
**Traffic and Travel Information (TTI) — TTI
via Transport Protocol Experts Group
(TPEG) Extensible Markup Language
(XML) —**

**Part 2:
tpeg-locML**

*Informations sur le trafic et le tourisme (TTI) — Messages TTI via le
langage de balisage extensible (XML) du groupe d'experts du protocole
de transport (TPEG) —*

Partie 2: tpeg-locML



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

STANDARDSISO.COM : Click to view the full PDF of ISO/TS 24530-2:2006

© ISO 2006

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Abbreviated terms	2
4 Format of this document	3
4.1 Tables	3
5 tpeg-locML	4
5.1 location_container	4
5.2 location_coordinates	4
5.3 location_descriptions	8
Annex A (normative) DTD for tpeg-locML — TPEG Location Referencing for applications (tpeg-locML.dtd)	23
Annex B (normative) External entity references for tpeg-locML — TPEG Location Referencing for applications (tpeg-locML.ent)	28

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years with a view to deciding whether it should be confirmed for a further three years, revised to become an International Standard, or withdrawn. In the case of a confirmed ISO/PAS or ISO/TS, it is reviewed again after six years at which time it has to be either transposed into an International Standard or withdrawn.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TS 24530-2 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 204, *Intelligent transport systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read "...this European pre-Standard..." to mean "...this Technical Specification...".

ISO/TS 24530 consists of the following parts, under the general title *Traffic and Travel Information (TTI) — TTI via Transport Protocol Experts Group (TPEG) Extensible Markup Language (XML)*:

- *Part 1: Introduction, common data types and tpegML*
- *Part 2: tpeg-locML*
- *Part 3: tpeg-rtmML*
- *Part 4: tpeg-ptiML*

Introduction

TPEG in XML (tpegML) provides the solution to diverse requirements for the ultimate delivery of TPEG applications (potentially simultaneously) via for example ARIB, ATSC, DAB, DVB and the Internet. This will solve the minimal adaptation layers requirement and without doubling up on message carousels, which are handled at different layers of the protocol stacks.

The original TPEG technology uses a byte-oriented stream format, which may be carried on almost any digital bearer with an appropriate adaptation layer. TPEG messages are delivered from service providers to end-users, and are used to transfer application data from the database of a service provider to an end-user's equipment.

TPEG binary was initially designed to meet a particular brief, from the EBU's Broadcast Management Committee; to develop a new protocol for Traffic and Travel Information, for use in the multimedia broadcasting environment. TPEG applications were developed with service and transport features, which enable travel-related messages to be coded, decoded, filtered and understood both by humans (visually and/or audibