardless of the
                                         -- type (not the mode of transit)
deer                          (11049),   -- NEW: W11-3
horse                         (11051),   -- NEW: Use for equestrian as well
cattle                        (11050),   -- NEW: W11-4
golf-cart                     (11052),   -- NEW: W11-10
services                      (11056),   -- NEW:
motorist-services             (11059),   -- NEW:   Alt text motor services D9-18
food-services                 (11053),   -- NEW:
roadside-table                (11055),   -- NEW:
ambulance-staging-point       (11054),   -- NEW: Use for ambulance station as well
-- Shelters-Structures
fallout                       (11026),   -- NEW: a type of shelter or structure
medical                       (11027),   -- NEW: a type of shelter or structure
chemical                      (11028),   -- NEW: a type of shelter or structure
welfare                       (11029),   -- NEW: a type of shelter or structure
decontamination               (11063),   -- NEW:
evacuation                    (11030),   -- NEW: a type of shelter or structure
registration                  (11062),   -- NEW: a type of shelter or structure
emergency                     (11064),   -- NEW:Use only when no other type is known
-- Signal States
left-arrow-signal             (11031),   -- NEW:
ahead-arrow-signal            (11032),   -- NEW:
right-arrow-signal            (11033),   -- NEW:
green-light-signal            (11034),   -- NEW:
green-arrow-signal            (11035),   -- NEW:
yellow-light-signal           (11036),   -- NEW:
yellow-arrow-signal           (11037),   -- NEW:
red-light-signal              (11038),   -- NEW:
red-arrow-signal              (11039),   -- NEW:
extended-green-signal         (11040),   -- NEW:
advance-arrow-signal          (11041),   -- NEW:
pedestrian-Signal-Stop        (11042),   -- NEW: Used for don't walk sign
pedestrian-Signal-Caution     (11043),   -- NEW: Used for don't start to walk
pedestrian-Signal-Walk        (11044),   -- NEW:
pedestrian-Signal-Light       (11045),   -- NEW: Use for light itself (regardless of
                                         -- state)
pedestrian-Signal-Time-Display (11046),  -- NEW: Use for count down timer display
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:

```
<xs:simpleType name="Objects" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="11008"/>
                <xs:maxInclusive value="11263"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="unknown object" id="_11009"/>
                <xs:enumeration value="tire" id="_11010"/>
                <xs:enumeration value="rim" id="_11011"/>
                <xs:enumeration value="retread" id="_11012"/>
                <xs:enumeration value="trash" id="_11013"/>
                <xs:enumeration value="cargo" id="_11014"/>
                <xs:enumeration value="diesel" id="_11015"/>
```

```
        <xs:enumeration value="gasoline" id="_11016"/>
        <xs:enumeration value="anti freeze" id="_11017"/>
        <xs:enumeration value="propane gas" id="_11061"/>
        <xs:enumeration value="alternative fuel" id="_11060"/>
        <xs:enumeration value="seat belts" id="_11018"/>
        <xs:enumeration value="litter container" id="_11019"/>
        <xs:enumeration value="all Terrain vehicle" id="_11020"/>
        <xs:enumeration value="seaplane" id="_11021"/>
        <xs:enumeration value="chairlift" id="_11022"/>
        <xs:enumeration value="fishing pier" id="_11023"/>
        <xs:enumeration value="telephone" id="_11025"/>
        <xs:enumeration value="railroad cross buck" id="_11024"/>
        <xs:enumeration value="horn" id="_11048"/>
        <xs:enumeration value="train" id="_11047"/>
        <xs:enumeration value="deer" id="_11049"/>
        <xs:enumeration value="horse" id="_11051"/>
        <xs:enumeration value="cattle" id="_11050"/>
        <xs:enumeration value="golf cart" id="_11052"/>
        <xs:enumeration value="services" id="_11056"/>
        <xs:enumeration value="motorist services" id="_11059"/>
        <xs:enumeration value="food services" id="_11053"/>
        <xs:enumeration value="roadside table" id="_11055"/>
        <xs:enumeration value="ambulance staging point" id="_11054"/>
        <xs:enumeration value="fallout" id="_11026"/>
        <xs:enumeration value="medical" id="_11027"/>
        <xs:enumeration value="chemical" id="_11028"/>
        <xs:enumeration value="welfare" id="_11029"/>
        <xs:enumeration value="decontamination" id="_11063"/>
        <xs:enumeration value="evacuation" id="_11030"/>
        <xs:enumeration value="registration" id="_11062"/>
        <xs:enumeration value="emergency" id="_11064"/>
        <xs:enumeration value="left arrow signal" id="_11031"/>
        <xs:enumeration value="ahead arrow signal" id="_11032"/>
        <xs:enumeration value="right arrow signal" id="_11033"/>
        <xs:enumeration value="green light signal" id="_11034"/>
        <xs:enumeration value="green arrow signal" id="_11035"/>
        <xs:enumeration value="yellow light signal" id="_11036"/>
        <xs:enumeration value="yellow arrow signal" id="_11037"/>
        <xs:enumeration value="red light signal" id="_11038"/>
        <xs:enumeration value="red arrow signal" id="_11039"/>
        <xs:enumeration value="extended green signal" id="_11040"/>
        <xs:enumeration value="advance arrow signal" id="_11041"/>
        <xs:enumeration value="pedestrian Signal Stop" id="_11042"/>
        <xs:enumeration value="pedestrian Signal Caution" id="_11043"/>
        <xs:enumeration value="pedestrian Signal Walk" id="_11044"/>
        <xs:enumeration value="pedestrian Signal Light" id="_11045"/>
        <xs:enumeration value="pedestrian Signal Time Display" id="_11046"/>
      </xs:restriction>
    </xs:simpleType >
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:pattern value="\[.+\].*"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="local:Objects" />
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

6.24 Data Element: DE_Obstructions

Use: The ITIS enumeration list commonly referred to as "Obstructions," is assigned the upper byte value of [05] (which provides for value ranges from 1280 to 1535, inclusive). This list is formally called "Obstruction" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 40 different phrases, divided into 5 further sub-categories (the division into these sub-categories is informational only and other groupings may also be

used). The remaining 87 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 1408).

ASN.1 Representation:
```
Obstruction ::= ENUMERATED  {
    -- General
    obstruction-on-roadway           (1281),
    object-on-roadway                (1282),
    objects-falling-from-moving-vehicle (1283),
    debris-on-roadway                (1284),
    storm-damage                     (1285),
    -- People
    people-on-roadway                (1286),
    bicyclists-on-roadway            (1287),
    sightseers-obstructing-access    (1288),
    large-numbers-of-visitors        (1289),
    -- Animals
    animal-on-roadway                (1290),
    large-animal-on-roadway          (1291),
    herd-of-animals-on-roadway       (1292),
    animal-struck                    (1293),
    -- Specific Items
    advertising-signs                (1315),  -- Used for illegal signage as well
    fallen-trees                     (1294),
    over-turned-trees                (1311),
    tree-limbs                       (1312),
    utility-pole-down                (1314),
    downed-power-lines               (1295),  -- Alternative Rendering:  fallen power
                                              -- lines
    downed-cables                    (1296),  -- Alternative Rendering:  fallen cables
    subsidence                       (1297),  -- Alternative Rendering: road collapse
    road-surface-collapse            (1298),
    frost-jacking                    (1317),  -- A unique Alaska problem caused by
                                              -- culverts or other features jacking out
                                              -- of ground due to freezing
    frost-heave                      (1316),  -- A large standing wave of soil under
                                              -- pavement due to frost action
    pavement-buckled                 (1299),
    pothole                          (1300),
    flooding                         (1301),
    broken-water-main                (1302),
    collapsed-sewer                  (1303),
    wash-out                         (1319),  -- What can happen to roads
    washboard                        (1318),  -- A term for rough road or unpaved roads
    sewer-overflow                   (1304),
    gas-leak                         (1305),
    snowmelt                         (1306),  -- Hint: Typically used as a cause
    mudslide                         (1307),
    avalanche                        (1308),  -- Possibly a disaster as well
    rockfall                         (1309),
    landslide                        (1310),
    -- Cancel Types
    clearance-work                   (1406),
    obstruction-cleared              (1407),
    ... -- # LOCAL_CONTENT_ITIS
    }
    -- note singular spelling
```

XML Representation:
```
<xs:simpleType name="Obstruction" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1280"/>
                <xs:maxInclusive value="1535"/>
            </xs:restriction>
        </xs:simpleType>
```

```
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="obstruction on roadway" id="_1281"/>
              <xs:enumeration value="object on roadway" id="_1282"/>
              <xs:enumeration value="objects falling from moving vehicle" id="_1283"/>
              <xs:enumeration value="debris on roadway" id="_1284"/>
              <xs:enumeration value="storm damage" id="_1285"/>
              <xs:enumeration value="people on roadway" id="_1286"/>
              <xs:enumeration value="bicyclists on roadway" id="_1287"/>
              <xs:enumeration value="sightseers obstructing access" id="_1288"/>
              <xs:enumeration value="large numbers of visitors" id="_1289"/>
              <xs:enumeration value="animal on roadway" id="_1290"/>
              <xs:enumeration value="large animal on roadway" id="_1291"/>
              <xs:enumeration value="herd of animals on roadway" id="_1292"/>
              <xs:enumeration value="animal struck" id="_1293"/>
              <xs:enumeration value="advertising signs" id="_1315"/>
              <xs:enumeration value="fallen trees" id="_1294"/>
              <xs:enumeration value="over turned trees" id="_1311"/>
              <xs:enumeration value="tree limbs" id="_1312"/>
              <xs:enumeration value="utility pole down" id="_1314"/>
              <xs:enumeration value="downed power lines" id="_1295"/>
              <xs:enumeration value="downed cables" id="_1296"/>
              <xs:enumeration value="subsidence" id="_1297"/>
              <xs:enumeration value="road surface collapse" id="_1298"/>
              <xs:enumeration value="frost jacking" id="_1317"/>
              <xs:enumeration value="frost heave" id="_1316"/>
              <xs:enumeration value="pavement buckled" id="_1299"/>
              <xs:enumeration value="pothole" id="_1300"/>
              <xs:enumeration value="flooding" id="_1301"/>
              <xs:enumeration value="broken water main" id="_1302"/>
              <xs:enumeration value="collapsed sewer" id="_1303"/>
              <xs:enumeration value="wash out" id="_1319"/>
              <xs:enumeration value="washboard" id="_1318"/>
              <xs:enumeration value="sewer overflow" id="_1304"/>
              <xs:enumeration value="gas leak" id="_1305"/>
              <xs:enumeration value="snowmelt" id="_1306"/>
              <xs:enumeration value="mudslide" id="_1307"/>
              <xs:enumeration value="avalanche" id="_1308"/>
              <xs:enumeration value="rockfall" id="_1309"/>
              <xs:enumeration value="landslide" id="_1310"/>
              <xs:enumeration value="clearance work" id="_1406"/>
              <xs:enumeration value="obstruction cleared" id="_1407"/>
           </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:pattern value="\[.+\].*"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="local:Obstruction" />
        </xs:simpleType>
     </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.25 Data Element: DE_Parking Information

Use: The ITIS enumeration list commonly referred to as "Parking Information," is assigned the upper byte value of [16] (which provides for value ranges from 4096 to 4351, inclusive). This list is formally called "ParkingInformation" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 34 different phrases, divided into 2 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 93 values up to the lower byte value of [127] are reserved for additional "national"

phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 4224).

ASN.1 Representation:

```
ParkingInformation ::= ENUMERATED  {
   normal-parking-restrictions-lifted    (4097),    -- Hint: used when a PARKING
                                                     -- restriction is lifted (overnight
                                                     -- parking allowed during event)  Not
                                                     -- to be used as a default for this
                                                     -- category
   parking-meter-restrictions-lifted     (4098),    -- Hint: used when a METER restriction
                                                     -- is lifted (metered parking free
                                                     -- during event)
   special-parking-restrictions-in-force (4099),
   full-parking-lot                      (4100),
   full-parking-garage                   (4101),
   all-parking-lots-full                 (4102),
   no-parking-spaces-available           (4103),
   only-a-few-spaces-available           (4104),
   spaces-available                      (4105),    -- Typically preceded by a # value
   no-parking                            (4106),    -- Typically followed by restriction
                                                     -- data
   parking-on-one-side-of-street-only    (4107),
   parking-on-both-sides-of-street       (4108),
   parallel-parking-only                 (4109),
   parking-meters-not-available          (4110),
   use-of-parking-meters-restricted      (4111),
   event-parking                         (4112),
   handicapped-parking                   (4113),
   long-term-parking                     (4114),
   overnight-parking                     (4115),
   short-term-parking                    (4116),
   parking-by-permit-only                (4117),
   emergency-parking-only                (4118),    -- NEW:
   emergency-stopping-only               (4119),    -- NEW:
   parking                               (4120),    -- NEW:   Typically followed by
                                                     -- restriction data
   stopping                              (4121),    -- NEW:   Typically followed by
                                                     -- restriction data
   standing                              (4122),    -- NEW:   Typically followed by
                                                     -- restriction data
   tow-away-zone                         (4123),    -- NEW:
   school-zone                           (4124),    -- NEW:   Treat as Speed Limit, with
                                                     -- details to follow
   speed-zone                            (4125),    -- NEW:   Treat as Speed Limit, with
                                                     -- details to follow
   loading-zone                          (4126),    -- NEW:   Typically followed by
                                                     -- restriction data
   state-law                             (4127),    -- NEW:
   -- Cancel Types
   van-accessible                        (4128),    -- NEW:
   special-parking-restrictions-lifted   (4222),
   no-parking-information-available      (4223),
   ...  -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:

```
<xs:simpleType name="ParkingInformation" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="4096"/>
              <xs:maxInclusive value="4351"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="normal parking restrictions lifted" id="_4097"/>
```

```
              <xs:enumeration value="parking meter restrictions lifted" id="_4098"/>
              <xs:enumeration value="special parking restrictions in force" id="_4099"/>
              <xs:enumeration value="full parking lot" id="_4100"/>
              <xs:enumeration value="full parking garage" id="_4101"/>
              <xs:enumeration value="all parking lots full" id="_4102"/>
              <xs:enumeration value="no parking spaces available" id="_4103"/>
              <xs:enumeration value="only a few spaces available" id="_4104"/>
              <xs:enumeration value="spaces available" id="_4105"/>
              <xs:enumeration value="no parking" id="_4106"/>
              <xs:enumeration value="parking on one side of street only" id="_4107"/>
              <xs:enumeration value="parking on both sides of street" id="_4108"/>
              <xs:enumeration value="parallel parking only" id="_4109"/>
              <xs:enumeration value="parking meters not available" id="_4110"/>
              <xs:enumeration value="use of parking meters restricted" id="_4111"/>
              <xs:enumeration value="event parking" id="_4112"/>
              <xs:enumeration value="handicapped parking" id="_4113"/>
              <xs:enumeration value="long term parking" id="_4114"/>
              <xs:enumeration value="overnight parking" id="_4115"/>
              <xs:enumeration value="short term parking" id="_4116"/>
              <xs:enumeration value="parking by permit only" id="_4117"/>
              <xs:enumeration value="emergency parking only" id="_4118"/>
              <xs:enumeration value="emergency stopping only" id="_4119"/>
              <xs:enumeration value="parking" id="_4120"/>
              <xs:enumeration value="stopping" id="_4121"/>
              <xs:enumeration value="standing" id="_4122"/>
              <xs:enumeration value="tow away zone" id="_4123"/>
              <xs:enumeration value="school zone" id="_4124"/>
              <xs:enumeration value="speed zone" id="_4125"/>
              <xs:enumeration value="loading zone" id="_4126"/>
              <xs:enumeration value="state law" id="_4127"/>
              <xs:enumeration value="van accessible" id="_4128"/>
              <xs:enumeration value="special parking restrictions lifted" id="_4222"/>
              <xs:enumeration value="no parking information available" id="_4223"/>
           </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:pattern value="\[.+\].*"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="local:ParkingInformation" />
        </xs:simpleType>
     </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.26 Data Element: DE_Pavement Conditions

Use: The ITIS enumeration list commonly referred to as "Pavement Conditions," is assigned the upper byte value of [23] (which provides for value ranges from 5888 to 6143, inclusive). This list is formally called "PavementConditions" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 55 different phrases, divided into 5 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 72 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 6016).

ASN.1 Representation:
```
PavementConditions ::= ENUMERATED  {
   -- General
   impassable                  (5889),
   almost-impassable           (5890),
```

```
    passable-with-care            (5891),
    passable                      (5892),
    surface-water-hazard          (5893),
    danger-of-hydroplaning        (5894),
    wet-pavement                  (5895),
    treated-pavement              (5896),   -- Alternative Rendering:  chemical wet
    slippery                      (5897),
    low-ground-clearance          (5938),   -- NEW: Use for W12-2 types
    at-grade-level-crossnig       (5937),   -- NEW:
    -- On Roadway items
    mud-on-roadway                (5898),
    leaves-on-roadway             (5899),
    loose-sand-on-roadway         (5900),
    loose-gravel                  (5901),
    fuel-on-roadway               (5902),
    oil-on-roadway                (5903),
    road-surface-in-poor-condition (5904),
    melting-tar                   (5905),
    uneven-lanes                  (5935),   -- NEW:
    rough-road                    (5931),   -- NEW:
    rough-crossing                (5936),   -- NEW: Typically used with grade crossings at
                                            -- rails
    -- Ice & Snow
    ice                           (5906),
    icy-patches                   (5907),
    black-ice                     (5908),
    ice-pellets-on-roadway        (5909),
    ice-build-up                  (5910),
    freezing-rain                 (5911),
    wet-and-icy-roads             (5912),
    slush                         (5914),
    melting-snow                  (5913),
    frozen-slush                  (5915),
    snow-on-roadway               (5916),
    packed-snow                   (5917),
    packed-snow-patches           (5918),
    plowed-snow                   (5919),
    wet-snow                      (5920),
    fresh-snow                    (5921),
    powder-snow                   (5922),
    granular-snow                 (5923),
    frozen-snow                   (5924),
    crusted-snow                  (5925),
    deep-snow                     (5926),
    snow-drifts                   (5927),
    drifting-snow                 (5928),
    expected-snow-accumulation    (5929),
    current-snow-accumulation     (5930),
    -- Road Surface
    sand                          (5932),   -- NEW: Can use for W7-4d
    gravel                        (5933),   -- NEW: Can use for W7-4e
    paved                         (5934),   -- NEW: Can use for W7-4f
    -- Cancel Types
    dry-pavement                  (6011),
    snow-cleared                  (6012),
    pavement-conditions-improved  (6013),
    skid-hazard-reduced           (6014),
    pavement-conditions-cleared   (6015),
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:

```
<xs:simpleType name="PavementConditions" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="5888"/>
              <xs:maxInclusive value="6143"/>
           </xs:restriction>
        </xs:simpleType>
```

```
<xs:simpleType>
   <xs:restriction base="xs:string">
      <xs:enumeration value="impassable" id="_5889"/>
      <xs:enumeration value="almost impassable" id="_5890"/>
      <xs:enumeration value="passable with care" id="_5891"/>
      <xs:enumeration value="passable" id="_5892"/>
      <xs:enumeration value="surface water hazard" id="_5893"/>
      <xs:enumeration value="danger of hydroplaning" id="_5894"/>
      <xs:enumeration value="wet pavement" id="_5895"/>
      <xs:enumeration value="treated pavement" id="_5896"/>
      <xs:enumeration value="slippery" id="_5897"/>
      <xs:enumeration value="low ground clearance" id="_5938"/>
      <xs:enumeration value="at grade level crossnig" id="_5937"/>
      <xs:enumeration value="mud on roadway" id="_5898"/>
      <xs:enumeration value="leaves on roadway" id="_5899"/>
      <xs:enumeration value="loose sand on roadway" id="_5900"/>
      <xs:enumeration value="loose gravel" id="_5901"/>
      <xs:enumeration value="fuel on roadway" id="_5902"/>
      <xs:enumeration value="oil on roadway" id="_5903"/>
      <xs:enumeration value="road surface in poor condition" id="_5904"/>
      <xs:enumeration value="melting tar" id="_5905"/>
      <xs:enumeration value="uneven lanes" id="_5935"/>
      <xs:enumeration value="rough road" id="_5931"/>
      <xs:enumeration value="rough crossing" id="_5936"/>
      <xs:enumeration value="ice" id="_5906"/>
      <xs:enumeration value="icy patches" id="_5907"/>
      <xs:enumeration value="black ice" id="_5908"/>
      <xs:enumeration value="ice pellets on roadway" id="_5909"/>
      <xs:enumeration value="ice build up" id="_5910"/>
      <xs:enumeration value="freezing rain" id="_5911"/>
      <xs:enumeration value="wet and icy roads" id="_5912"/>
      <xs:enumeration value="slush" id="_5914"/>
      <xs:enumeration value="melting snow" id="_5913"/>
      <xs:enumeration value="frozen slush" id="_5915"/>
      <xs:enumeration value="snow on roadway" id="_5916"/>
      <xs:enumeration value="packed snow" id="_5917"/>
      <xs:enumeration value="packed snow patches" id="_5918"/>
      <xs:enumeration value="plowed snow" id="_5919"/>
      <xs:enumeration value="wet snow" id="_5920"/>
      <xs:enumeration value="fresh snow" id="_5921"/>
      <xs:enumeration value="powder snow" id="_5922"/>
      <xs:enumeration value="granular snow" id="_5923"/>
      <xs:enumeration value="frozen snow" id="_5924"/>
      <xs:enumeration value="crusted snow" id="_5925"/>
      <xs:enumeration value="deep snow" id="_5926"/>
      <xs:enumeration value="snow drifts" id="_5927"/>
      <xs:enumeration value="drifting snow" id="_5928"/>
      <xs:enumeration value="expected snow accumulation" id="_5929"/>
      <xs:enumeration value="current snow accumulation" id="_5930"/>
      <xs:enumeration value="sand" id="_5932"/>
      <xs:enumeration value="gravel" id="_5933"/>
      <xs:enumeration value="paved" id="_5934"/>
      <xs:enumeration value="dry pavement" id="_6011"/>
      <xs:enumeration value="snow cleared" id="_6012"/>
      <xs:enumeration value="pavement conditions improved" id="_6013"/>
      <xs:enumeration value="skid hazard reduced" id="_6014"/>
      <xs:enumeration value="pavement conditions cleared" id="_6015"/>
   </xs:restriction>
</xs:simpleType >
<xs:simpleType>
   <xs:restriction base="xs:string">
      <xs:pattern value="\[.+\].*"/>
   </xs:restriction>
</xs:simpleType>
<xs:simpleType>
   <xs:restriction base="local:PavementConditions" />
</xs:simpleType>
      </xs:union>
</xs:simpleType>
```

- 140 -

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.27 Data Element: DE_Precipitation

Use: The ITIS enumeration list commonly referred to as "Precipitation," is assigned the upper byte value of [19] (which provides for value ranges from 4864 to 5119, inclusive). This list is formally called "Precipitation" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 26 different phrases, divided into 2 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 101 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 4992).

ASN.1 Representation:
```
Precipitation ::= ENUMERATED  {
   severe-weather           (4865),
   blizzard                 (4866),
   heavy-snow               (4867),
   snow                     (4868),
   light-snow               (4869),
   snow-showers             (4870),
   winter-storm             (4871),
   ice-glaze                (4872),
   heavy-frost              (4873),
   frost                    (4874),
   ice-storm                (4875),
   sleet                    (4876),
   rain-and-snow-mixed      (4877),
   rain-changing-to-snow    (4878),
   damaging-hail            (4879),
   hail                     (4880),
   thunderstorms            (4881),
   thundershowers           (4882),
   extremely-heavy-downpour (4883),
   heavy-rain               (4884),
   rain                     (4885),
   light-rain               (4886),
   drizzle                  (4887),
   showers                  (4888),
   dew                      (4889),
   -- Cancel Types
   precipitation-cleared    (4991),
   ... -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:
```
<xs:simpleType name="Precipitation" >
     <xs:union>
         <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
               <xs:minInclusive value="4864"/>
               <xs:maxInclusive value="5119"/>
            </xs:restriction>
         </xs:simpleType>
         <xs:simpleType>
            <xs:restriction base="xs:string">
               <xs:enumeration value="severe weather" id="_4865"/>
               <xs:enumeration value="blizzard" id="_4866"/>
               <xs:enumeration value="heavy snow" id="_4867"/>
               <xs:enumeration value="snow" id="_4868"/>
               <xs:enumeration value="light snow" id="_4869"/>
               <xs:enumeration value="snow showers" id="_4870"/>
               <xs:enumeration value="winter storm" id="_4871"/>
```

```
                    <xs:enumeration value="ice glaze" id="_4872"/>
                    <xs:enumeration value="heavy frost" id="_4873"/>
                    <xs:enumeration value="frost" id="_4874"/>
                    <xs:enumeration value="ice storm" id="_4875"/>
                    <xs:enumeration value="sleet" id="_4876"/>
                    <xs:enumeration value="rain and snow mixed" id="_4877"/>
                    <xs:enumeration value="rain changing to snow" id="_4878"/>
                    <xs:enumeration value="damaging hail" id="_4879"/>
                    <xs:enumeration value="hail" id="_4880"/>
                    <xs:enumeration value="thunderstorms" id="_4881"/>
                    <xs:enumeration value="thundershowers" id="_4882"/>
                    <xs:enumeration value="extremely heavy downpour" id="_4883"/>
                    <xs:enumeration value="heavy rain" id="_4884"/>
                    <xs:enumeration value="rain" id="_4885"/>
                    <xs:enumeration value="light rain" id="_4886"/>
                    <xs:enumeration value="drizzle" id="_4887"/>
                    <xs:enumeration value="showers" id="_4888"/>
                    <xs:enumeration value="dew" id="_4889"/>
                    <xs:enumeration value="precipitation cleared" id="_4991"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:Precipitation" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.28 Data Element: DE_Qualifiers

Use: The ITIS enumeration list commonly referred to as "Qualifiers," is assigned the upper byte value of [30] (which provides for value ranges from 7680 to 7935, inclusive). This list is formally called "Qualifiers" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 83 different phrases, divided into 6 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 44 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 7808).

ASN.1 Representation:
```
Qualifiers ::= ENUMERATED  {
   -- Locations
   above                    (7681),   -- Not to be used as the default for this category
   below                    (7682),
   in                       (7683),
   around                   (7684),
   after                    (7685),
   before                   (7686),
   at                       (7687),   -- Hint: used in conjunction with generic locations
   on                       (7688),   -- Hint: used in conjunction with "roadway" or
                                      -- other terms for both places (on-shoulder) and
                                      -- events (on-green)
   near                     (7689),   -- Hint: used with generic locations and lanes
   from-the                 (7690),
   terminal                 (7691),
   -- Weather Related
   falling-slowly           (7692),
   falling                  (7693),
```

```
falling-quickly        (7694),
rising-slowly          (7695),
rising                 (7696),
rising-quickly         (7697),
steady                 (7698),
likely                 (7699),
changing-to            (7700),
mostly                 (7701),
partly                 (7702),
minus                  (7703),
weather-ended          (7704),
expected               (7705),
low                    (7706),  -- Typically used in temperatures. See also "upper"
mid                    (7707),
high                   (7708),
upper                  (7709),  -- Typically used in temperatures. See also "low"
unseasonably           (7710),
reported               (7711),
-- Instructions
advice                 (7712),
due-to                 (7713),
proceed-to             (7714),
transferred-to         (7715),
use                    (7716),
-- Prepositional Use
affecting              (7717),
blocking               (7718),
connecting             (7719),
finished               (7720),  -- Alt term: finsh
for                    (7721),
or                     (7722),
-- Other
and                    (7723),
later                  (7724),
level                  (7725),
shortly                (7726),
soon                   (7727),
service                (7728),
graffiti               (7733),
damaged                (7729),
out-of-order           (7730),  -- See Asset Status items as well
on-State-right-of-way  (7732),
found-property         (7734),
vandalism              (7731),
-- MUTCD Sign Usage
begin-time             (7735),  -- NEW:  Typically followed by a value entry and a
                                -- time entry (AM/PM)
added                  (7736),  -- NEW:  Typically preceded by an object entry
end-time               (7737),  -- NEW:  Typically followed by a value entry and a
                                -- time entry (AM/PM)
no                     (7738),  -- NEW:  Typically followed by a value entry and
                                -- any day/time limits
do-not                 (7739),  -- NEW: Also used for "does not"
block                  (7740),  -- NEW: Also used for blocks
except                 (7741),  -- NEW:  Typically followed by a value entry and a
                                -- day/time entry
day                    (7742),  -- NEW: Alt: daytime, daylight hours
night                  (7743),  -- NEW: Alt: night time, night time hours
any-time               (7744),  -- NEW: Used also for "allowed"
has                    (7745),  -- NEW: As in: has green (alt form: with)
must                   (7757),  -- NEW: As in: <lane> must <turn>
may-have               (7746),  -- NEW: As in: may have green
may-excced             (7759),  -- NEW: As in: may exceed 80 mph
only                   (7747),  -- NEW:
lifted                 (7748),  -- NEW: As in gate lifted
empty                  (7749),  -- NEW:
turning                (7750),  -- NEW: Used also for turns or turn
u-turn                 (7751),  -- NEW: As in no u-turn allowed
wait-for               (7752),  -- NEW:
when-flashing          (7753),  -- NEW:
duration               (7754),  -- NEW:  Typically followed by a value entry and a
```

```
                                        -- time entry (Days/Hours/Min)
cross                      (7755),  -- NEW:
when-wet                   (7756),  -- NEW:
oncoming                   (7758),  -- NEW: Typically followed by object or vehicle
                                    -- types
to-request                 (7760),  -- NEW:  As in to request X do Y
exempt                     (7761),  -- NEW:
skewed                     (7762),  -- NEW:
when-children-are-present (7763),  -- NEW: Use for S4-2
... -- # LOCAL_CONTENT_ITIS
}
-- Modifiers and parts of sentences
```

XML Representation:

```
<xs:simpleType name="Qualifiers" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="7680"/>
                <xs:maxInclusive value="7935"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="above" id="_7681"/>
                <xs:enumeration value="below" id="_7682"/>
                <xs:enumeration value="in" id="_7683"/>
                <xs:enumeration value="around" id="_7684"/>
                <xs:enumeration value="after" id="_7685"/>
                <xs:enumeration value="before" id="_7686"/>
                <xs:enumeration value="at" id="_7687"/>
                <xs:enumeration value="on" id="_7688"/>
                <xs:enumeration value="near" id="_7689"/>
                <xs:enumeration value="from the" id="_7690"/>
                <xs:enumeration value="terminal" id="_7691"/>
                <xs:enumeration value="falling slowly" id="_7692"/>
                <xs:enumeration value="falling" id="_7693"/>
                <xs:enumeration value="falling quickly" id="_7694"/>
                <xs:enumeration value="rising slowly" id="_7695"/>
                <xs:enumeration value="rising" id="_7696"/>
                <xs:enumeration value="rising quickly" id="_7697"/>
                <xs:enumeration value="steady" id="_7698"/>
                <xs:enumeration value="likely" id="_7699"/>
                <xs:enumeration value="changing to" id="_7700"/>
                <xs:enumeration value="mostly" id="_7701"/>
                <xs:enumeration value="partly" id="_7702"/>
                <xs:enumeration value="minus" id="_7703"/>
                <xs:enumeration value="weather ended" id="_7704"/>
                <xs:enumeration value="expected" id="_7705"/>
                <xs:enumeration value="low" id="_7706"/>
                <xs:enumeration value="mid" id="_7707"/>
                <xs:enumeration value="high" id="_7708"/>
                <xs:enumeration value="upper" id="_7709"/>
                <xs:enumeration value="unseasonably" id="_7710"/>
                <xs:enumeration value="reported" id="_7711"/>
                <xs:enumeration value="advice" id="_7712"/>
                <xs:enumeration value="due to" id="_7713"/>
                <xs:enumeration value="proceed to" id="_7714"/>
                <xs:enumeration value="transferred to" id="_7715"/>
                <xs:enumeration value="use" id="_7716"/>
                <xs:enumeration value="affecting" id="_7717"/>
                <xs:enumeration value="blocking" id="_7718"/>
                <xs:enumeration value="connecting" id="_7719"/>
                <xs:enumeration value="finished" id="_7720"/>
                <xs:enumeration value="for" id="_7721"/>
                <xs:enumeration value="or" id="_7722"/>
                <xs:enumeration value="and" id="_7723"/>
                <xs:enumeration value="later" id="_7724"/>
                <xs:enumeration value="level" id="_7725"/>
                <xs:enumeration value="shortly" id="_7726"/>
```

```
              <xs:enumeration value="soon" id="_7727"/>
              <xs:enumeration value="service" id="_7728"/>
              <xs:enumeration value="graffiti" id="_7733"/>
              <xs:enumeration value="damaged" id="_7729"/>
              <xs:enumeration value="out of order" id="_7730"/>
              <xs:enumeration value="on State right of way" id="_7732"/>
              <xs:enumeration value="found property" id="_7734"/>
              <xs:enumeration value="vandalism" id="_7731"/>
              <xs:enumeration value="begin time" id="_7735"/>
              <xs:enumeration value="added" id="_7736"/>
              <xs:enumeration value="end time" id="_7737"/>
              <xs:enumeration value="no" id="_7738"/>
              <xs:enumeration value="do not" id="_7739"/>
              <xs:enumeration value="block" id="_7740"/>
              <xs:enumeration value="except" id="_7741"/>
              <xs:enumeration value="day" id="_7742"/>
              <xs:enumeration value="night" id="_7743"/>
              <xs:enumeration value="any time" id="_7744"/>
              <xs:enumeration value="has" id="_7745"/>
              <xs:enumeration value="must" id="_7757"/>
              <xs:enumeration value="may have" id="_7746"/>
              <xs:enumeration value="may excced" id="_7759"/>
              <xs:enumeration value="only" id="_7747"/>
              <xs:enumeration value="lifted" id="_7748"/>
              <xs:enumeration value="empty" id="_7749"/>
              <xs:enumeration value="turning" id="_7750"/>
              <xs:enumeration value="u turn" id="_7751"/>
              <xs:enumeration value="wait for" id="_7752"/>
              <xs:enumeration value="when flashing" id="_7753"/>
              <xs:enumeration value="duration" id="_7754"/>
              <xs:enumeration value="cross" id="_7755"/>
              <xs:enumeration value="when wet" id="_7756"/>
              <xs:enumeration value="oncoming" id="_7758"/>
              <xs:enumeration value="to request" id="_7760"/>
              <xs:enumeration value="exempt" id="_7761"/>
              <xs:enumeration value="skewed" id="_7762"/>
              <xs:enumeration value="when children are present" id="_7763"/>
          </xs:restriction>
      </xs:simpleType >
      <xs:simpleType>
          <xs:restriction base="xs:string">
              <xs:pattern value="\[.+\].*"/>
          </xs:restriction>
      </xs:simpleType>
      <xs:simpleType>
          <xs:restriction base="local:Qualifiers" />
      </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

6.29 Data Element: DE_Recreational Objects And Activities

Use: The ITIS enumeration list commonly referred to as "Recreational Objects And Activities," is assigned the upper byte value of [47] (which provides for value ranges from 12032 to 12287, inclusive). This list is formally called "RecreationalObjectsAndActivities" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 63 different phrases, divided into 3 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 64 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 12160).

ASN.1 Representation:
```
RecreationalObjectsAndActivities ::= ENUMERATED  {
    -- General Items
    bear-veiwing-area           (12033),  -- NEW: RG-020
```

```
    deer-viewing-area           (12034),  -- NEW: RG-040
    drinking-water              (12035),  -- NEW: RG-050
    environmental-study-area    (12036),  -- NEW: RG-060
    falling-rocks               (12037),  -- NEW: RG-070 See also ITIS code: Rockfall
                                          -- 1309
    firearms                    (12038),  -- NEW: RG-080
    leashed-pets                (12039),  -- NEW: RG-110
    point-of-interest           (12040),  -- NEW: RG-160
    smoking                     (12041),  -- NEW: RG-180
    dog                         (12042),  -- NEW: RG-240
    tent-camping                (12043),  -- NEW: RM-010
    trailer-camping             (12044),  -- NEW: RM-020
    first-aid                   (12045),  -- NEW: RM-040
    handicapped                 (12046),  -- NEW: RM-080
    mechanic                    (12047),  -- NEW: RM-100
    trailer-sanitary-station    (12048),  -- NEW: RM-160   Alt: Trailer Waste Station
    viewing-area                (12049),  -- NEW: RM-170
    scenic-overlook             (12095),  -- NEW: For D6-2
    campfire                    (12050),  -- NEW: RA-030
    locker                      (12051),  -- NEW: RA-070
    sleeping                    (12052),  -- NEW: RA-110 As in Sleeping Shelter
    trail                       (12053),  -- NEW: RA-120 As in Trail Shelter
    climbing                    (12054),  -- NEW: RL-020
    rock-climbing               (12055),  -- NEW: RL-030
    hunting                     (12056),  -- NEW: RL-040
    playground                  (12057),  -- NEW: RL-050
    rock-collecting             (12058),  -- NEW: RL-060
    spelunking                  (12059),  -- NEW: RL-070
    bicycle-trail               (12060),  -- NEW: RL-090
    hiking-trail                (12061),  -- NEW: RL-100
    horse-trail                 (12062),  -- NEW: RL-110
    trail-interpretive-auto     (12063),  -- NEW: RL-120
    trail-interpretive-pedestrian (12064), -- NEW: RL-130
    trail-road-for-4WD-vehicles (12065),  -- NEW: RL-140
    trail-for-trail-bikes       (12066),  -- NEW: RL-150
    archer                      (12067),  -- NEW: RL-190
    hang-glider                 (12068),  -- NEW: RL-210
    -- Water Related
    boat-tours                  (12069),  -- NEW: RW-010
    canoeing                    (12070),  -- NEW: RW-020
    diving                      (12071),  -- NEW: RW-030
    scuba-diving                (12072),  -- NEW: RW-040
    fishing                     (12073),  -- NEW: RW-050
    marine-recreation-area      (12074),  -- NEW: RW-060
    motorboating                (12075),  -- NEW: RW-070
    boat-ramp                   (12076),  -- NEW: RW-080
    rowboating                  (12077),  -- NEW: RW-090
    sailboating                 (12078),  -- NEW: RW-100
    water-skiing                (12079),  -- NEW: RW-110
    surfing                     (12080),  -- NEW: RW-120
    swimming                    (12081),  -- NEW: RW-130
    wading                      (12082),  -- NEW: RW-140
    hand-launch                 (12083),  -- NEW: RW-170
    kayak                       (12084),  -- NEW: RW-190
    wind-surf                   (12085),  -- NEW: RW-210
    -- Winter-Snow Related
    ice-skating                 (12086),  -- NEW: RS-010
    ski-jumping                 (12087),  -- NEW: RS-020
    bobbing                     (12088),  -- NEW: RS-030
    cross-country-skiing        (12089),  -- NEW: RS-040
    downhill-skiing             (12090),  -- NEW: RS-050
    sledding                    (12091),  -- NEW: RS-060
    snowmobiling                (12092),  -- NEW: RS-070
    snowshoeing                 (12093),  -- NEW: RS-080
    winter-recreation-area      (12094),  -- NEW: RS-090
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:

```
<xs:simpleType name="RecreationalObjectsAndActivities" >
```

```
<xs:union>
   <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
         <xs:minInclusive value="12032"/>
         <xs:maxInclusive value="12287"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType>
      <xs:restriction base="xs:string">
         <xs:enumeration value="bear veiwing area" id="_12033"/>
         <xs:enumeration value="deer viewing area" id="_12034"/>
         <xs:enumeration value="drinking water" id="_12035"/>
         <xs:enumeration value="environmental study area" id="_12036"/>
         <xs:enumeration value="falling rocks" id="_12037"/>
         <xs:enumeration value="firearms" id="_12038"/>
         <xs:enumeration value="leashed pets" id="_12039"/>
         <xs:enumeration value="point of interest" id="_12040"/>
         <xs:enumeration value="smoking" id="_12041"/>
         <xs:enumeration value="dog" id="_12042"/>
         <xs:enumeration value="tent camping" id="_12043"/>
         <xs:enumeration value="trailer camping" id="_12044"/>
         <xs:enumeration value="first aid" id="_12045"/>
         <xs:enumeration value="handicapped" id="_12046"/>
         <xs:enumeration value="mechanic" id="_12047"/>
         <xs:enumeration value="trailer sanitary station" id="_12048"/>
         <xs:enumeration value="viewing area" id="_12049"/>
         <xs:enumeration value="scenic overlook" id="_12095"/>
         <xs:enumeration value="campfire" id="_12050"/>
         <xs:enumeration value="locker" id="_12051"/>
         <xs:enumeration value="sleeping" id="_12052"/>
         <xs:enumeration value="trail" id="_12053"/>
         <xs:enumeration value="climbing" id="_12054"/>
         <xs:enumeration value="rock climbing" id="_12055"/>
         <xs:enumeration value="hunting" id="_12056"/>
         <xs:enumeration value="playground" id="_12057"/>
         <xs:enumeration value="rock collecting" id="_12058"/>
         <xs:enumeration value="spelunking" id="_12059"/>
         <xs:enumeration value="bicycle trail" id="_12060"/>
         <xs:enumeration value="hiking trail" id="_12061"/>
         <xs:enumeration value="horse trail" id="_12062"/>
         <xs:enumeration value="trail interpretive auto" id="_12063"/>
         <xs:enumeration value="trail interpretive pedestrian" id="_12064"/>
         <xs:enumeration value="trail road for 4WD vehicles" id="_12065"/>
         <xs:enumeration value="trail for trail bikes" id="_12066"/>
         <xs:enumeration value="archer" id="_12067"/>
         <xs:enumeration value="hang glider" id="_12068"/>
         <xs:enumeration value="boat tours" id="_12069"/>
         <xs:enumeration value="canoeing" id="_12070"/>
         <xs:enumeration value="diving" id="_12071"/>
         <xs:enumeration value="scuba diving" id="_12072"/>
         <xs:enumeration value="fishing" id="_12073"/>
         <xs:enumeration value="marine recreation area" id="_12074"/>
         <xs:enumeration value="motorboating" id="_12075"/>
         <xs:enumeration value="boat ramp" id="_12076"/>
         <xs:enumeration value="rowboating" id="_12077"/>
         <xs:enumeration value="sailboating" id="_12078"/>
         <xs:enumeration value="water skiing" id="_12079"/>
         <xs:enumeration value="surfing" id="_12080"/>
         <xs:enumeration value="swimming" id="_12081"/>
         <xs:enumeration value="wading" id="_12082"/>
         <xs:enumeration value="hand launch" id="_12083"/>
         <xs:enumeration value="kayak" id="_12084"/>
         <xs:enumeration value="wind surf" id="_12085"/>
         <xs:enumeration value="ice skating" id="_12086"/>
         <xs:enumeration value="ski jumping" id="_12087"/>
         <xs:enumeration value="bobbing" id="_12088"/>
         <xs:enumeration value="cross country skiing" id="_12089"/>
         <xs:enumeration value="downhill skiing" id="_12090"/>
         <xs:enumeration value="sledding" id="_12091"/>
         <xs:enumeration value="snowmobiling" id="_12092"/>
         <xs:enumeration value="snowshoeing" id="_12093"/>
```

```
                    <xs:enumeration value="winter recreation area" id="_12094"/>
               </xs:restriction>
          </xs:simpleType >
          <xs:simpleType>
               <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
               </xs:restriction>
          </xs:simpleType>
          <xs:simpleType>
               <xs:restriction base="local:RecreationalObjectsAndActivities" />
          </xs:simpleType>
     </xs:union>
</xs:simpleType>
```

 In addition, this item may be used by data structures in other ITS standards.

6.30 Data Element: DE_Regulatory And Warning Signs

Use: The ITIS enumeration list commonly referred to as "Regulatory And Warning Signs," is assigned the upper byte value of [48] (which provides for value ranges from 12288 to 12543, inclusive). This list is formally called "RegulatoryAndWarningSigns" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 42 different phrases, divided into 4 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 85 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 12416).

ASN.1 Representation:
```
RegulatoryAndWarningSigns ::= ENUMERATED  {
     -- MUTCD Signage Types
     regulatory-sign                      (12289),  -- NEW: Followed by sign data
     warning-sign                         (12290),  -- NEW: Followed by sign data
     information-sign                     (12291),  -- NEW: Followed by sign data
     construction-sign                    (12292),  -- NEW: Followed by sign data
     guide-sign                           (12293),  -- NEW: Followed by sign data
     -- MUCTD Basic Signs
     stop                                 (12294),  -- NEW:
     yield                                (12295),  -- NEW:
     caution                              (12330),  -- NEW:
     temporary                            (12331),  -- NEW:
     to-oncoming-traffic                  (12296),  -- NEW:
     four-way                             (12297),  -- NEW: As in 4-way stop
     all-way                              (12298),  -- NEW: All directions of travel
                                                    -- allowed or all lanes at a junction
     one-way                              (12329),  -- NEW: One direction of travel
                                                    -- allowed
     -- MUCTD Sign Fragments
     zone                                 (12299),  -- NEW: Typically preceded by type of
                                                    -- zone
     narrows                              (12300),  -- NEW: Used as an MUTCD sign,
                                                    -- typically preceded by road
     widens                               (12301),  -- NEW: Used as an MUTCD sign,
                                                    -- typically preceded by road
     reduced                              (12302),  -- NEW: Used as an MUTCD sign,
                                                    -- typically preceded by road or lane
     combined                             (12303),  -- NEW:
     minimum                              (12304),  -- NEW:
     maximum                              (12305),  -- NEW:
     divided-road                         (12306),  -- NEW: Use for divided highway as
                                                    -- well
     double-arrow                         (12307),  -- NEW:
     dead-end                             (12308),  -- NEW:
     no-outlet                            (12309),  -- NEW:
     wrong-way                            (12310),  -- NEW: R-5-1a
     do-not-enter                         (12314),  -- NEW: R-5-1
     detour                               (12312),  -- NEW: Typically followed by arrows
                                                    -- and distance
```

- 148 -

```
chevron                               (12313),  -- NEW:
-- MUCTD Intersection Graphics
t-intersection-to-the-side            (12315),  -- NEW:
t-intersection-oncoming               (12316),  -- NEW: Use for W2-4 graphic
y-intersection-to-the-side            (12317),  -- NEW:
y-intersection-oncoming               (12318),  -- NEW: Use for W2-5 graphic
four-way-divided-highway-crossing     (12319),  -- NEW: Use for R6-3 graphic
t-way-divided-highway-crossing        (12320),  -- NEW: Use for R6-3a graphic
light-rail-divided-highway-crossing   (12321),  -- NEW: Use for R15-7 graphic
light-rail-t-divided-highway-crossing (12322),  -- NEW: Use for R15-7a graphic
side-road-to-right                    (12323),  -- NEW: Use for W2-2R graphic
side-road-to-left                     (12324),  -- NEW: Use for W2-2L graphic
side-road-to-right-at-angle           (12325),  -- NEW: Use for W2-3R graphic
side-road-to-left-at-angle            (12326),  -- NEW: Use for W2-3L graphic
entering-roadway-merge                (12327),  -- NEW: Use for W4-5 graphic
entering-roadway-added-lane           (12328),  -- NEW: Use for W4-6 graphic
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:
```
<xs:simpleType name="RegulatoryAndWarningSigns" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="12288"/>
              <xs:maxInclusive value="12543"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="regulatory sign" id="_12289"/>
              <xs:enumeration value="warning sign" id="_12290"/>
              <xs:enumeration value="information sign" id="_12291"/>
              <xs:enumeration value="construction sign" id="_12292"/>
              <xs:enumeration value="guide sign" id="_12293"/>
              <xs:enumeration value="stop" id="_12294"/>
              <xs:enumeration value="yield" id="_12295"/>
              <xs:enumeration value="caution" id="_12330"/>
              <xs:enumeration value="temporary" id="_12331"/>
              <xs:enumeration value="to oncoming traffic" id="_12296"/>
              <xs:enumeration value="four way" id="_12297"/>
              <xs:enumeration value="all way" id="_12298"/>
              <xs:enumeration value="one way" id="_12329"/>
              <xs:enumeration value="zone" id="_12299"/>
              <xs:enumeration value="narrows" id="_12300"/>
              <xs:enumeration value="widens" id="_12301"/>
              <xs:enumeration value="reduced" id="_12302"/>
              <xs:enumeration value="combined" id="_12303"/>
              <xs:enumeration value="minimum" id="_12304"/>
              <xs:enumeration value="maximum" id="_12305"/>
              <xs:enumeration value="divided road" id="_12306"/>
              <xs:enumeration value="double arrow" id="_12307"/>
              <xs:enumeration value="dead end" id="_12308"/>
              <xs:enumeration value="no outlet" id="_12309"/>
              <xs:enumeration value="wrong way" id="_12310"/>
              <xs:enumeration value="do not enter" id="_12314"/>
              <xs:enumeration value="detour" id="_12312"/>
              <xs:enumeration value="chevron" id="_12313"/>
              <xs:enumeration value="t intersection to the side" id="_12315"/>
              <xs:enumeration value="t intersection oncoming" id="_12316"/>
              <xs:enumeration value="y intersection to the side" id="_12317"/>
              <xs:enumeration value="y intersection oncoming" id="_12318"/>
              <xs:enumeration value="four way divided highway crossing" id="_12319"/>
              <xs:enumeration value="t way divided highway crossing" id="_12320"/>
              <xs:enumeration value="light rail divided highway crossing" id="_12321"/>
              <xs:enumeration value="light rail t divided highway crossing"
id="_12322"/>
              <xs:enumeration value="side road to right" id="_12323"/>
              <xs:enumeration value="side road to left" id="_12324"/>
              <xs:enumeration value="side road to right at angle" id="_12325"/>
```

```
                    <xs:enumeration value="side road to left at angle" id="_12326"/>
                    <xs:enumeration value="entering roadway merge" id="_12327"/>
                    <xs:enumeration value="entering roadway added lane" id="_12328"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:RegulatoryAndWarningSigns" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.31 Data Element: DE_Regulatory Signs

Use: The ITIS enumeration list commonly refered to as "Regulatory Signs," is assigned the upper byte value of [48] (which provides for value ranges from 12288 to 12543, inclusive). This list is formally called "RegulatorySigns" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 7 different phrases. The remaining 120 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 12416).

ASN.1 Representation:
```
RegulatorySigns ::= ENUMERATED  {
    regulatory-sign (12290),   -- NEW: Sign data follows
    divided-road    (12291),   -- NEW:
    double-arrow    (12292),   -- NEW:
    dead-end        (12293),   -- NEW:
    no-outlet       (12294),   -- NEW:
    wrong-way       (12295),   -- NEW:
    pass-with-care  (12296),   -- NEW:
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:
```
<xs:simpleType name="RegulatorySigns" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="12288"/>
                <xs:maxInclusive value="12543"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="regulatory sign" id="_12290"/>
                <xs:enumeration value="divided road" id="_12291"/>
                <xs:enumeration value="double arrow" id="_12292"/>
                <xs:enumeration value="dead end" id="_12293"/>
                <xs:enumeration value="no outlet" id="_12294"/>
                <xs:enumeration value="wrong way" id="_12295"/>
                <xs:enumeration value="pass with care" id="_12296"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
```

```
                 </xs:restriction>
              </xs:simpleType>
              <xs:simpleType>
                 <xs:restriction base="local:RegulatorySigns" />
              </xs:simpleType>
       </xs:union>
</xs:simpleType>
```

 In addition, this item may be used by data structures in other ITS standards.

6.32 Data Element: DE_Responder Group Affected

Use: The ITIS enumeration list commonly referred to as "Responder Group Affected," is assigned the upper byte value of [38] (which provides for value ranges from 9728 to 9983, inclusive). This list is formally called "ResponderGroupAffected" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 15 different phrases. The remaining 112 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 9856).

ASN.1 Representation:
```
ResponderGroupAffected ::= ENUMERATED  {
    emergency-vehicle-units             (9729),  -- Default phrase, to be used when one of
                                                 -- the below does not fit better
    federal-law-enforcement-units       (9730),
    state-police-units                  (9731),
    county-police-units                 (9732),  -- Hint: also sheriff response units
    local-police-units                  (9733),
    ambulance-units                     (9734),
    rescue-units                        (9735),
    fire-units                          (9736),
    hAZMAT-units                        (9737),  -- Any vehcile assigned to HAZMAT duties
    light-tow-unit                      (9738),
    heavy-tow-unit                      (9739)
    private-tow-units                   (9743),  -- NEW: For 3rd Party tow trucks
    freeway-service-patrols             (9740),
    transportation-response-units       (9741),
    private-contractor-response-units   (9742),
    ... -- # LOCAL_CONTENT_ITIS
    }
    -- These groups are used in coordinated response and staging area information
    -- (rather than typically consumer related)
```

XML Representation:
```
<xs:simpleType name="ResponderGroupAffected" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="9728"/>
              <xs:maxInclusive value="9983"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="emergency vehicle units" id="_9729"/>
              <xs:enumeration value="federal law enforcement units" id="_9730"/>
              <xs:enumeration value="state police units" id="_9731"/>
              <xs:enumeration value="county police units" id="_9732"/>
              <xs:enumeration value="local police units" id="_9733"/>
              <xs:enumeration value="ambulance units" id="_9734"/>
              <xs:enumeration value="rescue units" id="_9735"/>
              <xs:enumeration value="fire units" id="_9736"/>
              <xs:enumeration value="hAZMAT units" id="_9737"/>
              <xs:enumeration value="light tow unit" id="_9738"/>
              <xs:enumeration value="heavy tow unit" id="_9739"/>
              <xs:enumeration value="private tow units" id="_9743"/>
```

```
                <xs:enumeration value="freeway service patrols" id="_9740"/>
                <xs:enumeration value="transportation response units" id="_9741"/>
                <xs:enumeration value="private contractor response units" id="_9742"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:ResponderGroupAffected" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.33 Data Element: DE_Restrictions

Use: The ITIS enumeration list commonly referred to as "Restrictions," is assigned the upper byte value of
[10] (which provides for value ranges from 2560 to 2815, inclusive). This list is formally called
"RestrictionClass" in the ASN.1 and XML productions. Items from this enumeration list can be used as an
event category classification. This list contains a total of 41 different phrases, divided into 2 further sub-
categories (the division into these sub-categories is informational only and other groupings may also be
used). The remaining 86 values up to the lower byte value of [127] are reserved for additional "national"
phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128
and proceeding upward from there (in other words, the first value assigned for any local additions to this
list would be given the value 2688).

ASN.1 Representation:
```
RestrictionClass ::= ENUMERATED  {
    restrictions                                    (2561),
    ramp-restrictions                               (2562),
    truck-restriction                               (2563),
    speed-restriction                               (2564),   -- Used for required speeds,
                                                              -- not advised speeds
    noise-restriction                               (2565),
    traffic-regulations-have-been-changed           (2566),
    local-access-only                               (2567),
    no-trailers                                     (2568),
    no-high-profile-vehicles                        (2569),
    hazardous-materials-truck-restriction           (2570),
    no-through-traffic                              (2571),
    no-motor-vehicles                               (2572),
    width-limit                                     (2573),   -- Typically followed by a
                                                              -- number and unit value
    height-limit                                    (2574),   -- Typically followed by a
                                                              -- number and unit value
    length-limit                                    (2575),   -- Typically followed by a
                                                              -- number and unit value
    axle-load-limit                                 (2576),   -- Typically followed by a
                                                              -- number and unit value
    gross-weight-limit                              (2577),   -- Typically followed by a
                                                              -- number and unit value
    axle-count-limit                                (2578),   -- Typically followed by a
                                                              -- number and unit value
    carpool-lane-available                          (2579),
    carpool-restrictions-changed                    (2580),
    hOV-2-no-single-occupant-vehicles               (2581),
    hOV-3-no-vehicles-with-less-than-three-occupants (2582),
    bus-lane-available-for-all-vehicles             (2583),
    truck-lane-available-for-all-vehicles           (2584),
    permits-call-in-basis                           (2585),
    permits-temporarily-closed                      (2586),
```

```
permits-closed                                        (2587),
road-use-permits-required                             (2588),  -- NEW:
-- Cancel Types
permits-open                                          (2675),
restrictions-for-high-profile-vehicles-lifted         (2676),
width-limit-lifted                                    (2677),
height-limit-lifted                                   (2678),
length-limit-lifted                                   (2679),
axle-load-limit-lifted                                (2680),
weight-limit-lifted                                   (2681),
axle-count-limit-lifted                               (2682),
carpool-restrictions-lifted                           (2683),
lane-restrictions-lifted                              (2684),
ramp-restrictions-lifted                              (2685),
motor-vehicle-restrictions-lifted                     (2686),
restrictions-lifted                                   (2687),
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:

```
<xs:simpleType name="RestrictionClass" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="2560"/>
                <xs:maxInclusive value="2815"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="restrictions" id="_2561"/>
                <xs:enumeration value="ramp restrictions" id="_2562"/>
                <xs:enumeration value="truck restriction" id="_2563"/>
                <xs:enumeration value="speed restriction" id="_2564"/>
                <xs:enumeration value="noise restriction" id="_2565"/>
                <xs:enumeration value="traffic regulations have been changed" id="_2566"/>
                <xs:enumeration value="local access only" id="_2567"/>
                <xs:enumeration value="no trailers" id="_2568"/>
                <xs:enumeration value="no high profile vehicles" id="_2569"/>
                <xs:enumeration value="hazardous materials truck restriction" id="_2570"/>
                <xs:enumeration value="no through traffic" id="_2571"/>
                <xs:enumeration value="no motor vehicles" id="_2572"/>
                <xs:enumeration value="width limit" id="_2573"/>
                <xs:enumeration value="height limit" id="_2574"/>
                <xs:enumeration value="length limit" id="_2575"/>
                <xs:enumeration value="axle load limit" id="_2576"/>
                <xs:enumeration value="gross weight limit" id="_2577"/>
                <xs:enumeration value="axle count limit" id="_2578"/>
                <xs:enumeration value="carpool lane available" id="_2579"/>
                <xs:enumeration value="carpool restrictions changed" id="_2580"/>
                <xs:enumeration value="hOV 2 no single occupant vehicles" id="_2581"/>
                <xs:enumeration value="hOV 3 no vehicles with less than three occupants"
id="_2582"/>
                <xs:enumeration value="bus lane available for all vehicles" id="_2583"/>
                <xs:enumeration value="truck lane available for all vehicles" id="_2584"/>
                <xs:enumeration value="permits call in basis" id="_2585"/>
                <xs:enumeration value="permits temporarily closed" id="_2586"/>
                <xs:enumeration value="permits closed" id="_2587"/>
                <xs:enumeration value="road use permits required" id="_2588"/>
                <xs:enumeration value="permits open" id="_2675"/>
                <xs:enumeration value="restrictions for high profile vehicles lifted"
id="_2676"/>
                <xs:enumeration value="width limit lifted" id="_2677"/>
                <xs:enumeration value="height limit lifted" id="_2678"/>
                <xs:enumeration value="length limit lifted" id="_2679"/>
                <xs:enumeration value="axle load limit lifted" id="_2680"/>
                <xs:enumeration value="weight limit lifted" id="_2681"/>
                <xs:enumeration value="axle count limit lifted" id="_2682"/>
                <xs:enumeration value="carpool restrictions lifted" id="_2683"/>
                <xs:enumeration value="lane restrictions lifted" id="_2684"/>
```

```
                <xs:enumeration value="ramp restrictions lifted" id="_2685"/>
                <xs:enumeration value="motor vehicle restrictions lifted" id="_2686"/>
                <xs:enumeration value="restrictions lifted" id="_2687"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:RestrictionClass" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.34 Data Element: DE_Roadside Assets

Use: The ITIS enumeration list commonly referred to as "Roadside Assets," is assigned the upper byte value of [41] (which provides for value ranges from 10496 to 10751, inclusive). This list is formally called "RoadsideAssets" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 78 different phrases, divided into 4 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 49 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 10624).

ASN.1 Representation:
```
RoadsideAssets ::= ENUMERATED {
    -- Inanimate Objects
    none                    (10496),  -- Implies free text follows
    light-pole              (10497),
    utiltity-pole           (10498),
    gantry-way              (10499),
    sign-support            (10500),  -- All forms of signage
    signal-pole             (10501),
    signage-public          (10502),
    signage-private         (10503),
    overhead-sign           (10568),
    ground-sign             (10569),
    cones                   (10504),  -- Typical std height cones as per MUTCD
    cones-post-type         (10505),  -- Also called channelizer cones or delineator
                                      -- posts
    cones-glue-post         (10506),  -- For all glue-down types
    cones-other             (10507),  -- Specialty types or misc. smaller cones
    barriers                (10508),
    barrier-Aframe          (10509),  -- Sizes larger than 1.5 meters in length
    barriers-heavy-duty     (10510),  -- All types requiring equipment to place
    barricade-type-III      (10511),  -- All collapsible Type III Barricades
    barricade-small         (10512),  -- Type I and all small A frame types, also
                                      -- so-called "mini" or "narrows" types
    solid-barrier           (10565),
    moveable-barrier        (10566),
    barricade-lights        (10513),  -- Std 7" light as per ITE stds
    beacon                  (10514),  -- All types of strobe and rotating lights
    t-stand                 (10515),
    a-stand                 (10516),
    drums                   (10517),  -- Common drums and barrel types
    sand-barrel             (10567),
    impact-attenuator       (10518),  -- Water-filled and other crushable types
    barricade-tape          (10519),  -- Lettering type (legend) to be conveyed
                                      -- elsewhere
```

- 154 -

```
      safety-fence             (10520),
      temp-pavement-markings   (10521),   -- All forms of temp markings
      speed-bumps              (10522),   -- Use also for speed humps
      temp-curbs               (10523),
      parking-blocks           (10524),
      signboard-fixed          (10525),
      signboard-portable       (10526),
      stripe                   (10572),   -- NEW:
      island                   (10573),   -- NEW: Used for raised islands in median
      -- Controllable or Active Objects
      har                      (10527),   -- Transmission type not known
      har-AM                   (10528),
      har-FM                   (10529),
      har-DSRC                 (10530),
      traffic-light            (10531),   -- Also used for signalized intersections
      lane-control-signal      (10532),
      traffic-detector         (10533),
      vehicle-detector         (10534),
      system-alarm             (10535),
      arrow-board              (10536),
      fixed-VMS                (10537),
      mobile-VMS               (10538),
      ramp-control             (10539),
      gate-control             (10540),   -- Other than rail types
      temporary-traffic-light  (10541),
      over-height-warning-system (10542),
      over-weight-warning-system (10543),
      emergency-telephones     (10544),
      railroad-crossing-equipment (10545),
      tunnel-ventilation       (10546),   -- Use also for fans
      ccTV                     (10547),
      environmental-sensor     (10548),
      emergency-signal         (10570),   -- NEW:
      countdown-pedestrian-sign (10571),  -- NEW:
      -- Items Used by Rail and Transit
      switch                   (10549),   -- In the context of a railroad device
      signal                   (10550),   -- In the context of a railroad device
      third-rail               (10551),
      overhead-power           (10552),   -- Specifically the power feed line for a
                                          -- vehicle, do not use for general power lines
      concrete-tie             (10553),
      wooden-tie               (10554),
      manhole-cover            (10559),
      -- Misc. Items
      culvert                  (10560),
      escalator                (10555),
      elevator                 (10556),
      snow-poles               (10561),   -- A tall pole and overhanging arm (like a
                                          -- luminaire) with reflective markers to help
                                          -- indicate roadway in mountain passes during
                                          -- whiteout conditions
      track                    (10557),
      guide-poles              (10562),   -- Poles along road to indicate guard rail in
                                          -- deep snow
      drawbridge               (10558),
      expansion-joint          (10563),
      shifted-plate            (10564),
      ... -- # LOCAL_CONTENT_ITIS
      }
```

XML Representation:

```
<xs:simpleType name="RoadsideAssets" >
    <xs:union>
       <xs:simpleType>
          <xs:restriction base="xs:unsignedInt">
             <xs:minInclusive value="10496"/>
             <xs:maxInclusive value="10751"/>
          </xs:restriction>
       </xs:simpleType>
       <xs:simpleType>
```

```
<xs:restriction base="xs:string">
    <xs:enumeration value="none" id="_10496"/>
    <xs:enumeration value="light pole" id="_10497"/>
    <xs:enumeration value="utiltity pole" id="_10498"/>
    <xs:enumeration value="gantry way" id="_10499"/>
    <xs:enumeration value="sign support" id="_10500"/>
    <xs:enumeration value="signal pole" id="_10501"/>
    <xs:enumeration value="signage public" id="_10502"/>
    <xs:enumeration value="signage private" id="_10503"/>
    <xs:enumeration value="overhead sign" id="_10568"/>
    <xs:enumeration value="ground sign" id="_10569"/>
    <xs:enumeration value="cones" id="_10504"/>
    <xs:enumeration value="cones post type" id="_10505"/>
    <xs:enumeration value="cones glue post" id="_10506"/>
    <xs:enumeration value="cones other" id="_10507"/>
    <xs:enumeration value="barriers" id="_10508"/>
    <xs:enumeration value="barrier Aframe" id="_10509"/>
    <xs:enumeration value="barriers heavy duty" id="_10510"/>
    <xs:enumeration value="barricade type III" id="_10511"/>
    <xs:enumeration value="barricade small" id="_10512"/>
    <xs:enumeration value="solid barrier" id="_10565"/>
    <xs:enumeration value="moveable barrier" id="_10566"/>
    <xs:enumeration value="barricade lights" id="_10513"/>
    <xs:enumeration value="beacon" id="_10514"/>
    <xs:enumeration value="t stand" id="_10515"/>
    <xs:enumeration value="a stand" id="_10516"/>
    <xs:enumeration value="drums" id="_10517"/>
    <xs:enumeration value="sand barrel" id="_10567"/>
    <xs:enumeration value="impact attenuator" id="_10518"/>
    <xs:enumeration value="barricade tape" id="_10519"/>
    <xs:enumeration value="safety fence" id="_10520"/>
    <xs:enumeration value="temp pavement markings" id="_10521"/>
    <xs:enumeration value="speed bumps" id="_10522"/>
    <xs:enumeration value="temp curbs" id="_10523"/>
    <xs:enumeration value="parking blocks" id="_10524"/>
    <xs:enumeration value="signboard fixed" id="_10525"/>
    <xs:enumeration value="signboard portable" id="_10526"/>
    <xs:enumeration value="stripe" id="_10572"/>
    <xs:enumeration value="island" id="_10573"/>
    <xs:enumeration value="har" id="_10527"/>
    <xs:enumeration value="har AM" id="_10528"/>
    <xs:enumeration value="har FM" id="_10529"/>
    <xs:enumeration value="har DSRC" id="_10530"/>
    <xs:enumeration value="traffic light" id="_10531"/>
    <xs:enumeration value="lane control signal" id="_10532"/>
    <xs:enumeration value="traffic detector" id="_10533"/>
    <xs:enumeration value="vehicle detector" id="_10534"/>
    <xs:enumeration value="system alarm" id="_10535"/>
    <xs:enumeration value="arrow board" id="_10536"/>
    <xs:enumeration value="fixed VMS" id="_10537"/>
    <xs:enumeration value="mobile VMS" id="_10538"/>
    <xs:enumeration value="ramp control" id="_10539"/>
    <xs:enumeration value="gate control" id="_10540"/>
    <xs:enumeration value="temporary traffic light" id="_10541"/>
    <xs:enumeration value="over height warning system" id="_10542"/>
    <xs:enumeration value="over weight warning system" id="_10543"/>
    <xs:enumeration value="emergency telephones" id="_10544"/>
    <xs:enumeration value="railroad crossing equipment" id="_10545"/>
    <xs:enumeration value="tunnel ventilation" id="_10546"/>
    <xs:enumeration value="ccTV" id="_10547"/>
    <xs:enumeration value="environmental sensor" id="_10548"/>
    <xs:enumeration value="emergency signal" id="_10570"/>
    <xs:enumeration value="countdown pedestrian sign" id="_10571"/>
    <xs:enumeration value="switch" id="_10549"/>
    <xs:enumeration value="signal" id="_10550"/>
    <xs:enumeration value="third rail" id="_10551"/>
    <xs:enumeration value="overhead power" id="_10552"/>
    <xs:enumeration value="concrete tie" id="_10553"/>
    <xs:enumeration value="wooden tie" id="_10554"/>
    <xs:enumeration value="manhole cover" id="_10559"/>
    <xs:enumeration value="culvert" id="_10560"/>
```

```
                    <xs:enumeration value="escalator" id="_10555"/>
                    <xs:enumeration value="elevator" id="_10556"/>
                    <xs:enumeration value="snow poles" id="_10561"/>
                    <xs:enumeration value="track" id="_10557"/>
                    <xs:enumeration value="guide poles" id="_10562"/>
                    <xs:enumeration value="drawbridge" id="_10558"/>
                    <xs:enumeration value="expansion joint" id="_10563"/>
                    <xs:enumeration value="shifted plate" id="_10564"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:RoadsideAssets" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

6.35 Data Element: DE_Roadwork

Use: The ITIS enumeration list commonly referred to as "Roadwork," is assigned the upper byte value of [04] (which provides for value ranges from 1024 to 1279, inclusive). This list is formally called "Roadwork" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 44 different phrases, divided into 4 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 83 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 1152).

ASN.1 Representation:
```
Roadwork ::= ENUMERATED  {
    -- Roads
    road-construction                          (1025),  -- Alt text: Road Work
    major-road-construction                    (1026),
    long-term-road-construction                (1027),
    construction-work                          (1028),
    paving-operations                          (1029),
    work-in-the-median                         (1030),
    road-reconstruction                        (1031),
    opposing-traffic                           (1032),
    narrow-lanes                               (1033),
    construction-traffic-merging               (1034),
    single-line-traffic-alternating-directions (1035),
    road-maintenance-operations                (1036),
    road-marking-operations                    (1037),
    road-widening                              (1061),  -- Used for roadwork, not as an
                                                        -- MUTCD sign
    cracks                                     (1052),  -- Used for disjoint roadway
                                                        -- surface
    crack-REMOVE                               (1058),  -- No Longer Used. Used for
                                                        -- disjoint roadway surface
    bumps                                      (1053),  -- Used for swelling
    drop-off                                   (1059),
    storm-drain                                (1054),
    -- Bridges
    bridge-maintenance-operations              (1038),
    bridge-construction                        (1039),
    bridge-demolition-work                     (1040),
    seismic-retrofit                           (1060),  -- All types of earthquake
                                                        -- construction
    -- Other
    overgrown-grass                            (1055),
```

- 157 -

```
overgrown-brushshrubs                    (1056),
overgrown-trees                          (1057),
blasting                                 (1041),  -- See also: avalanche
avalanche-control-activities             (1042),
water-main-work                          (1043),
gas-main-work                            (1044),
work-on-underground-cables               (1045),
work-on-underground-services             (1046),
new-road-construction-layout             (1047),
new-road-layout                          (1048),
temporary-lane-markings                  (1049),
temporary-traffic-lights                 (1050),
emergency-maintenance                    (1051),
utiltity-work                            (1062),  -- NEW:
-- Cancel Types
road-maintenance-cleared                 (1146),
normal-road-layout-restored              (1147),
road-work-clearance-in-progress          (1148),
road-construction-cleared                (1149),
normal-traffic-lanes-restored            (1150),
road-work-cleared                        (1151),
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:
```xml
<xs:simpleType name="Roadwork" >
      <xs:union>
          <xs:simpleType>
              <xs:restriction base="xs:unsignedInt">
                  <xs:minInclusive value="1024"/>
                  <xs:maxInclusive value="1279"/>
              </xs:restriction>
          </xs:simpleType>
          <xs:simpleType>
              <xs:restriction base="xs:string">
                  <xs:enumeration value="road construction" id="_1025"/>
                  <xs:enumeration value="major road construction" id="_1026"/>
                  <xs:enumeration value="long term road construction" id="_1027"/>
                  <xs:enumeration value="construction work" id="_1028"/>
                  <xs:enumeration value="paving operations" id="_1029"/>
                  <xs:enumeration value="work in the median" id="_1030"/>
                  <xs:enumeration value="road reconstruction" id="_1031"/>
                  <xs:enumeration value="opposing traffic" id="_1032"/>
                  <xs:enumeration value="narrow lanes" id="_1033"/>
                  <xs:enumeration value="construction traffic merging" id="_1034"/>
                  <xs:enumeration value="single line traffic alternating directions"
id="_1035"/>
                  <xs:enumeration value="road maintenance operations" id="_1036"/>
                  <xs:enumeration value="road marking operations" id="_1037"/>
                  <xs:enumeration value="road widening" id="_1061"/>
                  <xs:enumeration value="cracks" id="_1052"/>
                  <xs:enumeration value="crack REMOVE" id="_1058"/>
                  <xs:enumeration value="bumps" id="_1053"/>
                  <xs:enumeration value="drop off" id="_1059"/>
                  <xs:enumeration value="storm drain" id="_1054"/>
                  <xs:enumeration value="bridge maintenance operations" id="_1038"/>
                  <xs:enumeration value="bridge construction" id="_1039"/>
                  <xs:enumeration value="bridge demolition work" id="_1040"/>
                  <xs:enumeration value="seismic retrofit" id="_1060"/>
                  <xs:enumeration value="overgrown grass" id="_1055"/>
                  <xs:enumeration value="overgrown brushshrubs" id="_1056"/>
                  <xs:enumeration value="overgrown trees" id="_1057"/>
                  <xs:enumeration value="blasting" id="_1041"/>
                  <xs:enumeration value="avalanche control activities" id="_1042"/>
                  <xs:enumeration value="water main work" id="_1043"/>
                  <xs:enumeration value="gas main work" id="_1044"/>
                  <xs:enumeration value="work on underground cables" id="_1045"/>
                  <xs:enumeration value="work on underground services" id="_1046"/>
                  <xs:enumeration value="new road construction layout" id="_1047"/>
                  <xs:enumeration value="new road layout" id="_1048"/>
```

```
                    <xs:enumeration value="temporary lane markings" id="_1049"/>
                    <xs:enumeration value="temporary traffic lights" id="_1050"/>
                    <xs:enumeration value="emergency maintenance" id="_1051"/>
                    <xs:enumeration value="utiltity work" id="_1062"/>
                    <xs:enumeration value="road maintenance cleared" id="_1146"/>
                    <xs:enumeration value="normal road layout restored" id="_1147"/>
                    <xs:enumeration value="road work clearance in progress" id="_1148"/>
                    <xs:enumeration value="road construction cleared" id="_1149"/>
                    <xs:enumeration value="normal traffic lanes restored" id="_1150"/>
                    <xs:enumeration value="road work cleared" id="_1151"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:Roadwork" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.36 Data Element: DE_Small Numbers

Use: The ITIS enumeration list commonly referred to as "Small Numbers," is assigned the upper byte value of [49] (which provides for value ranges from 12544 to 12799, inclusive). This list is formally called "SmallNumbers" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 255 different phrases. Also observe that this list contains more than the normal limit of 127 entries for "national" phrases. Should additional phrases need to be added to this list, then will be added starting with a value of 12800 and proceeding upward from that point. Any local values to be added should be aware of this.

ASN.1 Representation:
```
SmallNumbers ::= ENUMERATED  {
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    n2    (12546),   -- NEW:
    n3    (12547),   -- NEW:
    n4    (12548),   -- NEW:
    n5    (12549),   -- NEW:
    n6    (12550),   -- NEW:
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    n17   (12561),   -- NEW:
    n18   (12562),   -- NEW:
    n19   (12563),   -- NEW:
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    n23   (12567),   -- NEW:
    n24   (12568),   -- NEW:
    n25   (12569),   -- NEW:
    n26   (12570),   -- NEW:
    n27   (12571),   -- NEW:
    n28   (12572),   -- NEW:
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- 159 -

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n34  (12578),  -- NEW:
n35  (12579),  -- NEW:
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n37  (12581),  -- NEW:
n38  (12582),  -- NEW:
n39  (12583),  -- NEW:
n40  (12584),  -- NEW:
n41  (12585),  -- NEW:
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n63  (12607),  -- NEW:
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n65  (12609),  -- NEW:
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n95  (12639),  -- NEW:
n96  (12640),  -- NEW:
n97  (12641),  -- NEW:
n98  (12642),  -- NEW:
n99  (12643),  -- NEW:
```

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    n255 (12799),   -- NEW:
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    }
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XML Representation:

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            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
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- 163 -

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                </xs:simpleType>
                <xs:simpleType>
                    <xs:restriction base="local:SmallNumbers" />
                </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

 In addition, this item may be used by data structures in other ITS standards.

6.37 Data Element: DE_Special Events

Use: The ITIS enumeration list commonly referred to as "Special Events," is assigned the upper byte value of [15] (which provides for value ranges from 3840 to 4095, inclusive). This list is formally called "SpecialEvents" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 23 different phrases, divided into 2 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 104 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 3968).

ASN.1 Representation:
```
SpecialEvents ::= ENUMERATED  {
   major-event           (3841),
   airshow               (3842),
   hot-air-ballooning    (3843),
   concert               (3844),
   state-occasion        (3845),
   vIP-visit             (3846),
   show                  (3847),
   festival              (3848),   -- Used for farmers' markets as well
   exhibition            (3849),
   performing-arts       (3850),
   outdoor-market        (3851),   -- Used for farmers' markets as well
   fair                  (3852),
   carnival              (3853),
   fireworks-display     (3854),
   trade-expo            (3855),
   movie-filming         (3856),
   presidential-visit    (3857),
   parade                (3858),
   procession            (3859),
   funeral-procession    (3860),
   crowd                 (3861),
   holiday-traffic-crowds (3862),
   -- Cancel Types
   event-ended           (3967),
   ... -- # LOCAL_CONTENT_ITIS
   }
   -- Events which affect the local roads
```


XML Representation:
```
<xs:simpleType name="SpecialEvents" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="3840"/>
                <xs:maxInclusive value="4095"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
```

- 167 -

```
                    <xs:restriction base="xs:string">
                        <xs:enumeration value="major event" id="_3841"/>
                        <xs:enumeration value="airshow" id="_3842"/>
                        <xs:enumeration value="hot air ballooning" id="_3843"/>
                        <xs:enumeration value="concert" id="_3844"/>
                        <xs:enumeration value="state occasion" id="_3845"/>
                        <xs:enumeration value="vIP visit" id="_3846"/>
                        <xs:enumeration value="show" id="_3847"/>
                        <xs:enumeration value="festival" id="_3848"/>
                        <xs:enumeration value="exhibition" id="_3849"/>
                        <xs:enumeration value="performing arts" id="_3850"/>
                        <xs:enumeration value="outdoor market" id="_3851"/>
                        <xs:enumeration value="fair" id="_3852"/>
                        <xs:enumeration value="carnival" id="_3853"/>
                        <xs:enumeration value="fireworks display" id="_3854"/>
                        <xs:enumeration value="trade expo" id="_3855"/>
                        <xs:enumeration value="movie filming" id="_3856"/>
                        <xs:enumeration value="presidential visit" id="_3857"/>
                        <xs:enumeration value="parade" id="_3858"/>
                        <xs:enumeration value="procession" id="_3859"/>
                        <xs:enumeration value="funeral procession" id="_3860"/>
                        <xs:enumeration value="crowd" id="_3861"/>
                        <xs:enumeration value="holiday traffic crowds" id="_3862"/>
                        <xs:enumeration value="event ended" id="_3967"/>
                    </xs:restriction>
                </xs:simpleType >
                <xs:simpleType>
                    <xs:restriction base="xs:string">
                        <xs:pattern value="\[.+\].*"/>
                    </xs:restriction>
                </xs:simpleType>
                <xs:simpleType>
                    <xs:restriction base="local:SpecialEvents" />
                </xs:simpleType>
            </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.38 Data Element: DE_Sporting Events

Use: The ITIS enumeration list commonly referred to as "Sporting Events," is assigned the upper byte
value of [14] (which provides for value ranges from 3584 to 3839, inclusive). This list is formally called
"SportingEvents" in the ASN.1 and XML productions. Items from this enumeration list can be used as an
event category classification. This list contains a total of 25 different phrases, divided into 2 further sub-
categories (the division into these sub-categories is informational only and other groupings may also be
used). The remaining 102 values up to the lower byte value of [127] are reserved for additional "national"
phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128
and proceeding upward from there (in other words, the first value assigned for any local additions to this
list would be given the value 3712).

ASN.1 Representation:
```
SportingEvents ::= ENUMERATED  {
    sports-event        (3585),
    game                (3586),
    tournament          (3587),
    track-and-field-event (3588),
    baseball-game       (3589),
    basketball-game     (3590),
    boxing-match        (3591),
    football-game       (3592),
    soccer-game         (3593),
    golf-tournament     (3594),
    hockey-game         (3595),
    tennis-tournament   (3596),
```

```
wrestling-match       (3597),
road-race             (3598),  -- Hint: used for motorcycle races as well
automobile-race       (3599),
bicycle-race          (3600),
race-event            (3601),
marathon              (3602),
horse-show            (3603),
rodeo                 (3604),
water-sports-event    (3605),
winter-sports-event   (3606),
skating-event         (3607),
dog-sled-race         (3608),
-- Cancel Types
sporting-event-ended  (3711),
... -- # LOCAL_CONTENT_ITIS
}
-- Events occurring on or nearby the roadway
```

XML Representation:
```
<xs:simpleType name="SportingEvents" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
               <xs:minInclusive value="3584"/>
               <xs:maxInclusive value="3839"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
               <xs:enumeration value="sports event" id="_3585"/>
               <xs:enumeration value="game" id="_3586"/>
               <xs:enumeration value="tournament" id="_3587"/>
               <xs:enumeration value="track and field event" id="_3588"/>
               <xs:enumeration value="baseball game" id="_3589"/>
               <xs:enumeration value="basketball game" id="_3590"/>
               <xs:enumeration value="boxing match" id="_3591"/>
               <xs:enumeration value="football game" id="_3592"/>
               <xs:enumeration value="soccer game" id="_3593"/>
               <xs:enumeration value="golf tournament" id="_3594"/>
               <xs:enumeration value="hockey game" id="_3595"/>
               <xs:enumeration value="tennis tournament" id="_3596"/>
               <xs:enumeration value="wrestling match" id="_3597"/>
               <xs:enumeration value="road race" id="_3598"/>
               <xs:enumeration value="automobile race" id="_3599"/>
               <xs:enumeration value="bicycle race" id="_3600"/>
               <xs:enumeration value="race event" id="_3601"/>
               <xs:enumeration value="marathon" id="_3602"/>
               <xs:enumeration value="horse show" id="_3603"/>
               <xs:enumeration value="rodeo" id="_3604"/>
               <xs:enumeration value="water sports event" id="_3605"/>
               <xs:enumeration value="winter sports event" id="_3606"/>
               <xs:enumeration value="skating event" id="_3607"/>
               <xs:enumeration value="dog sled race" id="_3608"/>
               <xs:enumeration value="sporting event ended" id="_3711"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
               <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:SportingEvents" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

- 169 -

6.39 Data Element: DE_States And Territories

Use: The ITIS enumeration list commonly referred to as "States And Territories," is assigned the upper byte value of [50] (which provides for value ranges from 12800 to 13055, inclusive). This list is formally called "StatesAndTerritories" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 56 different phrases. The remaining 71 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 12928).

ASN.1 Representation:

```
StatesAndTerritories ::= ENUMERATED  {
    alabama                     (12801),   -- NEW:
    alaska                      (12802),   -- NEW:
    american-Samoa              (12803),   -- NEW:
    arizona                     (12804),   -- NEW:
    arkansas                    (12805),   -- NEW:
    california                  (12806),   -- NEW:
    colorado                    (12807),   -- NEW:
    connecticut                 (12808),   -- NEW:
    delaware                    (12809),   -- NEW:
    district-of-Columbia        (12810),   -- NEW:
    florida                     (12811),   -- NEW:
    georgia                     (12812),   -- NEW:
    guam                        (12813),   -- NEW:
    hawaii                      (12814),   -- NEW:
    idaho                       (12815),   -- NEW:
    illinois                    (12816),   -- NEW:
    indiana                     (12817),   -- NEW:
    iowa                        (12818),   -- NEW:
    kansas                      (12819),   -- NEW:
    kentucky                    (12820),   -- NEW:
    louisiana                   (12821),   -- NEW:
    maine                       (12822),   -- NEW:
    maryland                    (12823),   -- NEW:
    massachusetts               (12824),   -- NEW:
    michigan                    (12825),   -- NEW:
    minnesota                   (12826),   -- NEW:
    mississippi                 (12827),   -- NEW:
    missouri                    (12828),   -- NEW:
    montana                     (12829),   -- NEW:
    nebraska                    (12830),   -- NEW:
    nevada                      (12831),   -- NEW:
    new-Hampshire               (12832),   -- NEW:
    new-Jersey                  (12833),   -- NEW:
    new-Mexico                  (12834),   -- NEW:
    new-York                    (12835),   -- NEW:
    north-Carolina              (12836),   -- NEW:
    north-Dakota                (12837),   -- NEW:
    northern-Marianas-Islands   (12838),   -- NEW:
    ohio                        (12839),   -- NEW:
    oklahoma                    (12840),   -- NEW:
    oregon                      (12841),   -- NEW:
    pennsylvania                (12842),   -- NEW:
    puerto-rico                 (12843),   -- NEW:
    rhode-Island                (12844),   -- NEW:
    south-Carolina              (12845),   -- NEW:
    south-Dakota                (12846),   -- NEW:
    tennessee                   (12847),   -- NEW:
    texas                       (12848),   -- NEW:
    utah                        (12849),   -- NEW:
    vermont                     (12850),   -- NEW:
    virginia                    (12851),   -- NEW:
    virgin-Islands              (12852),   -- NEW:
    washington                  (12853),   -- NEW:
    west-Virginia               (12854),   -- NEW:
    wisconsin                   (12855),   -- NEW:
    wyoming                     (12856),   -- NEW:
```

```
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:
```xml
<xs:simpleType name="StatesAndTerritories" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="12800"/>
                <xs:maxInclusive value="13055"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="alabama" id="_12801"/>
                <xs:enumeration value="alaska" id="_12802"/>
                <xs:enumeration value="american Samoa" id="_12803"/>
                <xs:enumeration value="arizona" id="_12804"/>
                <xs:enumeration value="arkansas" id="_12805"/>
                <xs:enumeration value="california" id="_12806"/>
                <xs:enumeration value="colorado" id="_12807"/>
                <xs:enumeration value="connecticut" id="_12808"/>
                <xs:enumeration value="delaware" id="_12809"/>
                <xs:enumeration value="district of Columbia" id="_12810"/>
                <xs:enumeration value="florida" id="_12811"/>
                <xs:enumeration value="georgia" id="_12812"/>
                <xs:enumeration value="guam" id="_12813"/>
                <xs:enumeration value="hawaii" id="_12814"/>
                <xs:enumeration value="idaho" id="_12815"/>
                <xs:enumeration value="illinois" id="_12816"/>
                <xs:enumeration value="indiana" id="_12817"/>
                <xs:enumeration value="iowa" id="_12818"/>
                <xs:enumeration value="kansas" id="_12819"/>
                <xs:enumeration value="kentucky" id="_12820"/>
                <xs:enumeration value="louisiana" id="_12821"/>
                <xs:enumeration value="maine" id="_12822"/>
                <xs:enumeration value="maryland" id="_12823"/>
                <xs:enumeration value="massachusetts" id="_12824"/>
                <xs:enumeration value="michigan" id="_12825"/>
                <xs:enumeration value="minnesota" id="_12826"/>
                <xs:enumeration value="mississippi" id="_12827"/>
                <xs:enumeration value="missouri" id="_12828"/>
                <xs:enumeration value="montana" id="_12829"/>
                <xs:enumeration value="nebraska" id="_12830"/>
                <xs:enumeration value="nevada" id="_12831"/>
                <xs:enumeration value="new Hampshire" id="_12832"/>
                <xs:enumeration value="new Jersey" id="_12833"/>
                <xs:enumeration value="new Mexico" id="_12834"/>
                <xs:enumeration value="new York" id="_12835"/>
                <xs:enumeration value="north Carolina" id="_12836"/>
                <xs:enumeration value="north Dakota" id="_12837"/>
                <xs:enumeration value="northern Marianas Islands" id="_12838"/>
                <xs:enumeration value="ohio" id="_12839"/>
                <xs:enumeration value="oklahoma" id="_12840"/>
                <xs:enumeration value="oregon" id="_12841"/>
                <xs:enumeration value="pennsylvania" id="_12842"/>
                <xs:enumeration value="puerto rico" id="_12843"/>
                <xs:enumeration value="rhode Island" id="_12844"/>
                <xs:enumeration value="south Carolina" id="_12845"/>
                <xs:enumeration value="south Dakota" id="_12846"/>
                <xs:enumeration value="tennessee" id="_12847"/>
                <xs:enumeration value="texas" id="_12848"/>
                <xs:enumeration value="utah" id="_12849"/>
                <xs:enumeration value="vermont" id="_12850"/>
                <xs:enumeration value="virginia" id="_12851"/>
                <xs:enumeration value="virgin Islands" id="_12852"/>
                <xs:enumeration value="washington" id="_12853"/>
                <xs:enumeration value="west Virginia" id="_12854"/>
                <xs:enumeration value="wisconsin" id="_12855"/>
                <xs:enumeration value="wyoming" id="_12856"/>
```

```
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:StatesAndTerritories" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

 In addition, this item may be used by data structures in other ITS standards.

6.40 Data Element: DE_Street Suffixes

Use: The ITIS enumeration list commonly referred to as "Street Suffixes," is assigned the upper byte value of [52] (which provides for value ranges from 13312 to 13567, inclusive). This list is formally called "StreetSuffixes" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 145 different phrases. Also observe that this list contains more than the normal limit of 127 entries for "national" phrases. Should additional phrases need to be added to this list, then will be added starting with a value of 13458 and proceeding upward from that point. Any local values to be added should be aware of this.

ASN.1 Representation:
```
StreetSuffixes ::= ENUMERATED  {
    alley      (13313),  -- NEW:
    annex      (13314),  -- NEW:
    arcade     (13315),  -- NEW:
    avenue     (13316),  -- NEW:
    bayoo      (13317),  -- NEW:
    beach      (13318),  -- NEW:
    bend       (13319),  -- NEW:
    bluff      (13320),  -- NEW:
    bottom     (13321),  -- NEW:
    boulevard  (13322),  -- NEW:
    branch     (13323),  -- NEW:
    nbridge    (13324),  -- NEW: Note use of "n" to avoid conflict with other entry
    brook      (13325),  -- NEW:
    burg       (13326),  -- NEW:
    bypass     (13327),  -- NEW:
    camp       (13328),  -- NEW:
    canyon     (13329),  -- NEW:
    cape       (13330),  -- NEW:
    causeway   (13331),  -- NEW:
    nCenter    (13332),  -- NEW: Note use of "n" to avoid conflict with other entry
    circle     (13333),  -- NEW:
    cliff      (13334),  -- NEW:
    club       (13335),  -- NEW:
    common     (13336),  -- NEW:
    corner     (13337),  -- NEW:
    course     (13338),  -- NEW:
    court      (13339),  -- NEW:
    cove       (13340),  -- NEW:
    creek      (13341),  -- NEW:
    crescent   (13342),  -- NEW:
    crest      (13343),  -- NEW:
    nCrossing  (13344),  -- NEW: Note use of "n" to avoid conflict with other entry
    crossroad  (13345),  -- NEW:
    curve      (13346),  -- NEW:
    dale       (13347),  -- NEW:
    nDam       (13348),  -- NEW: Note use of "n" to avoid conflict with other entry
    divide     (13349),  -- NEW:
    drive      (13350),  -- NEW:
    estate     (13351),  -- NEW:
    expressway (13352),  -- NEW:
    extension  (13353),  -- NEW:
```

```
    fall        (13354),  -- NEW:
    nFerry      (13355),  -- NEW:  Note use of "n" to avoid conflict with other entry
    field       (13356),  -- NEW:
    flat        (13357),  -- NEW:
    ford        (13358),  -- NEW:
    forest      (13359),  -- NEW:
    forge       (13360),  -- NEW:
    fork        (13361),  -- NEW:
    fort        (13362),  -- NEW:
    nFreeway    (13363),  -- NEW:  Note use of "n" to avoid conflict with other entry
    garden      (13364),  -- NEW:
    gateway     (13365),  -- NEW:
    glen        (13366),  -- NEW:
    green       (13367),  -- NEW:
    grove       (13368),  -- NEW:
    harbor      (13369),  -- NEW:
    haven       (13370),  -- NEW:
    heights     (13371),  -- NEW:
    highway     (13372),  -- NEW:
    nHill       (13373),  -- NEW:  Note use of "n" to avoid conflict with other entry
    hollow      (13374),  -- NEW:
    inlet       (13375),  -- NEW:
    nIsland     (13376),  -- NEW:  Note use of "n" to avoid conflict with other entry
    isle        (13377),  -- NEW:
    nJunction   (13378),  -- NEW:  Note use of "n" to avoid conflict with other entry
    key         (13379),  -- NEW:
    knoll       (13380),  -- NEW:
    lake        (13381),  -- NEW:
    land        (13382),  -- NEW:
    landing     (13383),  -- NEW:
    nLane       (13384),  -- NEW:  Note use of "n" to avoid conflict with other entry
    light       (13385),  -- NEW:
    loaf        (13386),  -- NEW:
    lock        (13387),  -- NEW:
    lodge       (13388),  -- NEW:
    loop        (13389),  -- NEW:
    mall        (13390),  -- NEW:
    manor       (13391),  -- NEW:
    meadow      (13392),  -- NEW:
    mews        (13393),  -- NEW:
    mill        (13394),  -- NEW:
    mission     (13395),  -- NEW:
    motorway    (13396),  -- NEW:
    mount       (13397),  -- NEW:
    mountain    (13398),  -- NEW:
    neck        (13399),  -- NEW:
    orchard     (13400),  -- NEW:
    oval        (13401),  -- NEW:
    nOverpass   (13402),  -- NEW:  Note use of "n" to avoid conflict with other entry
    park        (13403),  -- NEW:
    parkway     (13404),  -- NEW:
    nPass       (13405),  -- NEW:  Note use of "n" to avoid conflict with other entry
    passage     (13406),  -- NEW:
    path        (13407),  -- NEW:
    pike        (13408),  -- NEW:
    pine        (13409),  -- NEW:
    plains      (13410),  -- NEW:
    plaza       (13411),  -- NEW:
    point       (13412),  -- NEW:
    port        (13413),  -- NEW:
    prairie     (13414),  -- NEW:
    radial      (13415),  -- NEW:
    ramp        (13416),  -- NEW:
    ranch       (13417),  -- NEW:
    rapid       (13418),  -- NEW:
    rest        (13419),  -- NEW:
    ridge       (13420),  -- NEW:
    river       (13421),  -- NEW:
    nRoad       (13422),  -- NEW:  Note use of "n" to avoid conflict with other entry
    route       (13423),  -- NEW:
    row         (13424),  -- NEW:
```

```
rue        (13425),  -- NEW:
run        (13426),  -- NEW:
shoal      (13427),  -- NEW:
shore      (13428),  -- NEW:
skyway     (13429),  -- NEW:
spring     (13430),  -- NEW:
spur       (13431),  -- NEW:
square     (13432),  -- NEW:
nStation   (13433),  -- NEW: Note use of "n" to avoid conflict with other entry
stravenue  (13434),  -- NEW:
stream     (13435),  -- NEW:
street     (13436),  -- NEW:
summit     (13437),  -- NEW:
terrace    (13438),  -- NEW:
throughway (13439),  -- NEW:
trace      (13440),  -- NEW:
nTrack     (13441),  -- NEW: Note use of "n" to avoid conflict with other entry
trafficway (13442),  -- NEW:
nTrail     (13443),  -- NEW: Note use of "n" to avoid conflict with other entry
xTunnel    (13444),  -- NEW: Note use of "n" to avoid conflict with other entry
turnpike   (13445),  -- NEW:
nUnderpass (13446),  -- NEW: Note use of "n" to avoid conflict with other entry
union      (13447),  -- NEW:
valley     (13448),  -- NEW:
viaduct    (13449),  -- NEW:
view       (13450),  -- NEW:
village    (13451),  -- NEW:
ville      (13452),  -- NEW:
vista      (13453),  -- NEW:
nWalk      (13454),  -- NEW: Note use of "n" to avoid conflict with other  entry
wall       (13455),  -- NEW:
way        (13456),  -- NEW:
well       (13457),  -- NEW:
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:
```xml
<xs:simpleType name="StreetSuffixes" >
    <xs:union>
       <xs:simpleType>
          <xs:restriction base="xs:unsignedInt">
             <xs:minInclusive value="13312"/>
             <xs:maxInclusive value="13567"/>
          </xs:restriction>
       </xs:simpleType>
       <xs:simpleType>
          <xs:restriction base="xs:string">
             <xs:enumeration value="alley" id="_13313"/>
             <xs:enumeration value="annex" id="_13314"/>
             <xs:enumeration value="arcade" id="_13315"/>
             <xs:enumeration value="avenue" id="_13316"/>
             <xs:enumeration value="bayoo" id="_13317"/>
             <xs:enumeration value="beach" id="_13318"/>
             <xs:enumeration value="bend" id="_13319"/>
             <xs:enumeration value="bluff" id="_13320"/>
             <xs:enumeration value="bottom" id="_13321"/>
             <xs:enumeration value="boulevard" id="_13322"/>
             <xs:enumeration value="branch" id="_13323"/>
             <xs:enumeration value="nbridge" id="_13324"/>
             <xs:enumeration value="brook" id="_13325"/>
             <xs:enumeration value="burg" id="_13326"/>
             <xs:enumeration value="bypass" id="_13327"/>
             <xs:enumeration value="camp" id="_13328"/>
             <xs:enumeration value="canyon" id="_13329"/>
             <xs:enumeration value="cape" id="_13330"/>
             <xs:enumeration value="causeway" id="_13331"/>
             <xs:enumeration value="nCenter" id="_13332"/>
             <xs:enumeration value="circle" id="_13333"/>
             <xs:enumeration value="cliff" id="_13334"/>
             <xs:enumeration value="club" id="_13335"/>
```

```
<xs:enumeration value="common" id="_13336"/>
<xs:enumeration value="corner" id="_13337"/>
<xs:enumeration value="course" id="_13338"/>
<xs:enumeration value="court" id="_13339"/>
<xs:enumeration value="cove" id="_13340"/>
<xs:enumeration value="creek" id="_13341"/>
<xs:enumeration value="crescent" id="_13342"/>
<xs:enumeration value="crest" id="_13343"/>
<xs:enumeration value="nCrossing" id="_13344"/>
<xs:enumeration value="crossroad" id="_13345"/>
<xs:enumeration value="curve" id="_13346"/>
<xs:enumeration value="dale" id="_13347"/>
<xs:enumeration value="nDam" id="_13348"/>
<xs:enumeration value="divide" id="_13349"/>
<xs:enumeration value="drive" id="_13350"/>
<xs:enumeration value="estate" id="_13351"/>
<xs:enumeration value="expressway" id="_13352"/>
<xs:enumeration value="extension" id="_13353"/>
<xs:enumeration value="fall" id="_13354"/>
<xs:enumeration value="nFerry" id="_13355"/>
<xs:enumeration value="field" id="_13356"/>
<xs:enumeration value="flat" id="_13357"/>
<xs:enumeration value="ford" id="_13358"/>
<xs:enumeration value="forest" id="_13359"/>
<xs:enumeration value="forge" id="_13360"/>
<xs:enumeration value="fork" id="_13361"/>
<xs:enumeration value="fort" id="_13362"/>
<xs:enumeration value="nFreeway" id="_13363"/>
<xs:enumeration value="garden" id="_13364"/>
<xs:enumeration value="gateway" id="_13365"/>
<xs:enumeration value="glen" id="_13366"/>
<xs:enumeration value="green" id="_13367"/>
<xs:enumeration value="grove" id="_13368"/>
<xs:enumeration value="harbor" id="_13369"/>
<xs:enumeration value="haven" id="_13370"/>
<xs:enumeration value="heights" id="_13371"/>
<xs:enumeration value="highway" id="_13372"/>
<xs:enumeration value="nHill" id="_13373"/>
<xs:enumeration value="hollow" id="_13374"/>
<xs:enumeration value="inlet" id="_13375"/>
<xs:enumeration value="nIsland" id="_13376"/>
<xs:enumeration value="isle" id="_13377"/>
<xs:enumeration value="nJunction" id="_13378"/>
<xs:enumeration value="key" id="_13379"/>
<xs:enumeration value="knoll" id="_13380"/>
<xs:enumeration value="lake" id="_13381"/>
<xs:enumeration value="land" id="_13382"/>
<xs:enumeration value="landing" id="_13383"/>
<xs:enumeration value="nLane" id="_13384"/>
<xs:enumeration value="light" id="_13385"/>
<xs:enumeration value="loaf" id="_13386"/>
<xs:enumeration value="lock" id="_13387"/>
<xs:enumeration value="lodge" id="_13388"/>
<xs:enumeration value="loop" id="_13389"/>
<xs:enumeration value="mall" id="_13390"/>
<xs:enumeration value="manor" id="_13391"/>
<xs:enumeration value="meadow" id="_13392"/>
<xs:enumeration value="mews" id="_13393"/>
<xs:enumeration value="mill" id="_13394"/>
<xs:enumeration value="mission" id="_13395"/>
<xs:enumeration value="motorway" id="_13396"/>
<xs:enumeration value="mount" id="_13397"/>
<xs:enumeration value="mountain" id="_13398"/>
<xs:enumeration value="neck" id="_13399"/>
<xs:enumeration value="orchard" id="_13400"/>
<xs:enumeration value="oval" id="_13401"/>
<xs:enumeration value="nOverpass" id="_13402"/>
<xs:enumeration value="park" id="_13403"/>
<xs:enumeration value="parkway" id="_13404"/>
<xs:enumeration value="nPass" id="_13405"/>
<xs:enumeration value="passage" id="_13406"/>
```

```
                <xs:enumeration value="path" id="_13407"/>
                <xs:enumeration value="pike" id="_13408"/>
                <xs:enumeration value="pine" id="_13409"/>
                <xs:enumeration value="plains" id="_13410"/>
                <xs:enumeration value="plaza" id="_13411"/>
                <xs:enumeration value="point" id="_13412"/>
                <xs:enumeration value="port" id="_13413"/>
                <xs:enumeration value="prairie" id="_13414"/>
                <xs:enumeration value="radial" id="_13415"/>
                <xs:enumeration value="ramp" id="_13416"/>
                <xs:enumeration value="ranch" id="_13417"/>
                <xs:enumeration value="rapid" id="_13418"/>
                <xs:enumeration value="rest" id="_13419"/>
                <xs:enumeration value="ridge" id="_13420"/>
                <xs:enumeration value="river" id="_13421"/>
                <xs:enumeration value="nRoad" id="_13422"/>
                <xs:enumeration value="route" id="_13423"/>
                <xs:enumeration value="row" id="_13424"/>
                <xs:enumeration value="rue" id="_13425"/>
                <xs:enumeration value="run" id="_13426"/>
                <xs:enumeration value="shoal" id="_13427"/>
                <xs:enumeration value="shore" id="_13428"/>
                <xs:enumeration value="skyway" id="_13429"/>
                <xs:enumeration value="spring" id="_13430"/>
                <xs:enumeration value="spur" id="_13431"/>
                <xs:enumeration value="square" id="_13432"/>
                <xs:enumeration value="nStation" id="_13433"/>
                <xs:enumeration value="stravenue" id="_13434"/>
                <xs:enumeration value="stream" id="_13435"/>
                <xs:enumeration value="street" id="_13436"/>
                <xs:enumeration value="summit" id="_13437"/>
                <xs:enumeration value="terrace" id="_13438"/>
                <xs:enumeration value="throughway" id="_13439"/>
                <xs:enumeration value="trace" id="_13440"/>
                <xs:enumeration value="nTrack" id="_13441"/>
                <xs:enumeration value="trafficway" id="_13442"/>
                <xs:enumeration value="nTrail" id="_13443"/>
                <xs:enumeration value="xTunnel" id="_13444"/>
                <xs:enumeration value="turnpike" id="_13445"/>
                <xs:enumeration value="nUnderpass" id="_13446"/>
                <xs:enumeration value="union" id="_13447"/>
                <xs:enumeration value="valley" id="_13448"/>
                <xs:enumeration value="viaduct" id="_13449"/>
                <xs:enumeration value="view" id="_13450"/>
                <xs:enumeration value="village" id="_13451"/>
                <xs:enumeration value="ville" id="_13452"/>
                <xs:enumeration value="vista" id="_13453"/>
                <xs:enumeration value="nWalk" id="_13454"/>
                <xs:enumeration value="wall" id="_13455"/>
                <xs:enumeration value="way" id="_13456"/>
                <xs:enumeration value="well" id="_13457"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:StreetSuffixes" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

6.41 Data Element: DE_Structures

Use: The ITIS enumeration list commonly referred to as "Structures," is assigned the upper byte value of [51] (which provides for value ranges from 13056 to 13311, inclusive). This list is formally called "Structures" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 27 different phrases. The remaining 100 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 13184).

ASN.1 Representation:
```
Structures ::= ENUMERATED  {
    rest-room                        (13057),  -- NEW: RM-140
    mens-rest-room                   (13058),  -- NEW: RA-090
    womens-rest-room                 (13059),  -- NEW: RA-100
    family-rest-room                 (13060),  -- NEW: RA-150
    dam                              (13061),  -- NEW: RG-030
    fish-hatchery                    (13062),  -- NEW: RG-090
    information                      (13063),  -- NEW: RG-100
    lighthouse                       (13064),  -- NEW: RG-120
    lookout-tower                    (13065),  -- NEW: RG-140
    ranger-station                   (13066),  -- NEW: RG-170
    grocery-store                    (13068),  -- NEW: RM-070
    lodging                          (13069),  -- NEW: RM-090
    post-office                      (13070),  -- NEW: RM-110
    picnic-shelter                   (13072),  -- NEW: RM-130
    group-camping                    (13073),  -- NEW: RM-210
    group-picnicking                 (13074),  -- NEW: RM-220
    n24-hour-pharmacy                (13075),  -- NEW: RM-230
    kennel                           (13076),  -- NEW: RA-050
    laundry-facilities               (13077),  -- NEW: RA-060
    shower-facilities                (13078),  -- NEW: RA-130
    amphitheater                     (13079),  -- NEW: RL-010
    stable                           (13080),  -- NEW: RL-080
    hospital                         (13081)   -- NEW: D9-13a or D9-2
    emergency-medical-service-point  (13082),  -- NEW: Use for emergency medical care as
                                               -- well D9-13c
    library                          (13083),  -- NEW: I-8p
    recycling-collection-center      (13084),  -- NEW: I-11
    school                           (13085),  -- NEW: Use for S1-1
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:
```xml
<xs:simpleType name="Structures" >
    <xs:union>
       <xs:simpleType>
          <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="13056"/>
              <xs:maxInclusive value="13311"/>
          </xs:restriction>
       </xs:simpleType>
       <xs:simpleType>
          <xs:restriction base="xs:string">
             <xs:enumeration value="rest room" id="_13057"/>
             <xs:enumeration value="mens rest room" id="_13058"/>
             <xs:enumeration value="womens rest room" id="_13059"/>
             <xs:enumeration value="family rest room" id="_13060"/>
             <xs:enumeration value="dam" id="_13061"/>
             <xs:enumeration value="fish hatchery" id="_13062"/>
             <xs:enumeration value="information" id="_13063"/>
             <xs:enumeration value="lighthouse" id="_13064"/>
             <xs:enumeration value="lookout tower" id="_13065"/>
             <xs:enumeration value="ranger station" id="_13066"/>
             <xs:enumeration value="grocery store" id="_13068"/>
             <xs:enumeration value="lodging" id="_13069"/>
             <xs:enumeration value="post office" id="_13070"/>
```

```
                <xs:enumeration value="picnic shelter" id="_13072"/>
                <xs:enumeration value="group camping" id="_13073"/>
                <xs:enumeration value="group picnicking" id="_13074"/>
                <xs:enumeration value="n24 hour pharmacy" id="_13075"/>
                <xs:enumeration value="kennel" id="_13076"/>
                <xs:enumeration value="laundry facilities" id="_13077"/>
                <xs:enumeration value="shower facilities" id="_13078"/>
                <xs:enumeration value="amphitheater" id="_13079"/>
                <xs:enumeration value="stable" id="_13080"/>
                <xs:enumeration value="hospital" id="_13081"/>
                <xs:enumeration value="emergency medical service point" id="_13082"/>
                <xs:enumeration value="library" id="_13083"/>
                <xs:enumeration value="recycling collection center" id="_13084"/>
                <xs:enumeration value="school" id="_13085"/>
        </xs:restriction>
    </xs:simpleType >
    <xs:simpleType>
        <xs:restriction base="xs:string">
            <xs:pattern value="\[.+\].*"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
        <xs:restriction base="local:Structures" />
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

6.42 Data Element: DE_Suggestion Advice

Use: The ITIS enumeration list commonly referred to as "Suggestion Advice," is assigned the upper byte value of [26] (which provides for value ranges from 6656 to 6911, inclusive). This list is formally called "SuggestionAdvice" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 22 different phrases. The remaining 105 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 6784).

ASN.1 Representation:
```
SuggestionAdvice ::= ENUMERATED  {
   why-not-ride-share                          (6657),
   is-this-your-no-ride-day                    (6658),
   why-not-use-transit                         (6659),
   why-not-park-and-ride                       (6660),
   why-not-try-paratransit                     (6661),
   why-not-travel-by-rail                      (6662),
   why-not-use-the-subway                      (6663),
   why-not-try-rapid-transit                   (6664),
   why-not-travel-by-bus                       (6665),
   your-parking-ticket-covers-the-return-ride (6666),
   avoid-the-rush-hour                         (6667),
   do-not-allow-unnecessary-gaps               (6668),
   follow-the-vehicle-in-front-smoothly        (6669),
   do-not-slow-down-unnecessarily              (6670),
   watch-for-muggers                           (6671),
   watch-for-pickpockets                       (6672),
   watch-for-thieves                           (6673),
   sorry-for-any-delay                         (6674),
   thank-you-for-your-understanding            (6675),
   we-appreciate-your-patience                 (6676),
   we-are-grateful-for-your-cooperation        (6677),
   share-the-road                              (6678),  -- NEW:
   ... -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:
```
<xs:simpleType name="SuggestionAdvice" >
      <xs:union>
          <xs:simpleType>
             <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="6656"/>
                <xs:maxInclusive value="6911"/>
             </xs:restriction>
          </xs:simpleType>
          <xs:simpleType>
             <xs:restriction base="xs:string">
                <xs:enumeration value="why not ride share" id="_6657"/>
                <xs:enumeration value="is this your no ride day" id="_6658"/>
                <xs:enumeration value="why not use transit" id="_6659"/>
                <xs:enumeration value="why not park and ride" id="_6660"/>
                <xs:enumeration value="why not try paratransit" id="_6661"/>
                <xs:enumeration value="why not travel by rail" id="_6662"/>
                <xs:enumeration value="why not use the subway" id="_6663"/>
                <xs:enumeration value="why not try rapid transit" id="_6664"/>
                <xs:enumeration value="why not travel by bus" id="_6665"/>
                <xs:enumeration value="your parking ticket covers the return ride"
id="_6666"/>
                <xs:enumeration value="avoid the rush hour" id="_6667"/>
                <xs:enumeration value="do not allow unnecessary gaps" id="_6668"/>
                <xs:enumeration value="follow the vehicle in front smoothly" id="_6669"/>
                <xs:enumeration value="do not slow down unnecessarily" id="_6670"/>
                <xs:enumeration value="watch for muggers" id="_6671"/>
                <xs:enumeration value="watch for pickpockets" id="_6672"/>
                <xs:enumeration value="watch for thieves" id="_6673"/>
                <xs:enumeration value="sorry for any delay" id="_6674"/>
                <xs:enumeration value="thank you for your understanding" id="_6675"/>
                <xs:enumeration value="we appreciate your patience" id="_6676"/>
                <xs:enumeration value="we are grateful for your cooperation" id="_6677"/>
                <xs:enumeration value="share the road" id="_6678"/>
             </xs:restriction>
          </xs:simpleType >
          <xs:simpleType>
             <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
             </xs:restriction>
          </xs:simpleType>
          <xs:simpleType>
             <xs:restriction base="local:SuggestionAdvice" />
          </xs:simpleType>
      </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.43 Data Element: DE_Temperature

Use: The ITIS enumeration list commonly referred to as "Temperature," is assigned the upper byte value
of [22] (which provides for value ranges from 5632 to 5887, inclusive). This list is formally called
"Temperature" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to
be used as an event category classification. This list contains a total of 23 different phrases, divided into 2
further sub-categories (the division into these sub-categories is informational only and other groupings may
also be used). The remaining 104 values up to the lower byte value of [127] are reserved for additional
"national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte
value of 128 and proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 5760).

ASN.1 Representation:
```
Temperature ::= ENUMERATED  {
   maximum-temperature                          (5633),  -- This index is not to be used as a
                                                         -- default value for this category
```

```
    temperature                                 (5634),  -- Typically followed by a number
                                                         -- value and a unit value
minimum-temperature                      (5635),
current-temperature                      (5636),
heat-index                               (5637),
extreme-heat                             (5638),
hot                                      (5639),
hotter                                   (5640),
heat                                     (5641),
warmer                                   (5642),
warm                                     (5643),
mild                                     (5644),
cool                                     (5645),
cooler                                   (5646),
cold                                     (5647),
colder                                   (5648),
very-cold                                (5649),
extreme-cold                             (5650),
wind-chill                               (5651),
dewpoint                                 (5652),
relative-humidity                        (5653),
-- Cancel Types
temperatures-close-to-the-seasonal-norm (5758),
less-extreme-temperatures                (5759),
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:

```xml
<xs:simpleType name="Temperature" >
    <xs:union>
       <xs:simpleType>
          <xs:restriction base="xs:unsignedInt">
             <xs:minInclusive value="5632"/>
             <xs:maxInclusive value="5887"/>
          </xs:restriction>
       </xs:simpleType>
       <xs:simpleType>
          <xs:restriction base="xs:string">
             <xs:enumeration value="maximum temperature" id="_5633"/>
             <xs:enumeration value="temperature" id="_5634"/>
             <xs:enumeration value="minimum temperature" id="_5635"/>
             <xs:enumeration value="current temperature" id="_5636"/>
             <xs:enumeration value="heat index" id="_5637"/>
             <xs:enumeration value="extreme heat" id="_5638"/>
             <xs:enumeration value="hot" id="_5639"/>
             <xs:enumeration value="hotter" id="_5640"/>
             <xs:enumeration value="heat" id="_5641"/>
             <xs:enumeration value="warmer" id="_5642"/>
             <xs:enumeration value="warm" id="_5643"/>
             <xs:enumeration value="mild" id="_5644"/>
             <xs:enumeration value="cool" id="_5645"/>
             <xs:enumeration value="cooler" id="_5646"/>
             <xs:enumeration value="cold" id="_5647"/>
             <xs:enumeration value="colder" id="_5648"/>
             <xs:enumeration value="very cold" id="_5649"/>
             <xs:enumeration value="extreme cold" id="_5650"/>
             <xs:enumeration value="wind chill" id="_5651"/>
             <xs:enumeration value="dewpoint" id="_5652"/>
             <xs:enumeration value="relative humidity" id="_5653"/>
             <xs:enumeration value="temperatures close to the seasonal norm"
id="_5758"/>
             <xs:enumeration value="less extreme temperatures" id="_5759"/>
          </xs:restriction>
       </xs:simpleType >
       <xs:simpleType>
          <xs:restriction base="xs:string">
             <xs:pattern value="\[.+\].*"/>
          </xs:restriction>
       </xs:simpleType>
       <xs:simpleType>
```

- 180 -

```
                    <xs:restriction base="local:Temperature" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.44 Data Element: DE_Traffic Conditions

Use: The ITIS enumeration list commonly referred to as "Traffic Conditions," is assigned the upper byte
value of [01] (which provides for value ranges from 256 to 511, inclusive). This list is formally called
"TrafficConditions" in the ASN.1 and XML productions. Items from this enumeration list can be used as
an event category classification. This list contains a total of 19 different phrases, divided into 2 further sub-
categories (the division into these sub-categories is informational only and other groupings may also be
used). The remaining 108 values up to the lower byte value of [127] are reserved for additional "national"
phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128
and proceeding upward from there (in other words, the first value assigned for any local additions to this
list would be given the value 384).

ASN.1 Representation:
```
TrafficConditions ::= ENUMERATED  {
    stopped-traffic                 (257),
    stop-and-go-traffic             (258),
    slow-traffic                    (259),
    heavy-traffic                   (260),
    traffic-building                (261),
    long-queues                     (262),
    traffic-congestion              (263),
    traffic-lighter-than-normal     (264),
    traffic-heavier-than-normal     (265),
    traffic-much-heavier-than-normal (266),
    current-speed                   (267),  -- Typically followed by a value entry and a
                                            -- units entry (MPH/KPH)
    speed-limit                     (268),  -- Typically followed by a value entry and a
                                            -- units entry (MPH/KPH)
    travel-time                     (269),  -- Typically followed by a value entry and a
                                            -- units entry (seconds)
    merging-traffic                 (272),  -- NEW: Typically followed by direction
                                            -- left/right. Can be used for W4-1R and
                                            -- W4-1L signs
    -- Cancel Types
    traffic-flowing-freely          (379),
    traffic-easing                  (380),  -- Alternative rendering: traffic clearing
    traffic-returned-to-normal      (381),
    no-problems-to-report           (382),
    traffic-congestion-cleared      (383),
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:
```
<xs:simpleType name="TrafficConditions" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="256"/>
                <xs:maxInclusive value="511"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="stopped traffic" id="_257"/>
                <xs:enumeration value="stop and go traffic" id="_258"/>
                <xs:enumeration value="slow traffic" id="_259"/>
                <xs:enumeration value="heavy traffic" id="_260"/>
```

- 181 -

```
                <xs:enumeration value="traffic building" id="_261"/>
                <xs:enumeration value="long queues" id="_262"/>
                <xs:enumeration value="traffic congestion" id="_263"/>
                <xs:enumeration value="traffic lighter than normal" id="_264"/>
                <xs:enumeration value="traffic heavier than normal" id="_265"/>
                <xs:enumeration value="traffic much heavier than normal" id="_266"/>
                <xs:enumeration value="current speed" id="_267"/>
                <xs:enumeration value="speed limit" id="_268"/>
                <xs:enumeration value="travel time" id="_269"/>
                <xs:enumeration value="merging traffic" id="_272"/>
                <xs:enumeration value="traffic flowing freely" id="_379"/>
                <xs:enumeration value="traffic easing" id="_380"/>
                <xs:enumeration value="traffic returned to normal" id="_381"/>
                <xs:enumeration value="no problems to report" id="_382"/>
                <xs:enumeration value="traffic congestion cleared" id="_383"/>
            </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:pattern value="\[.+\].*"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="local:TrafficConditions" />
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.45 Data Element: DE_Transit Mode

Use: The ITIS enumeration list commonly referred to as "Transit Mode," is assigned the upper byte value
of [35] (which provides for value ranges from 8960 to 9215, inclusive). This list is formally called
"TransitMode" in the ASN.1 and XML productions. Items from this enumeration list can be used as an
event category classification. This list contains a total of 26 different phrases. The remaining 101 values
up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local
phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from
there (in other words, the first value assigned for any local additions to this list would be given the value
9088).

ASN.1 Representation:
```
TransitMode ::= ENUMERATED  {
    travel             (8961),  -- Hint: may include all modes
    transit            (8962),  -- Hint: may include all public transit modes
    bus                (8963),
    trolleybus         (8964),
    rail               (8965),
    commuter-rail      (8966),
    subway             (8967),
    rapid-transit      (8968),
    light-rail         (8969),
    streetcar          (8970),  -- Alternative Rendering:   tram
    dial-a-ride        (8971),  -- Alternative Rendering:   demand responsive transit
    park-and-ride      (8972),  -- Not to be used as a place
    shuttle            (8973),
    free-shuttle       (8974),  -- Alternative Rendering:   tram
    airport-shuttle    (8975),
    taxies             (8976),
    ferry              (8977),
    passenger-ferry    (8978),
    vehicle-ferry      (8979),
    aerial-tramway     (8980),
    automated-guideway (8981),  -- Include all types of guideways
    cable-cars         (8982),
```

- 182 -

```
   monorail          (8983),
   air-travel        (8984),  -- All modes of air travel
   hitch-hitching    (8985),  -- NEW:
   walk              (8986),  -- NEW:  Alt form: Walking
   ... -- # LOCAL_CONTENT_ITIS
   }
   -- Used to describe various types of transit services, and information pertaining
   -- to the whole mode.  If you wish to identify a specific vehicle (such as a bus not
   -- the bus fleet), use Vehicle Group
```

XML Representation:
```
<xs:simpleType name="TransitMode" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="8960"/>
              <xs:maxInclusive value="9215"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="travel" id="_8961"/>
              <xs:enumeration value="transit" id="_8962"/>
              <xs:enumeration value="bus" id="_8963"/>
              <xs:enumeration value="trolleybus" id="_8964"/>
              <xs:enumeration value="rail" id="_8965"/>
              <xs:enumeration value="commuter rail" id="_8966"/>
              <xs:enumeration value="subway" id="_8967"/>
              <xs:enumeration value="rapid transit" id="_8968"/>
              <xs:enumeration value="light rail" id="_8969"/>
              <xs:enumeration value="streetcar" id="_8970"/>
              <xs:enumeration value="dial a ride" id="_8971"/>
              <xs:enumeration value="park and ride" id="_8972"/>
              <xs:enumeration value="shuttle" id="_8973"/>
              <xs:enumeration value="free shuttle" id="_8974"/>
              <xs:enumeration value="airport shuttle" id="_8975"/>
              <xs:enumeration value="taxies" id="_8976"/>
              <xs:enumeration value="ferry" id="_8977"/>
              <xs:enumeration value="passenger ferry" id="_8978"/>
              <xs:enumeration value="vehicle ferry" id="_8979"/>
              <xs:enumeration value="aerial tramway" id="_8980"/>
              <xs:enumeration value="automated guideway" id="_8981"/>
              <xs:enumeration value="cable cars" id="_8982"/>
              <xs:enumeration value="monorail" id="_8983"/>
              <xs:enumeration value="air travel" id="_8984"/>
              <xs:enumeration value="hitch hitching" id="_8985"/>
              <xs:enumeration value="walk" id="_8986"/>
           </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:pattern value="\[.+\].*"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="local:TransitMode" />
        </xs:simpleType>
     </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.46 Data Element: DE_Transit Operations

Use: The ITIS enumeration list commonly referred to as "Transit Operations," is assigned the upper byte
value of [42] (which provides for value ranges from 10752 to 11007, inclusive). This list is formally called

"TransitOperations" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 53 different phrases. The remaining 74 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 10880).

ASN.1 Representation:
```
TransitOperations ::= ENUMERATED  {
    unknown-transit-problem                       (10753),
    sleeping-customer                             (10754),
    assault-on-passenger                          (10755),
    assault-on-employee                           (10756),
    broken-seat                                   (10757),
    bus-alarm                                     (10758),
    crime-or-drug-deal                            (10759),
    eating-on-board                               (10760),
    equipment-problem-with-air-conditioning       (10761),
    equipment-problem-with-air-system             (10762),
    equipment-problem-with-brakes                 (10763),
    equipment-problem-with-chassis-or-suspension  (10764),
    equipment-problem-with-cooling-system         (10765),
    equipment-problem-with-doors                  (10766),
    equipment-problem-with-electrical             (10767),
    equipment-problem-with-engine                 (10768),
    equipment-problem-with-exterior-or-body       (10769),
    equipment-problem-with-fare-collection        (10770),
    equipment-problem-with-fuel-or-exhaust        (10771),
    equipment-problem-with-horn                   (10772),
    equipment-problem-with-interior               (10773),
    equipment-problem-with-liftkneeling           (10774),
    equipment-problem-with-lights                 (10775),
    equipment-problem-with-lubrication            (10776),
    equipment-problem-with-radio-or-communication (10777),
    equipment-problem-with-signs                  (10778),
    equipment-problem-with-steering               (10779),
    equipment-problem-with-tires                  (10780),
    equipment-problem-with-transmission           (10781),
    equipment-problem-with-unknown-alarm          (10782),
    equipment-problem-with-wipers                 (10783),
    fare-dispute-expired-pass                     (10784),
    fare-dispute-expired-transfer                 (10785),
    fare-dispute-expired-upgrade                  (10786),
    fare-dispute-other                            (10787),
    fare-dispute-refuses-to-pay                   (10788),
    lift-passenger-cycle-completed                (10789),
    lift-passenger-ready-to-alight                (10790),
    lift-passenger-ready-to-board                 (10791),
    lost-article                                  (10792),
    objects-thrown                                (10793),
    passenger-accident-alighting                  (10794),
    passenger-accident-boarding                   (10795),
    passenger-accident-fallen-on-board            (10796),
    passenger-load                                (10797),
    passenger-accident-other                      (10798),
    passenger-sick-or-injured                     (10799),
    right-of-way                                  (10800),
    theft                                         (10801),
    theft-of-service                              (10802),
    waiting-to-get-relief-for-schedule-break      (10803),
    waiting-to-get-relief-after-run-is-finished   (10804),
    waiting-to-provide-relief                     (10805),
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:
```
<xs:simpleType name="TransitOperations" >
     <xs:union>
         <xs:simpleType>
```

- 184 -

```
                <xs:restriction base="xs:unsignedInt">
                    <xs:minInclusive value="10752"/>
                    <xs:maxInclusive value="11007"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:enumeration value="unknown transit problem" id="_10753"/>
                    <xs:enumeration value="sleeping customer" id="_10754"/>
                    <xs:enumeration value="assault on passenger" id="_10755"/>
                    <xs:enumeration value="assault on employee" id="_10756"/>
                    <xs:enumeration value="broken seat" id="_10757"/>
                    <xs:enumeration value="bus alarm" id="_10758"/>
                    <xs:enumeration value="crime or drug deal" id="_10759"/>
                    <xs:enumeration value="eating on board" id="_10760"/>
                    <xs:enumeration value="equipment problem with air conditioning"
id="_10761"/>
                    <xs:enumeration value="equipment problem with air system" id="_10762"/>
                    <xs:enumeration value="equipment problem with brakes" id="_10763"/>
                    <xs:enumeration value="equipment problem with chassis or suspension"
id="_10764"/>
                    <xs:enumeration value="equipment problem with cooling system"
id="_10765"/>
                    <xs:enumeration value="equipment problem with doors" id="_10766"/>
                    <xs:enumeration value="equipment problem with electrical" id="_10767"/>
                    <xs:enumeration value="equipment problem with engine" id="_10768"/>
                    <xs:enumeration value="equipment problem with exterior or body"
id="_10769"/>
                    <xs:enumeration value="equipment problem with fare collection"
id="_10770"/>
                    <xs:enumeration value="equipment problem with fuel or exhaust"
id="_10771"/>
                    <xs:enumeration value="equipment problem with horn" id="_10772"/>
                    <xs:enumeration value="equipment problem with interior" id="_10773"/>
                    <xs:enumeration value="equipment problem with liftkneeling" id="_10774"/>
                    <xs:enumeration value="equipment problem with lights" id="_10775"/>
                    <xs:enumeration value="equipment problem with lubrication" id="_10776"/>
                    <xs:enumeration value="equipment problem with radio or communication"
id="_10777"/>
                    <xs:enumeration value="equipment problem with signs" id="_10778"/>
                    <xs:enumeration value="equipment problem with steering" id="_10779"/>
                    <xs:enumeration value="equipment problem with tires" id="_10780"/>
                    <xs:enumeration value="equipment problem with transmission" id="_10781"/>
                    <xs:enumeration value="equipment problem with unknown alarm" id="_10782"/>
                    <xs:enumeration value="equipment problem with wipers" id="_10783"/>
                    <xs:enumeration value="fare dispute expired pass" id="_10784"/>
                    <xs:enumeration value="fare dispute expired transfer" id="_10785"/>
                    <xs:enumeration value="fare dispute expired upgrade" id="_10786"/>
                    <xs:enumeration value="fare dispute other" id="_10787"/>
                    <xs:enumeration value="fare dispute refuses to pay" id="_10788"/>
                    <xs:enumeration value="lift passenger cycle completed" id="_10789"/>
                    <xs:enumeration value="lift passenger ready to alight" id="_10790"/>
                    <xs:enumeration value="lift passenger ready to board" id="_10791"/>
                    <xs:enumeration value="lost article" id="_10792"/>
                    <xs:enumeration value="objects thrown" id="_10793"/>
                    <xs:enumeration value="passenger accident alighting" id="_10794"/>
                    <xs:enumeration value="passenger accident boarding" id="_10795"/>
                    <xs:enumeration value="passenger accident fallen on board" id="_10796"/>
                    <xs:enumeration value="passenger load" id="_10797"/>
                    <xs:enumeration value="passenger accident other" id="_10798"/>
                    <xs:enumeration value="passenger sick or injured" id="_10799"/>
                    <xs:enumeration value="right of way" id="_10800"/>
                    <xs:enumeration value="theft" id="_10801"/>
                    <xs:enumeration value="theft of service" id="_10802"/>
                    <xs:enumeration value="waiting to get relief for schedule break"
id="_10803"/>
                    <xs:enumeration value="waiting to get relief after run is finished"
id="_10804"/>
                    <xs:enumeration value="waiting to provide relief" id="_10805"/>
                </xs:restriction>
            </xs:simpleType >
```

```
            <xs:simpleType>
               <xs:restriction base="xs:string">
                  <xs:pattern value="\[.+\].*"/>
               </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
               <xs:restriction base="local:TransitOperations" />
            </xs:simpleType>
      </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.47 Data Element: DE_Traveler Group Affected

Use: The ITIS enumeration list commonly referred to as "Traveler Group Affected," is assigned the upper byte value of [37] (which provides for value ranges from 9472 to 9727, inclusive). This list is formally called "TravelerGroupAffected" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 15 different phrases. The remaining 112 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 9600).

ASN.1 Representation:
```
TravelerGroupAffected ::= ENUMERATED  {
    through-traffic                 (9473),
    holiday-traffic                 (9474),
    residents                       (9475),
    visitors                        (9476),
    long-distance-traffic           (9477),
    local-traffic                   (9478),
    regional-traffic                (9479),
    arrivals                        (9480),
    departures                      (9481),
    airline-travelers               (9482),
    commuter-airline-travelers      (9483),
    domestic-airline-travelers      (9484),
    international-airline-travelers (9485),
    pedestrians                     (9486),
    bicyclists                      (9487),  -- Hint: may be used as a traveler
                                            -- restriction, as in "bicycles prohibited on
                                            -- subways during rush hour" or "road closed
                                            -- to bicyclists"
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:
```
<xs:simpleType name="TravelerGroupAffected" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="9472"/>
              <xs:maxInclusive value="9727"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="through traffic" id="_9473"/>
              <xs:enumeration value="holiday traffic" id="_9474"/>
              <xs:enumeration value="residents" id="_9475"/>
              <xs:enumeration value="visitors" id="_9476"/>
              <xs:enumeration value="long distance traffic" id="_9477"/>
              <xs:enumeration value="local traffic" id="_9478"/>
```

```
                    <xs:enumeration value="regional traffic" id="_9479"/>
                    <xs:enumeration value="arrivals" id="_9480"/>
                    <xs:enumeration value="departures" id="_9481"/>
                    <xs:enumeration value="airline travelers" id="_9482"/>
                    <xs:enumeration value="commuter airline travelers" id="_9483"/>
                    <xs:enumeration value="domestic airline travelers" id="_9484"/>
                    <xs:enumeration value="international airline travelers" id="_9485"/>
                    <xs:enumeration value="pedestrians" id="_9486"/>
                    <xs:enumeration value="bicyclists" id="_9487"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:TravelerGroupAffected" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.48 Data Element: DE_Unit Values

Use: The ITIS enumeration list commonly referred to as "Unit Values," is assigned the upper byte value of [34] (which provides for value ranges from 8704 to 8959, inclusive). This list is formally called "Units" in the ASN.1 and XML productions. The items in this enumeration list are not allowed to be used as an event category classification. This list contains a total of 63 different phrases, divided into 5 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 64 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 8832).

ASN.1 Representation:
```
Units ::= ENUMERATED  {
    -- Areas,  Distances  &  Speeds
    square-feet           (8705),
    square-meters         (8706),
    acres                 (8707),
    hectares              (8708),
    inches                (8709),
    feet                  (8710),
    mile                  (8711),   -- Hint: used for offset as in "at mile 123"
                                    -- Alternative Rendering: milepost marker
    miles                 (8712),   -- Hint: Used for distance, as in "ending 5 miles"
    nautical-miles        (8713),
    millimeters           (8714),
    meters                (8715),
    kilometer             (8716),   -- Hint: used for offset as in "at kilometer 123"
    kilometers            (8717),
    feet-per-second       (8718),
    meters-per-second     (8719),
    mPH                   (8720),
    kPH                   (8721),
    knots                 (8722),
    elevation             (8766),   -- NEW: Typically followed by value and units
    -- Times,  Days  &  Dates
    aM                    (8723),   -- Both a time value and a radio band value.  A
                                    -- number value may PRECEDE the unit value used in
                                    -- representing the frequency of a radio station
    pM                    (8724),
    holiday               (8726),
```

- 187 -

```
seconds                 (8727),
minutes                 (8728),
hours                   (8729),
days                    (8730),  -- Hint: useful for events occurring for at least 24
                                 -- hours
weeks                   (8731),
months                  (8732),
other-times             (8767),  -- NEW: Typically used to represent a "default"
                                 -- allowed condition
-- Days of the Week
xSunday                 (8758),  -- NEW:
xMonday                 (8759),  -- NEW:
xTuesday                (8760),  -- NEW:
xWednesday              (8761),  -- NEW:
xThursday               (8762),  -- NEW:
xFriday                 (8763),  -- NEW:
xSaturday               (8764),  -- NEW:
weekdays                (8765),  -- NEW: Alt text: Mon-Fri
weekends                (8725),  -- In general date/time values can be better coded in
                                 -- other ways in most message sets
-- Temps, Weights, Masses and Measurements
degrees                 (8733),  -- Used for latitude, longitude and bearing measured
                                 -- clockwise from North
degrees-Celsius         (8734),  -- Alternate renderings possible
degrees-Fahrenheit      (8735),  -- Alternate renderings possible
grams                   (8736),
kilograms               (8737),  -- Also called a metric ton (1000kg or ~2204 lbs)
ounces                  (8738),
pounds                  (8739),
tons                    (8740),  -- English Units (2000 lbs = 1 ton)
fluid-ounces            (8741),
gallons                 (8742),
milliliters             (8743),
liters                  (8744),
kilograms-per-lane-mile (8745),
tons-per-lane-mile      (8746),
-- Misc.
dollar                  (8747),  -- Alternative rendering: dollar symbol  Not to be
                                 -- used as the default value for this category
percent                 (8748),  -- Alternative rendering: percent symbol
grade                   (8757),  -- NEW: Typically preceded by a percent value entry
time-delimiter          (8749),  -- Alternative rendering: "-"
dollars                 (8750),  -- Alternative rendering can use local currency sign
flight-number           (8751),  -- A number value may PRECEDE the unit value in use
person-people           (8752),
response-plan           (8753),  -- A value may PRECEDE the unit value in use
                                 -- (involving a combination of numbers and / or
                                 -- letters)
placard-type            (8754),  -- For hazmat class and division type designations, a
                                 -- value may PRECEDE the unit value in use
placard-number          (8755),  -- For chemical designations, a value may PRECEDE the
                                 -- unit value in use
fM                      (8756),  -- A number value may PRECEDE the unit value in use
                                 -- representing the frequency of a radio station
... -- #LOCAL_CONTENT_ITIS
}
-- Used in conjunction with # values.  In many ITS messages there are specific
-- place holders (data elements) in the message set to send these values.  This
-- category shall not be used to circumvent message sets which support various units
-- in this way
```

XML Representation:
```
<xs:simpleType name="Units" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="8704"/>
                <xs:maxInclusive value="8959"/>
            </xs:restriction>
        </xs:simpleType>
```

```
<xs:simpleType>
   <xs:restriction base="xs:string">
      <xs:enumeration value="square feet" id="_8705"/>
      <xs:enumeration value="square meters" id="_8706"/>
      <xs:enumeration value="acres" id="_8707"/>
      <xs:enumeration value="hectares" id="_8708"/>
      <xs:enumeration value="inches" id="_8709"/>
      <xs:enumeration value="feet" id="_8710"/>
      <xs:enumeration value="mile" id="_8711"/>
      <xs:enumeration value="miles" id="_8712"/>
      <xs:enumeration value="nautical miles" id="_8713"/>
      <xs:enumeration value="millimeters" id="_8714"/>
      <xs:enumeration value="meters" id="_8715"/>
      <xs:enumeration value="kilometer" id="_8716"/>
      <xs:enumeration value="kilometers" id="_8717"/>
      <xs:enumeration value="feet per second" id="_8718"/>
      <xs:enumeration value="meters per second" id="_8719"/>
      <xs:enumeration value="mPH" id="_8720"/>
      <xs:enumeration value="kPH" id="_8721"/>
      <xs:enumeration value="knots" id="_8722"/>
      <xs:enumeration value="elevation" id="_8766"/>
      <xs:enumeration value="aM" id="_8723"/>
      <xs:enumeration value="pM" id="_8724"/>
      <xs:enumeration value="holiday" id="_8726"/>
      <xs:enumeration value="seconds" id="_8727"/>
      <xs:enumeration value="minutes" id="_8728"/>
      <xs:enumeration value="hours" id="_8729"/>
      <xs:enumeration value="days" id="_8730"/>
      <xs:enumeration value="weeks" id="_8731"/>
      <xs:enumeration value="months" id="_8732"/>
      <xs:enumeration value="other times" id="_8767"/>
      <xs:enumeration value="xSunday" id="_8758"/>
      <xs:enumeration value="xMonday" id="_8759"/>
      <xs:enumeration value="xTuesday" id="_8760"/>
      <xs:enumeration value="xWednesday" id="_8761"/>
      <xs:enumeration value="xThursday" id="_8762"/>
      <xs:enumeration value="xFriday" id="_8763"/>
      <xs:enumeration value="xSaturday" id="_8764"/>
      <xs:enumeration value="weekdays" id="_8765"/>
      <xs:enumeration value="weekends" id="_8725"/>
      <xs:enumeration value="degrees" id="_8733"/>
      <xs:enumeration value="degrees Celsius" id="_8734"/>
      <xs:enumeration value="degrees Fahrenheit" id="_8735"/>
      <xs:enumeration value="grams" id="_8736"/>
      <xs:enumeration value="kilograms" id="_8737"/>
      <xs:enumeration value="ounces" id="_8738"/>
      <xs:enumeration value="pounds" id="_8739"/>
      <xs:enumeration value="tons" id="_8740"/>
      <xs:enumeration value="fluid ounces" id="_8741"/>
      <xs:enumeration value="gallons" id="_8742"/>
      <xs:enumeration value="milliliters" id="_8743"/>
      <xs:enumeration value="liters" id="_8744"/>
      <xs:enumeration value="kilograms per lane mile" id="_8745"/>
      <xs:enumeration value="tons per lane mile" id="_8746"/>
      <xs:enumeration value="dollar" id="_8747"/>
      <xs:enumeration value="percent" id="_8748"/>
      <xs:enumeration value="grade" id="_8757"/>
      <xs:enumeration value="time delimiter" id="_8749"/>
      <xs:enumeration value="dollars" id="_8750"/>
      <xs:enumeration value="flight number" id="_8751"/>
      <xs:enumeration value="person people" id="_8752"/>
      <xs:enumeration value="response plan" id="_8753"/>
      <xs:enumeration value="placard type" id="_8754"/>
      <xs:enumeration value="placard number" id="_8755"/>
      <xs:enumeration value="fM" id="_8756"/>
   </xs:restriction>
</xs:simpleType >
<xs:simpleType>
   <xs:restriction base="xs:string">
      <xs:pattern value="\[.+\].*"/>
   </xs:restriction>
```

```
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="local:Units" />
        </xs:simpleType>
     </xs:union>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

6.49 Data Element: DE_Unusual Driving

Use: The ITIS enumeration list commonly referred to as "Unusual Driving," is assigned the upper byte value of [07] (which provides for value ranges from 1792 to 2047, inclusive). This list is formally called "UnusualDriving" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 8 different phrases, divided into 2 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 119 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 1920).

ASN.1 Representation:
```
UnusualDriving ::= ENUMERATED  {
   vehicle-traveling-wrong-way       (1793),
   reckless-driver                   (1794),  -- Alternative Rendering:  erratic driver
   prohibited-vehicle-on-roadway     (1795),
   emergency-vehicles-on-roadway     (1796),
   high-speed-emergency-vehicles     (1797),
   high-speed-chase                  (1798),
   -- Cancel Types
   dangerous-vehicle-warning-cleared (1918),
   emergency-vehicle-warning-cleared (1919),
   ... -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:
```
<xs:simpleType name="UnusualDriving" >
    <xs:union>
       <xs:simpleType>
          <xs:restriction base="xs:unsignedInt">
             <xs:minInclusive value="1792"/>
             <xs:maxInclusive value="2047"/>
          </xs:restriction>
       </xs:simpleType>
       <xs:simpleType>
          <xs:restriction base="xs:string">
             <xs:enumeration value="vehicle traveling wrong way" id="_1793"/>
             <xs:enumeration value="reckless driver" id="_1794"/>
             <xs:enumeration value="prohibited vehicle on roadway" id="_1795"/>
             <xs:enumeration value="emergency vehicles on roadway" id="_1796"/>
             <xs:enumeration value="high speed emergency vehicles" id="_1797"/>
             <xs:enumeration value="high speed chase" id="_1798"/>
             <xs:enumeration value="dangerous vehicle warning cleared" id="_1918"/>
             <xs:enumeration value="emergency vehicle warning cleared" id="_1919"/>
          </xs:restriction>
       </xs:simpleType >
       <xs:simpleType>
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```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.50 Data Element: DE_Valid Maneuvers

Use: The ITIS enumeration list commonly referred to as "Valid Maneuvers," is assigned the upper byte
value of [44] (which provides for value ranges from 11264 to 11519, inclusive). This list is formally called
"ValidManeuvers" in the ASN.1 and XML productions. The items in this enumeration list are not allowed
to be used as an event category classification. This list contains a total of 128 different phrases. Also
observe that this list contains more than the normal limit of 127 entries for "national" phrases. Should
additional phrases need to be added to this list, then will be added starting with a value of 11393 and
proceeding upward from that point. Any local values to be added should be aware of this.

ASN.1 Representation:
```
ValidManeuvers ::= ENUMERATED   {
    prohibit-None-Allowed-LU-LT-L45-S-R45-RT-RU (11264),   -- NEW:
    prohibit-RU-Allowed-LU-LT-L45-S-R45-RT         (11265),   -- NEW: All Maneuvers allowed
    prohibit-RT-Allowed-LU-LT-L45-S-R45-RU         (11266),   -- NEW:
    prohibit-RT-RU-Allowed-LU-LT-L45-S-R45         (11267),   -- NEW:
    prohibit-R45-Allowed-LU-LT-L45-S-RT-RU         (11268),   -- NEW:
    prohibit-R45-RU-Allowed-LU-LT-L45-S-RT         (11269),   -- NEW:
    prohibit-R45-RT-Allowed-LU-LT-L45-S-RU         (11270),   -- NEW:
    prohibit-R45-RT-RU-Allowed-LU-LT-L45-S         (11271),   -- NEW: Left or Straight Only
                                                              -- (R3-6), Right Turn prohibited
    prohibit-S-Allowed-LU-LT-L45-R45-RT-RU         (11272),   -- NEW:
    prohibit-S-RU-Allowed-LU-LT-L45-R45-RT         (11273),   -- NEW:
    prohibit-S-RT-Allowed-LU-LT-L45-R45-RU         (11274),   -- NEW:
    prohibit-S-RT-RU-Allowed-LU-LT-L45-R45         (11275),   -- NEW:
    prohibit-S-R45-Allowed-LU-LT-L45-RT-RU         (11276),   -- NEW:
    prohibit-S-R45-RU-Allowed-LU-LT-L45-RT         (11277),   -- NEW:
    prohibit-S-R45-RT-Allowed-LU-LT-L45-RU         (11278),   -- NEW:
    prohibit-S-R45-RT-RU-Allowed-LU-LT-L45         (11279),   -- NEW:
    prohibit-L45-Allowed-LU-LT-S-R45-RT-RU         (11280),   -- NEW: Left 45 deg turn
                                                              -- prohibited
    prohibit-L45-RU-Allowed-LU-LT-S-R45-RT         (11281),   -- NEW:
    prohibit-L45-RT-Allowed-LU-LT-S-R45-RU         (11282),   -- NEW:
    prohibit-L45-RT-RU-Allowed-LU-LT-S-R45         (11283),   -- NEW:
    prohibit-L45-R45-Allowed-LU-LT-S-RT-RU         (11284),   -- NEW:
    prohibit-L45-R45-RU-Allowed-LU-LT-S-RT         (11285),   -- NEW:
    prohibit-L45-R45-RT-Allowed-LU-LT-S-RU         (11286),   -- NEW:
    prohibit-L45-R45-RT-RU-Allowed-LU-LT-S         (11287),   -- NEW:
    prohibit-L45-S-Allowed-LU-LT-R45-RT-RU         (11288),   -- NEW:
    prohibit-L45-S-RU-Allowed-LU-LT-R45-RT         (11289),   -- NEW:
    prohibit-L45-S-RT-Allowed-LU-LT-R45-RU         (11290),   -- NEW:
    prohibit-L45-S-RT-RU-Allowed-LU-LT-R45         (11291),   -- NEW:
    prohibit-L45-S-R45-Allowed-LU-LT-RT-RU         (11292),   -- NEW:
    prohibit-L45-S-R45-RU-Allowed-LU-LT-RT         (11293),   -- NEW:
    prohibit-L45-S-R45-RT-Allowed-LU-LT-RU         (11294),   -- NEW:
    prohibit-L45-S-R45-RT-RU-Allowed-LU-LT         (11295),   -- NEW: Left U-Turn and Left
                                                              -- Turn Allowed
    prohibit-LT-Allowed-LU-L45-S-R45-RT-RU         (11296),   -- NEW: Left Turn Prohibited
                                                              -- (R3-2)
    prohibit-LT-RU-Allowed-LU-L45-S-R45-RT         (11297),   -- NEW:
    prohibit-LT-RT-Allowed-LU-L45-S-R45-RU         (11298),   -- NEW: Left and Right Turn
                                                              -- Prohibited  (R3-3), Straight
                                                              -- Only
    prohibit-LT-RT-RU-Allowed-LU-L45-S-R45         (11299),   -- NEW:
    prohibit-LT-R45-Allowed-LU-L45-S-RT-RU         (11300),   -- NEW:
    prohibit-LT-R45-RU-Allowed-LU-L45-S-RT         (11301),   -- NEW:
    prohibit-LT-R45-RT-Allowed-LU-L45-S-RU         (11302),   -- NEW:
    prohibit-LT-R45-RT-RU-Allowed-LU-L45-S         (11303),   -- NEW:
    prohibit-LT-S-Allowed-LU-L45-R45-RT-RU         (11304),   -- NEW: Straight Ahead
                                                              -- Prohibited
    prohibit-LT-S-RU-Allowed-LU-L45-R45-RT         (11305),   -- NEW:
    prohibit-LT-S-RT-Allowed-LU-L45-R45-RU         (11306),   -- NEW:
    prohibit-LT-S-RT-RU-Allowed-LU-L45-R45         (11307),   -- NEW:
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- 191 -

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prohibit-LT-S-R45-Allowed-LU-L45-RT-RU          (11308),   -- NEW:
prohibit-LT-S-R45-RU-Allowed-LU-L45-RT          (11309),   -- NEW:
prohibit-LT-S-R45-RT-Allowed-LU-L45-RU          (11310),   -- NEW:
prohibit-LT-S-R45-RT-RU-Allowed-LU-L45          (11311),   -- NEW:
prohibit-LT-L45-Allowed-LU-S-R45-RT-RU          (11312),   -- NEW:
prohibit-LT-L45-RU-Allowed-LU-S-R45-RT          (11313),   -- NEW:
prohibit-LT-L45-RT-Allowed-LU-S-R45-RU          (11314),   -- NEW:
prohibit-LT-L45-RT-RU-Allowed-LU-S-R45          (11315),   -- NEW:
prohibit-LT-L45-R45-Allowed-LU-S-RT-RU          (11316),   -- NEW:
prohibit-LT-L45-R45-RU-Allowed-LU-S-RT          (11317),   -- NEW:
prohibit-LT-L45-R45-RT-Allowed-LU-S-RU          (11318),   -- NEW:
prohibit-LT-L45-R45-RT-RU-Allowed-LU-S          (11319),   -- NEW:
prohibit-LT-L45-S-Allowed-LU-R45-RT-RU          (11320),   -- NEW:
prohibit-LT-L45-S-RU-Allowed-LU-R45-RT          (11321),   -- NEW:
prohibit-LT-L45-S-RT-Allowed-LU-R45-RU          (11322),   -- NEW:
prohibit-LT-L45-S-RT-RU-Allowed-LU-R45          (11323),   -- NEW:
prohibit-LT-L45-S-R45-Allowed-LU-RT-RU          (11324),   -- NEW:
prohibit-LT-L45-S-R45-RU-Allowed-LU-RT          (11325),   -- NEW:
prohibit-LT-L45-S-R45-RT-Allowed-LU-RU          (11326),   -- NEW:
prohibit-LT-L45-S-R45-RT-RU-Allowed-LU          (11327),   -- NEW: Left U-Turn Allowed
prohibit-LU-Allowed-LT-L45-S-R45-RT-RU          (11328),   -- NEW: Left U-Turn Prohibited
                                                           -- (R3-4)
prohibit-LU-RU-Allowed-LT-L45-S-R45-RT          (11329),   -- NEW:
prohibit-LU-RT-Allowed-LT-L45-S-R45-RU          (11330),   -- NEW:
prohibit-LU-RT-RU-Allowed-LT-L45-S-R45          (11331),   -- NEW:
prohibit-LU-R45-Allowed-LT-L45-S-RT-RU          (11332),   -- NEW:
prohibit-LU-R45-RU-Allowed-LT-L45-S-RT          (11333),   -- NEW:
prohibit-LU-R45-RT-Allowed-LT-L45-S-RU          (11334),   -- NEW:
prohibit-LU-R45-RT-RU-Allowed-LT-L45-S          (11335),   -- NEW:
prohibit-LU-S-Allowed-LT-L45-R45-RT-RU          (11336),   -- NEW:
prohibit-LU-S-RU-Allowed-LT-L45-R45-RT          (11337),   -- NEW:
prohibit-LU-S-RT-Allowed-LT-L45-R45-RU          (11338),   -- NEW:
prohibit-LU-S-RT-RU-Allowed-LT-L45-R45          (11339),   -- NEW:
prohibit-LU-S-R45-Allowed-LT-L45-RT-RU          (11340),   -- NEW:
prohibit-LU-S-R45-RU-Allowed-LT-L45-RT          (11341),   -- NEW:
prohibit-LU-S-R45-RT-Allowed-LT-L45-RU          (11342),   -- NEW:
prohibit-LU-S-R45-RT-RU-Allowed-LT-L45          (11343),   -- NEW:
prohibit-LU-L45-Allowed-LT-S-R45-RT-RU          (11344),   -- NEW:
prohibit-LU-L45-RU-Allowed-LT-S-R45-RT          (11345),   -- NEW:
prohibit-LU-L45-RT-Allowed-LT-S-R45-RU          (11346),   -- NEW:
prohibit-LU-L45-RT-RU-Allowed-LT-S-R45          (11347),   -- NEW:
prohibit-LU-L45-R45-Allowed-LT-S-RT-RU          (11348),   -- NEW:
prohibit-LU-L45-R45-RU-Allowed-LT-S-RT          (11349),   -- NEW:
prohibit-LU-L45-R45-RT-Allowed-LT-S-RU          (11350),   -- NEW:
prohibit-LU-L45-R45-RT-RU-Allowed-LT-S          (11351),   -- NEW: Left Turn and Straight
                                                           -- Ahead Only
prohibit-LU-L45-S-Allowed-LT-R45-RT-RU          (11352),   -- NEW:
prohibit-LU-L45-S-RU-Allowed-LT-R45-RT          (11353),   -- NEW:
prohibit-LU-L45-S-RT-Allowed-LT-R45-RU          (11354),   -- NEW:
prohibit-LU-L45-S-RT-RU-Allowed-LT-R45          (11355),   -- NEW:
prohibit-LU-L45-S-R45-Allowed-LT-RT-RU          (11356),   -- NEW:
prohibit-LU-L45-S-R45-RU-Allowed-LT-RT          (11357),   -- NEW: Left Turn and Right Turn
                                                           -- Only
prohibit-LU-L45-S-R45-RT-Allowed-LT-RU          (11358),   -- NEW:
prohibit-LU-L45-S-R45-RT-RU-Allowed-LT          (11359),   -- NEW: Left Turn Only  (R3-5)
prohibit-LU-LT-Allowed-L45-S-R45-RT-RU          (11360),   -- NEW: Left U-Turn and Left
                                                           -- Turn Prohibited  (R3-18)
prohibit-LU-LT-RU-Allowed-L45-S-R45-RT          (11361),   -- NEW:
prohibit-LU-LT-RT-Allowed-L45-S-R45-RU          (11362),   -- NEW:
prohibit-LU-LT-RT-RU-Allowed-L45-S-R45          (11363),   -- NEW:
prohibit-LU-LT-R45-Allowed-L45-S-RT-RU          (11364),   -- NEW:
prohibit-LU-LT-R45-RU-Allowed-L45-S-RT          (11365),   -- NEW:
prohibit-LU-LT-R45-RT-Allowed-L45-S-RU          (11366),   -- NEW:
prohibit-LU-LT-R45-RT-RU-Allowed-L45-S          (11367),   -- NEW:
prohibit-LU-LT-S-Allowed-L45-R45-RT-RU          (11368),   -- NEW:
prohibit-LU-LT-S-RU-Allowed-L45-R45-RT          (11369),   -- NEW:
prohibit-LU-LT-S-RT-Allowed-L45-R45-RU          (11370),   -- NEW:
prohibit-LU-LT-S-RT-RU-Allowed-L45-R45          (11371),   -- NEW:
prohibit-LU-LT-S-R45-Allowed-L45-RT-RU          (11372),   -- NEW:
prohibit-LU-LT-S-R45-RU-Allowed-L45-RT          (11373),   -- NEW:
prohibit-LU-LT-S-R45-RT-Allowed-L45-RU          (11374),   -- NEW:
```

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   prohibit-LU-LT-S-R45-RT-RU-Allowed-L45        (11375),   -- NEW:
   prohibit-LU-LT-L45-Allowed-S-R45-RT-RU        (11376),   -- NEW: Right Turn or Straight
                                                            -- Only
   prohibit-LU-LT-L45-RU-Allowed-S-R45-RT        (11377),   -- NEW:
   prohibit-LU-LT-L45-RT-Allowed-S-R45-RU        (11378),   -- NEW:
   prohibit-LU-LT-L45-RT-RU-Allowed-S-R45        (11379),   -- NEW:
   prohibit-LU-LT-L45-R45-Allowed-S-RT-RU        (11380),   -- NEW:
   prohibit-LU-LT-L45-R45-RU-Allowed-S-RT        (11381),   -- NEW:
   prohibit-LU-LT-L45-R45-RT-Allowed-S-RU        (11382),   -- NEW:
   prohibit-LU-LT-L45-R45-RT-RU-Allowed-S        (11383),   -- NEW: Straight Ahead Only
                                                            -- (R3-5a)
   prohibit-LU-LT-L45-S-Allowed-R45-RT-RU        (11384),   -- NEW:
   prohibit-LU-LT-L45-S-RU-Allowed-R45-RT        (11385),   -- NEW:
   prohibit-LU-LT-L45-S-RT-Allowed-R45-RU        (11386),   -- NEW:
   prohibit-LU-LT-L45-S-RT-RU-Allowed-R45        (11387),   -- NEW:
   prohibit-LU-LT-L45-S-R45-Allowed-RT-RU        (11388),   -- NEW:
   prohibit-LU-LT-L45-S-R45-RU-Allowed-RT        (11389),   -- NEW: Right Turn Only
   prohibit-LU-LT-L45-S-R45-RT-Allowed-RU        (11390),   -- NEW:
   prohibit-LU-LT-L45-S-R45-RT-RU-Allowed-None   (11391),   -- NEW: All Maneuvers are
                                                            -- Prohibited
    ... -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:

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        <xs:enumeration value="prohibit LU LT S R45 RT RU Allowed L45" id="_11375"/>
        <xs:enumeration value="prohibit LU LT L45 Allowed S R45 RT RU" id="_11376"/>
        <xs:enumeration value="prohibit LU LT L45 RU Allowed S R45 RT" id="_11377"/>
        <xs:enumeration value="prohibit LU LT L45 RT Allowed S R45 RU" id="_11378"/>
        <xs:enumeration value="prohibit LU LT L45 RT RU Allowed S R45" id="_11379"/>
        <xs:enumeration value="prohibit LU LT L45 R45 Allowed S RT RU" id="_11380"/>
        <xs:enumeration value="prohibit LU LT L45 R45 RU Allowed S RT" id="_11381"/>
        <xs:enumeration value="prohibit LU LT L45 R45 RT Allowed S RU" id="_11382"/>
        <xs:enumeration value="prohibit LU LT L45 R45 RT RU Allowed S" id="_11383"/>
        <xs:enumeration value="prohibit LU LT L45 S Allowed R45 RT RU" id="_11384"/>
        <xs:enumeration value="prohibit LU LT L45 S RU Allowed R45 RT" id="_11385"/>
        <xs:enumeration value="prohibit LU LT L45 S RT Allowed R45 RU" id="_11386"/>
        <xs:enumeration value="prohibit LU LT L45 S RT RU Allowed R45" id="_11387"/>
        <xs:enumeration value="prohibit LU LT L45 S R45 Allowed RT RU" id="_11388"/>
        <xs:enumeration value="prohibit LU LT L45 S R45 RU Allowed RT" id="_11389"/>
        <xs:enumeration value="prohibit LU LT L45 S R45 RT Allowed RU" id="_11390"/>
        <xs:enumeration value="prohibit LU LT L45 S R45 RT RU Allowed None" id="_11391"/>
      </xs:restriction>
    </xs:simpleType >
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:pattern value="\[.+\].*"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="local:ValidManeuvers" />
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

In addition, this item may be used by data structures in other ITS standards.

Remarks:

The above maneuvers are abbreviated as follows:

LU	= Left Hand U-Turn	Bit 7
LT	= Left Hand Turn	Bit 6
L45	= Left Hand 45 degree turn (soft left) or curve	Bit 5
S	= Straight Ahead	Bit 4
R45	= Right Hand 45 degree turn (soft right) or curve	Bit 3
RT	= Right Hand Turn	Bit 2
RU	= Right Hand U-Turn	Bit 1 (the LSB bit)

6.51 Data Element: DE_Vehicle Groups Affected

Use: The ITIS enumeration list commonly referred to as "Vehicle Groups Affected," is assigned the upper byte value of [36] (which provides for value ranges from 9216 to 9471, inclusive). This list is formally called "VehicleGroupAffected" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 45 different phrases. The remaining 82 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 9344).

ASN.1 Representation:
```
VehicleGroupAffected ::= ENUMERATED  {
  all-vehicles                          (9217),
```

```
bicycles                                     (9218),
motorcycles                                  (9219),  -- to include mopeds as well
cars                                         (9220),  -- (remapped from ERM value of
                                                      -- zero)
light-vehicles                               (9221),
cars-and-light-vehicles                      (9222),
cars-with-trailers                           (9223),
cars-with-recreational-trailers             (9224),
vehicles-with-trailers                       (9225),
heavy-vehicles                               (9226),
trucks                                       (9227),  -- Use for RG-190
buses                                        (9228),
articulated-buses                            (9229),
school-buses                                 (9230),
vehicles-with-semi-trailers                  (9231),
vehicles-with-double-trailers                (9232),  -- Alternative Rendering:  western
                                                      -- doubles
high-profile-vehicles                        (9233),
wide-vehicles                                (9234),
long-vehicles                                (9235),
hazardous-loads                              (9236),
exceptional-loads                            (9237),
abnormal-loads                               (9238),
convoys                                      (9239),
maintenance-vehicles                         (9240),
delivery-vehicles                            (9241),
vehicles-with-even-numbered-license-plates  (9242),
vehicles-with-odd-numbered-license-plates   (9243),
vehicles-with-parking-permits                (9244),
vehicles-with-catalytic-converters           (9245),
vehicles-without-catalytic-converters        (9246),
gas-powered-vehicles                         (9247),
diesel-powered-vehicles                      (9248),
lPG-vehicles                                 (9249),
military-convoys                             (9250),
military-vehicles                            (9251),
electric-powered-vehicles                    (9252),  -- NEW:
hybrid-powered-vehicles                      (9253),  -- NEW:
inherently-low-emisson-vehicles              (9254),  -- NEW:
commerical-vehicles                          (9255),  -- NEW:
runaway-vehicles                             (9256),  -- NEW:
vehicles-with-lugs                           (9257),  -- NEW:
motor-driven-cycles                          (9258),  -- NEW:
recreational-vehicles                        (9259),  -- NEW:  Use for RVs
non-motorized-vehicles                       (9260),  -- NEW:
traffic                                      (9261),  -- NEW: Refers to all types of
                                                      -- motor traffic, all groups
... -- # LOCAL_CONTENT_ITIS
}
-- Classification of vehicles and types of transport
```

XML Representation:
```
<xs:simpleType name="VehicleGroupAffected" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="9216"/>
                <xs:maxInclusive value="9471"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="all vehicles" id="_9217"/>
                <xs:enumeration value="bicycles" id="_9218"/>
                <xs:enumeration value="motorcycles" id="_9219"/>
                <xs:enumeration value="cars" id="_9220"/>
                <xs:enumeration value="light vehicles" id="_9221"/>
                <xs:enumeration value="cars and light vehicles" id="_9222"/>
                <xs:enumeration value="cars with trailers" id="_9223"/>
                <xs:enumeration value="cars with recreational trailers" id="_9224"/>
```

```
                    <xs:enumeration value="vehicles with trailers" id="_9225"/>
                    <xs:enumeration value="heavy vehicles" id="_9226"/>
                    <xs:enumeration value="trucks" id="_9227"/>
                    <xs:enumeration value="buses" id="_9228"/>
                    <xs:enumeration value="articulated buses" id="_9229"/>
                    <xs:enumeration value="school buses" id="_9230"/>
                    <xs:enumeration value="vehicles with semi trailers" id="_9231"/>
                    <xs:enumeration value="vehicles with double trailers" id="_9232"/>
                    <xs:enumeration value="high profile vehicles" id="_9233"/>
                    <xs:enumeration value="wide vehicles" id="_9234"/>
                    <xs:enumeration value="long vehicles" id="_9235"/>
                    <xs:enumeration value="hazardous loads" id="_9236"/>
                    <xs:enumeration value="exceptional loads" id="_9237"/>
                    <xs:enumeration value="abnormal loads" id="_9238"/>
                    <xs:enumeration value="convoys" id="_9239"/>
                    <xs:enumeration value="maintenance vehicles" id="_9240"/>
                    <xs:enumeration value="delivery vehicles" id="_9241"/>
                    <xs:enumeration value="vehicles with even numbered license plates"
id="_9242"/>
                    <xs:enumeration value="vehicles with odd numbered license plates"
id="_9243"/>
                    <xs:enumeration value="vehicles with parking permits" id="_9244"/>
                    <xs:enumeration value="vehicles with catalytic converters" id="_9245"/>
                    <xs:enumeration value="vehicles without catalytic converters" id="_9246"/>
                    <xs:enumeration value="gas powered vehicles" id="_9247"/>
                    <xs:enumeration value="diesel powered vehicles" id="_9248"/>
                    <xs:enumeration value="lPG vehicles" id="_9249"/>
                    <xs:enumeration value="military convoys" id="_9250"/>
                    <xs:enumeration value="military vehicles" id="_9251"/>
                    <xs:enumeration value="electric powered vehicles" id="_9252"/>
                    <xs:enumeration value="hybrid powered vehicles" id="_9253"/>
                    <xs:enumeration value="inherently low emisson vehicles" id="_9254"/>
                    <xs:enumeration value="commerical vehicles" id="_9255"/>
                    <xs:enumeration value="runaway vehicles" id="_9256"/>
                    <xs:enumeration value="vehicles with lugs" id="_9257"/>
                    <xs:enumeration value="motor driven cycles" id="_9258"/>
                    <xs:enumeration value="recreational vehicles" id="_9259"/>
                    <xs:enumeration value="non motorized vehicles" id="_9260"/>
                    <xs:enumeration value="traffic" id="_9261"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:VehicleGroupAffected" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.52 Data Element: DE_Visibility & Air Quality

Use: The ITIS enumeration list commonly referred to as "Visibility & Air Quality," is assigned the upper
byte value of [21] (which provides for value ranges from 5376 to 5631, inclusive). This list is formally
called "VisibilityAndAirQuality" in the ASN.1 and XML productions. Items from this enumeration list can
be used as an event category classification. This list contains a total of 34 different phrases, divided into 3
further sub-categories (the division into these sub-categories is informational only and other groupings may
also be used). The remaining 93 values up to the lower byte value of [127] are reserved for additional
"national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte
value of 128 and proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 5504).

ASN.1 Representation:

```
VisibilityAndAirQuality ::= ENUMERATED  {
    -- Visibility
    dense-fog              (5377),  -- This index is not to be used as a default value
                                    -- for this category
    fog                    (5378),
    patchy-fog             (5379),
    freezing-fog           (5380),
    ice-fog                (5405),  -- Different than freezing fog, ice fog occurs well
                                    -- below freezing temps and is quite common in the
                                    -- Fairbanks area.
    mist                   (5381),
    haze                   (5382),
    visibility-reduced     (5383),
    visibility-blocked     (5404),  -- Used when signs, trees, etc., block the view
    white-out              (5384),  -- Alternative Rendering:  Snow glare
    blowing-snow           (5385),
    smoke-hazard           (5386),
    spray-hazard           (5387),
    low-sun-glare          (5388),  -- Do not use for snow glare
    snow-glare             (5389),
    blowing-dust           (5390),
    blowing-sand           (5391),  -- Hint: dune accumulations
    dust-storms            (5392),
    sandstorms             (5393),
    -- Air Quality
    air-quality-good       (5394),
    air-quality-fair       (5395),
    air-quality-poor       (5396),
    air-quality-very-poor  (5397),
    severe-exhaust-pollution (5398),
    smog-alert             (5399),
    pollen-count-high      (5400),
    pollen-count-medium    (5401),
    pollen-count-low       (5402),
    swarms-of-insects      (5403),
    -- Cancel Types
    fog-clearing           (5499),
    visibility-improved    (5500),
    fog-forecast-withdrawn (5501),
    pollution-alert-ended  (5502),
    air-quality-improved   (5503)
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:

```
<xs:simpleType name="VisibilityAndAirQuality" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="5376"/>
                <xs:maxInclusive value="5631"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="dense fog" id="_5377"/>
                <xs:enumeration value="fog" id="_5378"/>
                <xs:enumeration value="patchy fog" id="_5379"/>
                <xs:enumeration value="freezing fog" id="_5380"/>
                <xs:enumeration value="ice fog" id="_5405"/>
                <xs:enumeration value="mist" id="_5381"/>
                <xs:enumeration value="haze" id="_5382"/>
                <xs:enumeration value="visibility reduced" id="_5383"/>
                <xs:enumeration value="visibility blocked" id="_5404"/>
                <xs:enumeration value="white out" id="_5384"/>
                <xs:enumeration value="blowing snow" id="_5385"/>
                <xs:enumeration value="smoke hazard" id="_5386"/>
                <xs:enumeration value="spray hazard" id="_5387"/>
                <xs:enumeration value="low sun glare" id="_5388"/>
```

```
                    <xs:enumeration value="snow glare" id="_5389"/>
                    <xs:enumeration value="blowing dust" id="_5390"/>
                    <xs:enumeration value="blowing sand" id="_5391"/>
                    <xs:enumeration value="dust storms" id="_5392"/>
                    <xs:enumeration value="sandstorms" id="_5393"/>
                    <xs:enumeration value="air quality good" id="_5394"/>
                    <xs:enumeration value="air quality fair" id="_5395"/>
                    <xs:enumeration value="air quality poor" id="_5396"/>
                    <xs:enumeration value="air quality very poor" id="_5397"/>
                    <xs:enumeration value="severe exhaust pollution" id="_5398"/>
                    <xs:enumeration value="smog alert" id="_5399"/>
                    <xs:enumeration value="pollen count high" id="_5400"/>
                    <xs:enumeration value="pollen count medium" id="_5401"/>
                    <xs:enumeration value="pollen count low" id="_5402"/>
                    <xs:enumeration value="swarms of insects" id="_5403"/>
                    <xs:enumeration value="fog clearing" id="_5499"/>
                    <xs:enumeration value="visibility improved" id="_5500"/>
                    <xs:enumeration value="fog forecast withdrawn" id="_5501"/>
                    <xs:enumeration value="pollution alert ended" id="_5502"/>
                    <xs:enumeration value="air quality improved" id="_5503"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:VisibilityAndAirQuality" />
            </xs:simpleType>
        </xs:union>
    </xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.53 Data Element: DE_Warning Advice

Use: The ITIS enumeration list commonly referred to as "Warning Advice," is assigned the upper byte value of [27] (which provides for value ranges from 6912 to 7167, inclusive). This list is formally called "WarningAdvice" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 47 different phrases, divided into 3 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 80 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 7040).

ASN.1 Representation:
```
WarningAdvice ::= ENUMERATED {
    risk                                               (6913),  -- Conditions are more
                                                                -- likely than "normal"
    watch                                              (6914),  -- Conditions are
                                                                -- favorable for an
                                                                -- event to occur
    warning                                            (6915),  -- An event has occurred
                                                                -- but is not (yet) near
    alert                                              (6916),  -- An event has occurred
                                                                -- and it is near
    danger                                             (6917),
    danger-of-explosion                                (6918),
    danger-of-fire                                     (6919),
    extra-police-patrols-in-operation                  (6920),
    look-out-for-vehicles-stopped-under-bridges        (6921),
    increased-risk-of-accident                         (6922),
    rescue-and-recovery-work-in-progress-at-sceneREMOVED (6923),  -- No long used, see
```

```
                                                          -- item 2825
police-at-scene                                 (6924),
emergency-vehicles-at-scene                     (6925),
traffic-being-directed-around-accident-area     (6926),
police-directing-traffic                        (6927),
rescue-workers-directing-traffic                (6928),
repairs-in-progress                             (6929),
pilot-car-in-operation                          (6930),
look-out-for-flagger                            (6931),   -- Alternative
                                                          -- Rendering:  look out
                                                          -- for flagman
look-out-for-workers                            (6952),   -- NEW: Alternative
                                                          -- Rendering:  workers
police-checks-in-operation                      (6932),   -- Hint: all types of
                                                          -- checks
truck-check-point                               (6937),
lockdown                                        (6935),
security-check-point                            (6936),
single-occupancy-vehicle-check-point            (6938),
mandatory-speed-limit-in-force                  (6933),
speed-limit-in-force-for-heavy-vehicles         (6934),
behind-you                                      (6950),   -- NEW:
ride-with-traffic                               (6953),   -- NEW:
-- MUTCD Signs
look                                            (6939),   -- NEW:
photo-enforced                                  (6940),   -- NEW:
traffic-signs                                   (6951),   -- NEW:
traffic-laws                                    (6941),   -- NEW:
use-low-gear                                    (6942),   -- NEW:
bridge-ices-before-road                         (6943),   -- NEW:
speed-checked-by-radar                          (6944),   -- NEW:
speed-checked-by-aircraft                       (6945),   -- NEW:
fines                                           (6946),   -- NEW:
fines-higher                                    (6947),   -- NEW:
fines-doubled                                   (6948),   -- NEW:
fines-tripled                                   (6949),   -- NEW:
-- Cancel Types
warning-canceled                                (7034),   -- Canceling a warning
                                                          -- may "revert" to a
                                                          -- watch
watch-canceled                                  (7035),
alert-canceled                                  (7036),   -- Canceling an alert
                                                          -- may "revert" to a
                                                          -- warning
ended                                           (7037),   -- Hint: used for many
                                                          -- sporting / special
                                                          -- events
cleared                                         (7038),
canceled                                        (7039),
... -- # LOCAL_CONTENT_ITIS
}
```

XML Representation:

```xml
<xs:simpleType name="WarningAdvice" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="6912"/>
                <xs:maxInclusive value="7167"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="risk" id="_6913"/>
                <xs:enumeration value="watch" id="_6914"/>
                <xs:enumeration value="warning" id="_6915"/>
                <xs:enumeration value="alert" id="_6916"/>
                <xs:enumeration value="danger" id="_6917"/>
                <xs:enumeration value="danger of explosion" id="_6918"/>
                <xs:enumeration value="danger of fire" id="_6919"/>
```

```
              <xs:enumeration value="extra police patrols in operation" id="_6920"/>
              <xs:enumeration value="look out for vehicles stopped under bridges"
id="_6921"/>
              <xs:enumeration value="increased risk of accident" id="_6922"/>
              <xs:enumeration value="rescue and recovery work in progress at
sceneREMOVED" id="_6923"/>
              <xs:enumeration value="police at scene" id="_6924"/>
              <xs:enumeration value="emergency vehicles at scene" id="_6925"/>
              <xs:enumeration value="traffic being directed around accident area"
id="_6926"/>
              <xs:enumeration value="police directing traffic" id="_6927"/>
              <xs:enumeration value="rescue workers directing traffic" id="_6928"/>
              <xs:enumeration value="repairs in progress" id="_6929"/>
              <xs:enumeration value="pilot car in operation" id="_6930"/>
              <xs:enumeration value="look out for flagger" id="_6931"/>
              <xs:enumeration value="look out for workers" id="_6952"/>
              <xs:enumeration value="police checks in operation" id="_6932"/>
              <xs:enumeration value="truck check point" id="_6937"/>
              <xs:enumeration value="lockdown" id="_6935"/>
              <xs:enumeration value="security check point" id="_6936"/>
              <xs:enumeration value="single occupancy vehicle check point" id="_6938"/>
              <xs:enumeration value="mandatory speed limit in force" id="_6933"/>
              <xs:enumeration value="speed limit in force for heavy vehicles"
id="_6934"/>
              <xs:enumeration value="behind you" id="_6950"/>
              <xs:enumeration value="ride with traffic" id="_6953"/>
              <xs:enumeration value="look" id="_6939"/>
              <xs:enumeration value="photo enforced" id="_6940"/>
              <xs:enumeration value="traffic signs" id="_6951"/>
              <xs:enumeration value="traffic laws" id="_6941"/>
              <xs:enumeration value="use low gear" id="_6942"/>
              <xs:enumeration value="bridge ices before road" id="_6943"/>
              <xs:enumeration value="speed checked by radar" id="_6944"/>
              <xs:enumeration value="speed checked by aircraft" id="_6945"/>
              <xs:enumeration value="fines" id="_6946"/>
              <xs:enumeration value="fines higher" id="_6947"/>
              <xs:enumeration value="fines doubled" id="_6948"/>
              <xs:enumeration value="fines tripled" id="_6949"/>
              <xs:enumeration value="warning canceled" id="_7034"/>
              <xs:enumeration value="watch canceled" id="_7035"/>
              <xs:enumeration value="alert canceled" id="_7036"/>
              <xs:enumeration value="ended" id="_7037"/>
              <xs:enumeration value="cleared" id="_7038"/>
              <xs:enumeration value="canceled" id="_7039"/>
          </xs:restriction>
      </xs:simpleType >
      <xs:simpleType>
          <xs:restriction base="xs:string">
              <xs:pattern value="\[.+\].*"/>
          </xs:restriction>
      </xs:simpleType>
      <xs:simpleType>
          <xs:restriction base="local:WarningAdvice" />
      </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.54 Data Element: DE_Weather Conditions

Use: The ITIS enumeration list commonly referred to as "Weather Conditions," is assigned the upper byte value of [18] (which provides for value ranges from 4608 to 4863, inclusive). This list is formally called "WeatherConditions" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 28 different phrases, divided into 3 further sub-categories (the division into these sub-categories is informational only and other groupings may also be

used). The remaining 99 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 4736).

ASN.1 Representation:
```
WeatherConditions ::= ENUMERATED  {
    -- General Weather
    overcast                (4609),  -- This index is not to be used as a default value
                                     -- for this category
    cloudy                  (4610),
    mostly-cloudy           (4611),
    partly-cloudy           (4612),
    partly-sunny            (4613),
    mostly-sunny            (4614),
    sunny                   (4615),
    fair-skies              (4616),
    clear-skies             (4617),
    mostly-clear            (4618),
    mostly-dry              (4619),
    dry                     (4620),
    uV-index-very-high      (4621),
    uV-index-high           (4622),
    uV-index-moderate       (4623),
    uV-index-low            (4624),
    uV-index-very-low       (4625),
    barometric-pressure     (4626),  -- Typically followed by a number and value
    ozone-alert             (4627),
    -- Lighting Types
    lighting-unknown        (4628),
    artificial-exterior-light (4629),
    artificial-interior-light (4630),
    darkness                (4631),  -- Also used when not lighted
    dusk                    (4632),
    dawn                    (4633),
    moonlight               (4634),
    daylight                (4635),
    -- Cancel Types
    weather-forecast-withdrawn (4735),
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:
```xml
<xs:simpleType name="WeatherConditions" >
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="4608"/>
                <xs:maxInclusive value="4863"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="overcast" id="_4609"/>
                <xs:enumeration value="cloudy" id="_4610"/>
                <xs:enumeration value="mostly cloudy" id="_4611"/>
                <xs:enumeration value="partly cloudy" id="_4612"/>
                <xs:enumeration value="partly sunny" id="_4613"/>
                <xs:enumeration value="mostly sunny" id="_4614"/>
                <xs:enumeration value="sunny" id="_4615"/>
                <xs:enumeration value="fair skies" id="_4616"/>
                <xs:enumeration value="clear skies" id="_4617"/>
                <xs:enumeration value="mostly clear" id="_4618"/>
                <xs:enumeration value="mostly dry" id="_4619"/>
                <xs:enumeration value="dry" id="_4620"/>
                <xs:enumeration value="uV index very high" id="_4621"/>
                <xs:enumeration value="uV index high" id="_4622"/>
                <xs:enumeration value="uV index moderate" id="_4623"/>
                <xs:enumeration value="uV index low" id="_4624"/>
```

```
                    <xs:enumeration value="uV index very low" id="_4625"/>
                    <xs:enumeration value="barometric pressure" id="_4626"/>
                    <xs:enumeration value="ozone alert" id="_4627"/>
                    <xs:enumeration value="lighting unknown" id="_4628"/>
                    <xs:enumeration value="artificial exterior light" id="_4629"/>
                    <xs:enumeration value="artificial interior light" id="_4630"/>
                    <xs:enumeration value="darkness" id="_4631"/>
                    <xs:enumeration value="dusk" id="_4632"/>
                    <xs:enumeration value="dawn" id="_4633"/>
                    <xs:enumeration value="moonlight" id="_4634"/>
                    <xs:enumeration value="daylight" id="_4635"/>
                    <xs:enumeration value="weather forecast withdrawn" id="_4735"/>
                </xs:restriction>
            </xs:simpleType >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:simpleType>
                <xs:restriction base="local:WeatherConditions" />
            </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.55 Data Element: DE_Winds

Use: The ITIS enumeration list commonly referred to as "Winds," is assigned the upper byte value of [20] (which provides for value ranges from 5120 to 5375, inclusive). This list is formally called "Winds" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 15 different phrases, divided into 2 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 112 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 5248).

ASN.1 Representation:
```
Winds ::= ENUMERATED  {
    tornado                     (5121),   -- Note that this can be combined with "alert"
                                          -- "warning" etc.  This index is not to be
                                          -- used as a default value for this category
    hurricane                   (5122),
    hurricane-force-winds       (5123),
    tropical-storm              (5124),
    gale-force-winds            (5125),
    storm-force-winds           (5126),
    strong-winds                (5127),
    moderate-winds              (5128),
    light-winds                 (5129),
    calm                        (5130),
    gusty-winds                 (5131),
    crosswinds                  (5132),
    windy                       (5133),
    -- Cancel Types
    strong-winds-have-eased     (5246),
    strong-wind-forecast-withdrawn (5247),
    ... -- # LOCAL_CONTENT_ITIS
    }
```

XML Representation:
```
<xs:simpleType name="Winds" >
```

- 203 -

```
          <xs:union>
             <xs:simpleType>
                <xs:restriction base="xs:unsignedInt">
                   <xs:minInclusive value="5120"/>
                   <xs:maxInclusive value="5375"/>
                </xs:restriction>
             </xs:simpleType>
             <xs:simpleType>
                <xs:restriction base="xs:string">
                   <xs:enumeration value="tornado" id="_5121"/>
                   <xs:enumeration value="hurricane" id="_5122"/>
                   <xs:enumeration value="hurricane force winds" id="_5123"/>
                   <xs:enumeration value="tropical storm" id="_5124"/>
                   <xs:enumeration value="gale force winds" id="_5125"/>
                   <xs:enumeration value="storm force winds" id="_5126"/>
                   <xs:enumeration value="strong winds" id="_5127"/>
                   <xs:enumeration value="moderate winds" id="_5128"/>
                   <xs:enumeration value="light winds" id="_5129"/>
                   <xs:enumeration value="calm" id="_5130"/>
                   <xs:enumeration value="gusty winds" id="_5131"/>
                   <xs:enumeration value="crosswinds" id="_5132"/>
                   <xs:enumeration value="windy" id="_5133"/>
                   <xs:enumeration value="strong winds have eased" id="_5246"/>
                   <xs:enumeration value="strong wind forecast withdrawn" id="_5247"/>
                </xs:restriction>
             </xs:simpleType >
             <xs:simpleType>
                <xs:restriction base="xs:string">
                   <xs:pattern value="\[.+\].*"/>
                </xs:restriction>
             </xs:simpleType>
             <xs:simpleType>
                <xs:restriction base="local:Winds" />
             </xs:simpleType>
          </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called
DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS
standards.

6.56 Data Element: DE_Winter Driving Index

Use: The ITIS enumeration list commonly referred to as "Winter Driving Index," is assigned the upper
byte value of [25] (which provides for value ranges from 6400 to 6655, inclusive). This list is formally
called "WinterDrivingIndex" in the ASN.1 and XML productions. Items from this enumeration list can be
used as an event category classification. This list contains a total of 6 different phrases. The remaining 121
values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward
from there (in other words, the first value assigned for any local additions to this list would be given the
value 6528).

ASN.1 Representation:
```
WinterDrivingIndex ::= ENUMERATED  {
   driving-conditions-good                 (6401),
   driving-conditions-fair                 (6402),
   difficult-driving-conditions            (6403),
   very-difficult-driving-conditions       (6404),
   hazardous-driving-conditions            (6405),
   extremely-hazardous-driving-conditions (6406),
   ... -- # LOCAL_CONTENT_ITIS
   }
   -- See also the restriction list for phrase items such as chains required
```

XML Representation:
```
<xs:simpleType name="WinterDrivingIndex" >
```

```
        <xs:union>
           <xs:simpleType>
              <xs:restriction base="xs:unsignedInt">
                 <xs:minInclusive value="6400"/>
                 <xs:maxInclusive value="6655"/>
              </xs:restriction>
           </xs:simpleType>
           <xs:simpleType>
              <xs:restriction base="xs:string">
                 <xs:enumeration value="driving conditions good" id="_6401"/>
                 <xs:enumeration value="driving conditions fair" id="_6402"/>
                 <xs:enumeration value="difficult driving conditions" id="_6403"/>
                 <xs:enumeration value="very difficult driving conditions" id="_6404"/>
                 <xs:enumeration value="hazardous driving conditions" id="_6405"/>
                 <xs:enumeration value="extremely hazardous driving conditions"
id="_6406"/>
              </xs:restriction>
           </xs:simpleType >
           <xs:simpleType>
              <xs:restriction base="xs:string">
                 <xs:pattern value="\[.+\].*"/>
              </xs:restriction>
           </xs:simpleType>
           <xs:simpleType>
              <xs:restriction base="local:WinterDrivingIndex" />
           </xs:simpleType>
        </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

6.57 Data Element: DE_Winter Driving Restrictions and Recommendations

Use: The ITIS enumeration list commonly referred to as "Winter Driving Restrictions and Recommendations," is assigned the upper byte value of [24] (which provides for value ranges from 6144 to 6399, inclusive). This list is formally called "WinterDrivingRestrictions" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 13 different phrases, divided into 2 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 114 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 6272).

ASN.1 Representation:
```
WinterDrivingRestrictions ::= ENUMERATED  {
   winter-equipment-recommended      (6145),
   winter-equipment-required         (6146),
   snow-chains-recommended           (6147),
   snow-chains-required              (6148),
   snow-chains-prohibited            (6149),
   studded-tires-prohibited          (6150),
   snow-tires-recommended            (6151),
   snow-tires-required               (6152),
   four-wheel-drive-recommended      (6153),
   four-wheel-drive-required         (6154),
   snow-tires-or-chains-recommended  (6155),
   snow-tires-or-chains-required     (6156),
   -- Cancel Types
   winter-driving-requirements-lifted (6271),  -- In early editions this was incorrectly
                                               -- listed as code 6157
   ... -- # LOCAL_CONTENT_ITIS
   }
```

XML Representation:
```
<xs:simpleType name="WinterDrivingRestrictions" >
     <xs:union>
        <xs:simpleType>
           <xs:restriction base="xs:unsignedInt">
              <xs:minInclusive value="6144"/>
              <xs:maxInclusive value="6399"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:enumeration value="winter equipment recommended" id="_6145"/>
              <xs:enumeration value="winter equipment required" id="_6146"/>
              <xs:enumeration value="snow chains recommended" id="_6147"/>
              <xs:enumeration value="snow chains required" id="_6148"/>
              <xs:enumeration value="snow chains prohibited" id="_6149"/>
              <xs:enumeration value="studded tires prohibited" id="_6150"/>
              <xs:enumeration value="snow tires recommended" id="_6151"/>
              <xs:enumeration value="snow tires required" id="_6152"/>
              <xs:enumeration value="four wheel drive recommended" id="_6153"/>
              <xs:enumeration value="four wheel drive required" id="_6154"/>
              <xs:enumeration value="snow tires or chains recommended" id="_6155"/>
              <xs:enumeration value="snow tires or chains required" id="_6156"/>
              <xs:enumeration value="winter driving requirements lifted" id="_6271"/>
           </xs:restriction>
        </xs:simpleType >
        <xs:simpleType>
           <xs:restriction base="xs:string">
              <xs:pattern value="\[.+\].*"/>
           </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
           <xs:restriction base="local:WinterDrivingRestrictions" />
        </xs:simpleType>
     </xs:union>
</xs:simpleType>
```

Used By: This entry is used directly by one other data structure in this standard, a DF called DF_ITIS_EventType <ASN> <XML>. In addition, this item may be used by data structures in other ITS standards.

- 206 -

7. Data Frame Definitions

Data frames defined in this standard shall consist of the following data frames. Each shall be further divided into specific elements as defined in this clause. Typically, these entries shall be made up of message content internal to this document (made up of DEs that are either atomic or complex) and message content external to this document (from other functional areas and companion volumes). Definitions for these entries are presented in the following subclauses.

The productions of ASN.1 which follows shall be considered normative in nature. While the majority of the normative content is reflected in the actual syntax of the ASN.1 some entries also have additional statements in the ASN.1 comments which shall be considered to be normative as well. In addition, the commentary provided with each entry may also provide additional normative restrictions on the proper use of the entry which shall be followed. The XML productions follow directly from the ASN.1 specifications and the same rules shall be applied.

7.1 Data Frame: DF_ITIS_EventType

Use: The summary data structure of all ITIS codes which can be used to form event categories. Taken from the larger set of complete ITIS codes. A code which identifies the type of event. This is taken from the 40-odd sub ranges of ITIS codes, and often used as a way to provide a top level sorting of the event type. Note that the XML formation provides an outer tag which denotes the category from which the inner element phrase was taken, this is in contrast to the more common way of using the phrases inside the <ITIS> tag. Note the exact spelling of the tags!

ASN.1 Representation:
```
ITISEventType ::= CHOICE {
    trafficConditions                   TrafficConditions,
    accidentsAndIncidents               AccidentsAndIncidents,
    closures                            Closures,
    roadwork                            Roadwork,
    obstruction                         Obstruction,
    delayStatusCancellation             DelayStatusCancellation,
    unusualDriving                      UnusualDriving,
    mobileSituation                     MobileSituation,
    deviceStatus                        DeviceStatus,
    restrictionClass                    RestrictionClass,
    incidentResponseStatus              IncidentResponseStatus,
    disasters                           Disasters,
    disturbances                        Disturbances,
    sportingEvents                      SportingEvents,
    specialEvents                       SpecialEvents,
    parkingInformation                  ParkingInformation,
    systemInformation                   SystemInformation,
    weatherConditions                   WeatherConditions,
    precipitation                       Precipitation,
    winds                               Winds,
    visibilityAndAirQuality             VisibilityAndAirQuality,
    temperature                         Temperature,
    pavementConditions                  PavementConditions,
    winterDrivingRestrictions           WinterDrivingRestrictions,
    winterDrivingIndex                  WinterDrivingIndex,
    suggestionAdvice                    SuggestionAdvice,
    warningAdvice                       WarningAdvice,
    adviceInstructionsRecommendations   AdviceInstructionsRecommendations,
    adviceInstructionsMandatory         AdviceInstructionsMandatory,
    laneRoadway                         LaneRoadway,
    alternateRoute                      AlternateRoute,
    transitMode                         TransitMode,
    vehicleGroupAffected                VehicleGroupAffected,
    travelerGroupAffected               TravelerGroupAffected,
    responderGroupAffected              ResponderGroupAffected,
```

```
    incidentResponseEquipment              IncidentResponseEquipment,
    transitOperations                      TransitOperations,
    regulatorySigns                        RegulatoryAndWarningSigns
    }
    -- the set of  ITIS.ITISgroups
    -- a single code representing the top level grouping of ITIS sub-groups
    -- surrounded by the element tag of its sub group
```

XML Representation:

```xml
<xs:complexType name="ITISEventType" >
    <xs:annotation>
        <xs:documentation>
            the set of  ITIS.ITISgroups
            a single code representing the top level grouping of ITIS sub-groups
            surrounded by the element tag of its sub group
        </xs:documentation>
    </xs:annotation>
    <xs:choice>
        <xs:element name="trafficConditions" type="TrafficConditions" />
        <xs:element name="accidentsAndIncidents" type="AccidentsAndIncidents" />
        <xs:element name="closures" type="Closures" />
        <xs:element name="roadwork" type="Roadwork" />
        <xs:element name="obstruction" type="Obstruction" />
        <xs:element name="delayStatusCancellation" type="DelayStatusCancellation" />
        <xs:element name="unusualDriving" type="UnusualDriving" />
        <xs:element name="mobileSituation" type="MobileSituation" />
        <xs:element name="deviceStatus" type="DeviceStatus" />
        <xs:element name="restrictionClass" type="RestrictionClass" />
        <xs:element name="incidentResponseStatus" type="IncidentResponseStatus" />
        <xs:element name="disasters" type="Disasters" />
        <xs:element name="disturbances" type="Disturbances" />
        <xs:element name="sportingEvents" type="SportingEvents" />
        <xs:element name="specialEvents" type="SpecialEvents" />
        <xs:element name="parkingInformation" type="ParkingInformation" />
        <xs:element name="systemInformation" type="SystemInformation" />
        <xs:element name="weatherConditions" type="WeatherConditions" />
        <xs:element name="precipitation" type="Precipitation" />
        <xs:element name="winds" type="Winds" />
        <xs:element name="visibilityAndAirQuality" type="VisibilityAndAirQuality" />
        <xs:element name="temperature" type="Temperature" />
        <xs:element name="pavementConditions" type="PavementConditions" />
        <xs:element name="winterDrivingRestrictions" type="WinterDrivingRestrictions" />
        <xs:element name="winterDrivingIndex" type="WinterDrivingIndex" />
        <xs:element name="suggestionAdvice" type="SuggestionAdvice" />
        <xs:element name="warningAdvice" type="WarningAdvice" />
        <xs:element name="adviceInstructionsRecommendations"
type="AdviceInstructionsRecommendations" />
        <xs:element name="adviceInstructionsMandatory"
type="AdviceInstructionsMandatory" />
        <xs:element name="laneRoadway" type="LaneRoadway" />
        <xs:element name="alternateRoute" type="AlternateRoute" />
        <xs:element name="transitMode" type="TransitMode" />
        <xs:element name="vehicleGroupAffected" type="VehicleGroupAffected" />
        <xs:element name="travelerGroupAffected" type="TravelerGroupAffected" />
        <xs:element name="responderGroupAffected" type="ResponderGroupAffected" />
        <xs:element name="incidentResponseEquipment" type="IncidentResponseEquipment" />
        <xs:element name="transitOperations" type="TransitOperations" />
    </xs:choice>
</xs:complexType>
<!-- the set of  ITIS.ITISgroups
a single code representing the top level grouping of ITIS sub-groups
surrounded by the element tag of its sub group -->
```

7.2 Data Frame: DF_ITIS-Codes_And_Text

Use: The use of ITIS codes interspersed with free text. The complete set of ITIS codes can be found in Volume Two of the J2540 Standard. This is a set of nealry 1,500 items which are used to encode common events and list items in ITS.

ASN.1 Representation:
```
ITIScodesAndText ::= SEQUENCE (SIZE(1..100)) OF SEQUENCE {
  item CHOICE    {
       itis ITIScodes,
       text ITIStext
       } -- # UNTAGGED
  }
```

XML Representation:
```
<xs:complexType name="ITIScodesAndText" >
   <xs:sequence minOccurs="1" maxOccurs="100">
      <xs:choice >
         <xs:element name="itis" type="ITIScodes" />
         <xs:element name="text" type="ITIStext" />
      </xs:choice>
   </xs:sequence>
</xs:complexType>
```

8. Syntax Rules and Recommendations

The general format for ITIS codes and text allows a sequence composed of a mixture of either a code entry or a text entry to build up the meaning into an expression. This is at times further restricted to fit into constraints of size or encoding, but the fundamental pattern remains. This general format can at times allow multiple valid encoding to be developed by different parties intended to mean the same thing (i.e. *No Parking* versus *Parking Prohibited* versus *Parking Not Allowed*), and hence produce a potential for misinterpretation. This is particularly true for signage where multiple independent phrase thoughts are often combined into one single sign. This section of the standard seeks to avoid this occurrence by providing additional normative and informative rules for the creation of valid syntax using ITIS codes.

It should also be kept in mind that ITIS phrases are themselves used in an enclosing message which may contain additional contextual information about how the phrase or sign is applied,. This is where details such as to which lane(s) a sign should be applied, or for what direction and duration (distance) a sign is to be used, can occur. Consult the specific standard for details of these cases.

8.1 Syntax Overview

This section of the standard makes use of a simple syntax to show what patterns of ITIS codes are allowed in certain use cases and expressions. An overview of this syntax and how to read and interpret the rules and regulations that follow is stated here.

- Sequences of allowed ITIS codes are shown as sets of brackets terms, with each term to imply one or more specific ITIS codes in use, as shown below. Typically the terms inside the brackets will be given simple names to imply the type of ITIS content or general meaning that that they can contain.

    <Term1>   <Term2>   <Term3>
    <Qualifier> <Parking> <Timeframe> *as in:* <No> <Parking> <Anytime>

- Each item inside a bracket can consist of one or more ITIS terms. Zero terms are also allowed (typically marked with the term "optional" in the bracketed text).

- When qualifier terms are included in such a sequence, the implied meaning of the composite term is often the opposite of what the basic term may imply (i.e. Tornado Alert vs Tornado Alert Canceled, Parking Allowed vs No Parking).

- Qualifier terms can appear before or after the term or phrase that they apply to.

- The name found in bracketed terms are defined further in the sections which follow, and can be reused in the patterns defined here. For example, the rules dealing with how numerical values can be expressed ("encoding numbers") can be reused anywhere a numerical value might be needed in an expression.

- Syntax patterns which are defined in the following vocabulary sections can be used as basic pattern on which to build compliant ITIS expressions. This list it intended to be illustrative, not exhaustive, although the rules established herein are normative.

- Numbers shown in this section (typically ITIS code values) in brackets are base ten unless proceeded by "0x" in which case they are base sixteen values.

- The letters "n" used to start some phrases should be removed before display to an end user.

- ITIS phrases shown in this section in their text enumeration forms are typically expressed in brackets and follow the precise text and capitalization defined by that phrase.

- It should be noted that the textual expression of the ITIS phrases is always in lower case. This is due to restrictions of the combined ASN and XML language used and does not apply to how the term might be displayed to an end user. There is no distinguishing emphasis placed on capitalization in the use of ITIS phrases. It is not uncommon for device developers to reformat the final string before presentation to an end user to further refine this.

- When free text needs to be expressed, the form used is to show it bracketed with the text keyword, a semicolon, then the text in question. Note that using the text this way does allow for capitalization in expressions. As an example, the text for the phrase "This is text" would be shown as <text: "This is text">.

- Examples of well formed use show the example in three columns. The first is the raw concept to be sent, the 2nd shows the specific ITIS phrase element in brackets, the final column has the same elements in their encoded value.

- When the resulting expression is rendered for use over the wire in XML, the ITIS and text elements are rendered as per the defined schema for ITIS or the using standard. That is, expressions appear in sequences such that shown below. The expression "Exit Glendora Ave, ahead, 2 miles" would be encoded as:

    <itis>exit</itis>
    <text>Glendora Ave</text>
    <itis>ahead</itis>
    <itis>n2</itis>
    <itis>miles</itis>   93 characters w/overhead

- Note that XML is typically rendered into its textual equivalent form; however, the union of the numerical values allows the below expression to considered equivalent (or any combination of mixed use as well). Typically, this rendering is shorter than the full text format above.

    <itis>11794</itis>
    <text>Glendora Ave</text>
    <itis>13312</itis>
    <itis>12546</itis>
    <itis>8712</itis>   93 characters w/overhead

- When this same expression is rendered into ASN (particularly using BER encoding), then the ITIS codes are sent as 2-byte long values with whatever encoding tagging is defined by the standard. In some message sets, free text is not allowed and the above message would be reduced to four 2-byte values enclosed in a single tag (the value of which will be context defined) and a length value as in:

<tag>	<length>	<value>
<0x80>	<0x08>	<11794>
		<13312>
		<12546>
		<8712>	10 bytes w/overhead

- If the ASN rendering allows the free text and handles the ITIS codes individually (the literal translation of the *text-and-itis* data frame defined in this standard) than the resulting tagging would be similar to:

<tag>	<length>	<value>
<0x80>	<0x02>	<11794>
<0x81>	<0x12>	<Glendora Ave>
<0x80>	<0x02>	<13312>
<0x80>	<0x02>	<12546>
<0x80>	<0x02>	<8712>	22 bytes w/overhead

8.2   Encoding Numbers

Numbers shall be encoded with one of more number codes or text following the below rules.

- Numbers can be encoding using the following three types of categories: *small numbers*, *large numbers*, and *text* as well as the encoding for zero.
- The number produced shall be the sum of all number codes that follow.
- The largest number shall come first followed by smaller numbers in descending order.
- Numbers shall be produced with number codes when possible and with textual entries when the number codes will not serve (typically needed when a decimal point is used).
- Encodings should used the smallest number of codes possible to express the result.
- Any prefix or suffix letters required to make a entry with mixed numbers and text shall be encoded as text in the order required.
- Numbers ranging from 1 to 255 shall be encoded using the small number category.
- Numbers ranging from 256 and larger shall be encoded using the large number category.
- The number 0 (zero) shall be encoded as 16 bits of all zeros, 0x00.
- Any ordinal value shall be applied to the number by suffix text if required. Interpretation of such values is outside of the scope of this section.
- For backwards compatibility, the older encoding style of a category of zero followed by the value in the next byte [<00> <number>] shall be supported, but its use should be avoided in new work.

Examples of proper encoding numerical values:

Value to be expressed	Preferred Encoding	Byte Sequence
0	0	00>
1	n1	12545
123	n123	12667
1234	n1200, n34	11547, 12578
12345	n12000, n300, n45	11581, 11531, 12589
123 ½	n123, n1_2	12667, 11526
Exit 123b	exit, n123, "b"	11794, 12667, text : b
1st Street	n1, st, street	12545, text: st, 13436
I-5	interstate, n5	1178, 12549
Business Loop 880	business loop, n850, n30	11782, 11542, 12574
US Route 66	us-route, n66	11779, 12610
123	<00 : 123>	[Old style, no longer preferred]

8.3   Encoding Proper Names

Names shall be encoded with a combination of free text and zero or more categories as outlined in the below rules. If the name has a suffix (street lane, drive), then add it to the string when needed. Do not depend on the type of name to convey this information.

- Names are in general made up of free text entries. These names are applied to objects, destinations, structures, exits, and places to provide a more complete explanation of an event or sign.
- Names need not be offset with denoted types (named objects) unless this additional data is required.
- Names which can be encoded entirely with ITIS codes should be encoded this way and not use free text. Many common generic names and objects can be encoded in this way.
- Names which contain numbers can be encoded using the rules for numerical encodings as well.
- The name produced shall be the sum of all codes that follow.
- Encodings should use the smallest number of code possible to express the result.
- Any prefix or suffix letters required to make an entry with mixed number and text shall be encoded as text in the order required.
- Any prefix or suffix directionality or direction of travel (i.e. West Route 66 or Westbound Route 66) required to make a entry shall be encoded using the generic location codes.
- Any street suffix strings (i.e. Alley, Avenue, Street, Drive, etc.) required to make a entry shall be encoded using the street suffixes codes, if that string exists in those codes. Otherwise free text may be used.
- Any street suffix strings ending in an "s" (i.e. Streets, Estates, Lanes, etc.) shall be made up of the suffix phrase with a free text "s" added following it.

Examples of proper encoding proper name values:

Value to be expressed	Preferred Encoding	Byte Sequence
Main Street	"Main", street	text: Main, 13436
Glendora	"Glendora"	text: Glendora
Exit 123b	exit, n123, "b"	11794, 12667, text : b
1st Street	n1, st, street	12545, text: st, 13436
I-5	interstate, n5	11781, 12549
Business Loop 880	business loop, n850, n30	11782, 11542, 12574
US Route 66	us-route, n66	11779, 12610
Historical Route 66	historical route, n66	11798, 12610
Westbound Route 66	westbound traffic, us-route, n66	924, 11799, 12610
East Route 66	east, us-route, n66	800, 11799, 12610
Old Faithful Rest Area	"Old Faithful", rest area	text: Old Faithful, 7986
Evacuation Center	evacuation, center	11030, 13635
Ranger Station	ranger station	13066
Alameda de las Pulgas	"Alameda de las Pulgas"	text : Alameda de las Pulgas
FM-123	farm to market route, n123	11786, 12667

8.4   Encoding Expressions of Distance

Many sign patterns have an optional expression of some distance or length from the sign point to some other location. The pattern used for such expressions shall be:

<optional distance, value, units> *or in expanded detail:*

<optional direction or arrow><optional numerical value><optional units>

The *direction or arrow* can be a simple keyword (often taken from the MUTCD-locations category) such as ahead, left, next signal, next stop, etc.   The *numerical value* shall follow the rules established for numbers. The *units* denotes what system of units is to be used (miles is presumed if this code is absent).

In constructing a sign using these patterns the following rules shall be observed:

- Any named object in the expression shall follow the rules for encoding proper names.
- Expressions with more than one proper name shall separate each name with the code words "and" or "or" as needed.
- In compound signs the expression of distance should come at the end of the sign, after all other descriptive items.
- The units term shall be present only when it is preceded by a numerical value.
- The units of distance shall be presumed to be in miles if no units phrase is present.

Examples of proper encoding distance values:

Value to be expressed	Preferred Encoding	Byte Sequence
Stop Ahead	stop, ahead	12294, 13569
5 Miles	n5, miles	12549, 8712
West US Route 66 ahead 2 miles	west, route, n66, ahead, n2, miles	8001, 11779, 12610, 13569, 12546, 8712
I-5 left lane ¼ mile	interstate, n5, left lane, n1-4th, mile	11781, 12549, 8195, 11524, 8711
Weigh Station 1000 feet	weigh station, ahead, n1000, feet	11792, 13569, 11545, 8710
Left Lane Ends, ¾ mile	left lane ends, n3-4th, mile	8195, 13583, 11527, 8711

8.5   Encoding Direction and Distance Sign Patterns

Signs of this type (typically denoted a D category type in MUTCD) are typically expressed based on one of the general patterns shown below. The *object text* varies and can include named objects (named streets, locations, destinations) or roadway assets (stop signs, signals, branching points).   The *destination details* often include an exit and its name or number when used with major roadways.   The *immediate directions* can include (besides the obvious ahead, left, and right) descriptive terms for locations such as "next light" etc. The optional *distance* codes follow the rules established for expressions of distance.

<object text><immediate direction><optional distance, value, units>

<direction or arrow><named object><destination details><optional distance, value, units>

The *direction or arrow* elements may consist of one or more direction arrows to indicate specific lanes or directions. Such graphical elements are expressed in the ITIS categories MUTCD-Locations or Allowed-Maneuvers and often rely on the precise position of the sign with respect to specific lanes of the roadway or to specific signal heads in an intersection.

In constructing signs using these patterns the following rules shall be observed:

- Graphical elements, i.e. arrows, (if present) which relate the expression to a specific roadway asset (lane, signal, etc.) shall come first or last in order before the rest of the expression.
- Use the named object category entries to set off and limit proper names of objects.
- Use suitable MUTCD location categories for arrow unless a single lane is being described.
- The unit's term shall be present only when it is preceded by a numerical value.
- The units of distance shall be presumed to be in miles if no units phrase is present.

Examples of proper encoding proper direction values:

Value to be expressed	Preferred Encoding	Byte Sequence
Westbound Route 66 10 miles ahead	westbound traffic, US route, n66, ahead, n10, miles	7997, 11779, 12610, 13569, 12554, 8712
Stop Ahead	stop, ahead	12294, 13569
Reduced speed Ahead	reduced speed, ahead	12302, 268, 13569
Right Lane End, Merge Left	right lane, ends, merge, left	8196, 13583, 7451, 13580
Golf Cart Crossing Ahead	golf cart, crossing, ahead	11052, 13585, 13569
Park and Ride Left	park and ride lot, left	8012, 13580
Shoulder Drop Off next 20 miles	shoulder, drop off, next, n20, miles	8027, 1059, 13582, 12564, 8712
Caution Shoulder Drop off	caution, shoulder , drop off	12330, 8027, 1059
Rest Stop Next Right	rest area, next, right	7986, 13582, 13579
Lane Arrows, I-10 Right Two Lanes	Interstate, n10, right two lanes	11781, 12554, 8200

8.6 Encoding Speed Limit Sign Patterns

Signs of this type (typically denoted by the R2 category types in MUTCD) are typically used to relate a regulated speed to specific classes of vehicles on specific roadways or specific sections of roadway. The most common pattern, which applies to all vehicles, is simply:

> <speed><value><optional units>

However this pattern is in fact only a simple sub-set of the more complex pattern shown below which is used in the more general case to apply the speed limit to specific conditions, user vehicles, or roadway areas.

> <pre-terms><speed><time of day modifiers><modifiers>
>   <class of vehicle><value><optional units><location modifiers>

The *pre-terms* include such phrases as "state law" or "fines doubled" etc. The speed is the critical "speed limit" code entry (value 268 from Traffic Conditions). The *time of day modifiers* restricts the application of the speed to selected time such as "night" etc. The *modifiers* allow the phrases like "reduced" or "minimum" or "combined" to be inserted when needed (taken from MUTCD sign types or from qualifiers categories).   The *class of vehicle* allows the application of the speed to selected vehicle types or traveler classes, such as trucks or vehicles with trailers. The *value* is the stated speed, and this optionally followed by the *units* to be used (typically MPH or KPH). Finally the normal location modifiers can be added (ahead, etc.) It should be noted that if such a modifier is added, the MUTCD code for the resulting sign will be a "w" type (warning) rather than an "r" type (regulatory).

In constructing signs using these patterns the following rules shall be observed:

- Any time of day restrictions shall precede any class of vehicle restrictions
- Location modifiers which determine how the sign is applied to the local area shall be last
- The unit's term shall be present only when it is preceded by a numerical value.
- When there is no unit code present the value shall be in units of MPH.

Examples of proper encoding of speed limit values:

Value to be expressed	Preferred Encoding	Byte Sequence
Speed Limit 70 MPH	speed limit, n70, mph	268, 12614, 8720
Night Speed Limit 55	night, speed limit, n55, mph	7743, 268, 12599, 8720
Truck Speed Limit 55	trucks, speed limit, n55, mph	9227, 268, 12599, 8720
Speed Limit 20 on curve	advice, on curve, speed limit, n20, mph	7712, 8026, 268, 12564, 8720
Speed limit Reduced Ahead	speed limit, reduced, ahead	268, 12302, 13569
Night Speed 45 Vehicle with Trailers	vehicles with trailers, night, speed limit, n55, mph	9225, 7743, 268, 12599, 8720
School Zone Speed Limit 25 MPH	school zone, n25, mph	4124, 12569, 8720
Trucks 60 km/h	speed limit, trucks, n60, kph	268, 9227, 12604, 8721

8.7   Encoding Parking Sign Patterns

Signs of this type (typically denoted a R8 category types in MUTCD) are used to indicate that vehicle parking is (or is not) allowed in designated places for denoted times and periods.   The general pattern is:

<duration limits><optional qual><parking><time and day limits><class of vehicle>
<qualifier data><applicable locations>

The *duration limit* sets the allowed parking duration, if any. The optional *qual* entry is typically the term "no" when present to indicate that parking is to be prohibited. The *parking* is the critical "parking" code entry (value 4120 from Parking Information). The *time and day limits* restricts the application of the parking rule to selected hours and days. The *class of vehicle* allows the application of the parking rule to selected vehicle types or traveler classes, such as trucks. The *qualifier data* is the can be used to set additional time limits or exempt times and users from the rule. The applicable location applies the rule to local spatial areas such as one side of the street, from the sign to another point, etc., and may contain arrow information.

In constructing signs using these patterns the following rules shall be observed:

- The sign expression shall be started with an MUTCD sign type when needed
- Any time of data restrictions shall precede any class of vehicle restrictions
- Location modifiers which determine how the sign is applied to the local area shall be last
- The unit's term shall be present only when it is preceded by a numerical value.
- When there is no unit code present the value shall be in units of Hours.

Examples of proper encoding proper parking values:

Value to be expressed	Preferred Encoding	Byte Sequence
No Parking	no, parking	7738, 4120
No Parking Any Time	no, parking, any time	7738, 4120, 7744
No Parking Except on Shoulders	no, parking, except, on, either shoulder	7738, 4120, 7741, 8249
No Parking This Side of Street	no, parking, this side of street	7738, 4120, 13576
No Stopping on Pavement	no stopping, on the roadway	7738, 4120, 7951
One Hour Parking	n1, hours, parking	12545, 8729, 4120
Restricted Parking, Taxis Only	no, parking, except, taxies	7738, 4120, 7741, 8976
No Parking Except on Wednesdays		
	no parking, except, on, xWednesday	7738, 4120, 7741, 8761
No Parking 8AM to 5 PM	no, parking, begin time, n24, end time, n68	
		7738, 4120, 7735, 12568, 7737, 12612
No Parking 8AM to 5 PM except Weekends		
	no, parking, begin time, n24, end time, n68, except, weekends	
		7738, 4120, 7735, 12568, 7737, 12612, 7741, 8725
No Parking Loading Zone	no, parking, loading zone	7738, 4120, 4126

8.8 Encoding Weight Limits and Prohibited Use Patterns

Signs of this type (typically denoted an R12 or a D8 category types in MUTCD) are typically used to state limits of weight, height, axles count or other restrictions on travel over roads, bridges, and other objects. The pattern to be followed is:

<direction or arrow><named object><destination details><optional distance, value, units>

Often more than one restriction may be stated in a single sign expression; such cases should be separated by the "and" phrase.

In constructing signs using these patterns the following rules shall be observed:

- The units term shall be present only when it is preceded by a numerical value.
- When there is no speed unit code present the value shall be in units of MPH.
- When there is no weight unit code present the value shall be in units of tons.
- When there is no height unit code present the value shall be in units of feet.
- When there is no distance unit code present the value shall be in units of miles.

Examples of proper encoding proper advisory sign values:

Value to be expressed	Preferred Encoding	Byte Sequence
Weight Limit	weight limit	2577
Weight Limit 10 tons	gross weight limit, n10, tons	2577, 12554, 8740
Weight Limit 10 tons (metric)	gross weight limit, n10, metric tons	2577, 12554, 8737
Axle Weight limit 5 tons	truck restriction, axle load limit, n5, tons	2563, 2576, 12549, 8740
No Trucks Over 32000 LBS	truck restriction, gross weight limit, n30000, n2000, pounds	2563, 2577, 11599, 11555, 8739
Trucks Allowed	trucks allowed	9227, 7744
Trucks Prohibited	no, trucks	7738, 9227
Truck Rollover (Danger of Tipping)	MUTCD graphic	13619
Low Clearance	height limit	2574
Clearance 14 ft 6 in	height limit, n14, n1-2, feet	2574, 12558, 11526, 8710
No Western Doubles	no, vehicles with double trailers	7738, 9232
Caution: Low Ground Clearance	caution, low ground clearance	12330, 5938

8.9   Encoding Pedestrians and Other Non-Motorized Vehicle Patterns

Signs of this type (typically denoted a R9 and R10 and also the M7 and W11category types in MUTCD) are used to instruct pedestrians and bicyclists on valid movements and to present cautions.   The pattern to be followed is:

<direction or arrow><named object><destination details><optional distance, value, units>

In constructing signs using these patterns the following rules shall be observed:

- The type of traffic or traveler (pedestrian, bicycle, etc) to which this applies is typically part of the named object.
- Note the "ped" is always spelled out as pedestrian in the ITIS codes

Examples of proper encoding proper advisory sign values:

Value to be expressed	Preferred Encoding	Byte Sequence
Pedestrian Crosswalk	pedestrian, crosswalks	9486, 13586
Sidewalk Closed	sidewalk, closed	8251, 770
Sidewalk Closed Ahead, Cross Here		
	sidewalk, closed ahead, cross, here	8251, 771, 7755, 13570
Cross on Green Light Only	cross, only, on, green signal light	7755, 7747, 7688, 11034
Bicyclists Use Ped Signal	bicycles, use, pedestrian signal light	9218, 7716, 11045
Bicyclists Yield to Peds	bicycles, yield, to, pedestrians	9218, 12295, 8014, 9486
Stop Here When Flashing	stop, here, when flashing	12294, 13570, 7753
Hitchhiking Prohibition	no, hitch hiking	7738, 8985
No non-motorized traffic	no, non-motorized traffic	7738, 9260

8.10   Encoding with Vehicle and Traveler Class Systems used in Patterns

Sign text of this type is typically added to a basic sign type to include or exclude a specific class of vehicle or user from the rule or information created by the sign.

<rest of sign><optional include or exclude><named vehicle or user class><rest of sign>

The *include or exclude* term (if present) will indicate if the class data (one or more entries) to follow represents those affected by the rest of the sign or those exempted from the sign. All other classes not mentioned are generally presumed to fall into the other category, but there are exceptions to this.   The *named vehicle or user class* denotes the type of vehicle or user. It can be taken from the listed items found in the categories:

Group-35	Transit Mode
Group-36	Vehicle Groups Affected
Group-37	Traveler Group Affected
Group-38	Responder Group Affected
Group-39	Incident Response Equipment

In constructing signs using these patterns the following rules shall be observed:

- In the absence of such data, signs are presumed to apply to all classes of vehicles and travelers at all times.

- The ITIS general term for all "car" vehicles in category 36 can be chosen from: *cars*, *light vehicles*, *cars and light vehicles* but *cars and light vehicles* is preferred.

- When a suitable term for a class of vehicle or a class of traveler can not be found, the general term "*traffic*" (also in category 36) can be used.

- Expressions with more than one vehicle or user class shall separate each item with the code words "and" or "or" as needed.

Examples of proper encoding vehicle or traveler class values:

Value to be expressed	Preferred Encoding	Byte Sequence
Commercial Vehicles Excluded	no, commercial vehicles	7738, 9255
No Bicycles	no, bicycles	7738, 9218
Van Accessible	van accessible	4128
No Parking except taxis and buses	no, Parking, except, buses, and, taxis	7738, 4120, 7741, 9228, 7723, 8976
Local Traffic Only	local traffic, only	9478, 7747
Through traffic keep left	through traffic, keep to the right	9473, 7425
Departures use upper level	departure traffic, use, upper level	9481, 7716, 7970
Hitchhikers Prohibited	no, hitch hiking	7738, 8985
Chains Recommended above 4000 ft	above, n4000, feet , snow tires or chains recommended	7681, 11567, 8710, 6155

8.11   Encoding with Street Suffixes used in Patterns

This category type is often used with street and place name signs where the suffix is part of the proper name of the object.

<rest of sign>< optional pre-name><name string><street suffix><optional free text><rest of sign>

The *street suffix* category is used for such names. If the required name string ends in an "s" to make it plural it is typically made up of the *street suffix* category and then the "s" in expressed free text (i.e. Hill – Hills, Garden – Gardens, Estate – Estates, etc.). Do not use the *street suffix* category to indicate that kind of object which is involved (the named entries are to be used for this need). An optional *pre-name* may also be present (typically direction type data).

In constructing signs using these patterns the following rules shall be observed:
- Suffix entries shall be used over free text when such use will conserve bandwidth
- Singular suffix entries shall be made plural by the addition of a free text "s" at the end.
- Prefix names shall be chosen from the suitable ITIS codes and not composed of free text whenever possible.
- Note that abbreviations are always spelled out in the suffix entries. This rule need not be followed in constructed textual names.
- Expressions with more than one name shall separate each item with the code words "and" or "or" as needed.
- Parentheses and brackets may be used when expressing alternative names in free text "( ) {} [] <> etc.) but should be separated with an "or" construct from the primary name.

Examples of proper encoding street suffixes:

Value to be expressed	Preferred Encoding	Byte Sequence
No Name Avenue	text: No Name, avenue	text: No Name, 13316
Hawaiian Garden	text: Hawaiian, garden	text: Hawaiian, 13364
Hawaiian Gardens	text: Hawaiian, garden, text: s	text: Hawaiian, 13364, text: s
Connecticut Estate	connecticut, estate	12808, 13351
Party Beach	text: Party, beach	text: Party, 13318
West Crescent Road	west, crescent, nRoad	8001, 13342, 13422
East Springfield	east, text: Springfield	8000, text: Springfield
North Haverbrook	north, text: Haverbrook	7998, text: Haverbrook
Dead Man's Curve	text: Dead Man's, curve	text: Dead Man's, 13346
Mussel Shoals	text: Mussel, shoal, text:s	text: Mussel , 13427 , text: s
Foothill Blvd [Minnehaha]	text: Foothill, boulevard, or, text: [Minnehaha]	text: Foothill, 13322, 7722, text: [Minnehaha]
Evergreen Terrace	text: Evergreen, terrace	text: Evergreen, 13438

8.12 Encoding with Allowed Maneuvers

The use of the allowed-maneuver codes in signs and phrases varies slightly from that of other ITIS codes. These codes are intended be used when the need arises to represent a specific set of allowed maneuvers the driver can make, typically from a single lane to which the expression is applied. Their MUTCD posted sign equivalents are typically expressed as graphical direction arrows.

This category differs from the arrows and locations found in the MUTCD-locations category and its practical use also differs (that category is typically used to denote locations not maneuvers[7]). In use, the category is simply a single phrase chosen to reflect the designated data. It may be followed by additional qualifier phrase data regarding its use and application (only, on green, except buses, after 4 PM, etc.)

    <allowed maneuver><other data as needed>

The category entries are made up of a set of 7 bits in the lower byte in a pattern, each describing one possible lane maneuver from the perspective of the driven vehicle (the upper byte being always set to 44). A bit set to one indicates that that specific maneuver may be made. All 128 possible combinations are expressed in the enumerated list. The 8th bit is reserved and always set to zero, and in this way is like the locally defined codes reserved in the other categories (however, no locally defined codes exist for this category).

Repeating the data found in previously in the standard, the maneuvers are abbreviated as follows:

LU	= Left Hand U-Turn	Bit 7
LT	= Left Hand Turn	Bit 6
L45	= Left Hand 45 degree turn (soft left) or curve	Bit 5
S	= Straight Ahead	Bit 4
R45	= Right Hand 45 degree turn (soft right) or curve	Bit 3
RT	= Right Hand Turn	Bit 2
RU	= Right Hand U-Turn	Bit 1 (the LSB bit)

Note that this system works for nations that drive on either the right or left side of the road. In the case of the US (driving on the right) the bit for "Right Hand U-Turn" makes no practical sense and is never found set to one. In a similar fashion, the "Left Hand U-Turn" bit is not used in countries which drive on the left side.

Note that this system allows encoding both right and left "45 degree" turns (also called a "soft" turn), intended for describing those times when multiple turning paths are allowed. Such as an intersection where more than one left hand turn can be made, for example where the additional lane is the entrance ramp for a freeway. In general use these bits are not to be set unless such a path exists. Therefore, as an example, a lane where left hand turns are allowed as well as left hand U-turns would be encoded with only the LT and LU bits set (and not the L45 bit). The L45 bit, as well as the other bits (S, R45,RT, RU) would all be set to zero in such a case.

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[7]   Hint: If the sign to be expressed covers multiple lanes or could be applied equally to drivers in multiple lanes, then any needed arrow should be chosen from the MUTCD-Locations category and not the allowed-maneuvers category.

Examples of proper encoding of allowed-maneuver code pattern values:

Value to be expressed	Preferred Encoding	Byte Sequence
Straight Ahead Only	prohibit_LU_LT_L45_R45_RT_RU_Allowed_S	11383
Right Only	prohibit_LU_LT_L45_S_R45_RU_Allowed_RT	11389
Left or Left U-turn Only	prohibit_L45_S_R45_RT_RU_Allowed_LU_LT	11295
Left, Right, or Straight Allowed	prohibit_LU_L45_R45_RU_Allowed_LT_S_RT	11349
No U-Turn (U-Turn Prohibition)	prohibit_LU_Allowed_LT_L45_S_R45_RT_RU	11328
Left, 45 deg Left, U-turn Allowed	prohibit_S_R45_RT_RU_Allowed_LU_LT_L45	11279
Lane 1: Left or Left U-turn Only, Lane2: Left Only *		
	prohibit_L45_S_R45_RT_RU_Allowed_LU_LT	11295,
	prohibit_LU_L45_S_R45_RT_RU_Allowed_LT	11359

* Note that in fact this is two separate signs (often printed on the same signboard), each of which is applied to its own lane (and the lane numbering assignment, which is outside of the scope here, may not be sequential even though the lanes are spatially adjacent).

9. MUTCD Signage Patterns Expressed in ITIS

The following phrases are taken from the MUTCD list of signs, specifically the document Standard Highway Signs (2004 edition and its successors). The below ordering follows the list found in the table of contents for that document. The purpose of this section is to provide normative information regarding how to translate such signage into ITIS expressions. The list is intended to be illustrative, not exhaustive.

Each phrase has been translated into a suitable equivalent ITIS expression for use. The MUTCD sign expressions often contain one or more representative values (such as "25" in "Speed Limit 25 MPH") to provide examples of common use. The translation provided shows such values with a tagged value such as <num> to indicate that a variety of possible codes can be placed in that position to render different specific signs. Usage comments are added as needed. In general, any sign pattern not found below can be easily derived from the examples and from the rudimentary grammar rules established in section eight.

Category: Regulatory Signs

9.1 **Phrase:**	Stop	R1-1
ITIS:	12294	
Literal:	stop	

9.2 **Phrase:**	Yield	R1-2
ITIS:	12295	
Literal:	yield	

9.3 **Phrase:**	To Oncoming Traffic	R1-2a
ITIS:	12296	
Literal:	to oncoming traffic	

9.4 **Phrase:**	4-Way	R1-3
ITIS:	12294, 12297	
Literal:	stop, four way	

9.5 **Phrase:**	All Way	R1-4
ITIS:	12294, 12298	
Literal:	stop, all way	

9.6 **Phrase:**	Generic: Yield Here <arrow> To Pedestrians	
ITIS:	12295, 13570, <arrow>, 8014, 9486	
Literal:	yield, here, <arrow>, to, pedestrians	

9.7 **Phrase:**	Yield Here To Pedestrians (Left) with Ped Symbol	R1-5L
ITIS:	12295, 13570, 13604, 8014, 9486	
Literal:	yield, here, downward left 45 degree, to, pedestrians	

9.8 **Phrase:**	Yield Here To Pedestrians (Right) with Ped Symbol	R1-5a
ITIS:	12295, 13570, 13605, 8014, 9486	
Literal:	yield, here, downward right 45 degree, to, pedestrians	

9.9 **Phrase:**	In-Street Pedestrian Crossing (Yield)	R1-6
ITIS:	12295, 8025,9486, 13585	
Literal:	yield, in street, pedestrians, crossing	

9.10 **Phrase:**	In-Street Pedestrian Crossing (Stop)	R1-6a
ITIS:	12294, 8025,9486, 13585	
Literal:	stop, in street, pedestrians, crossing	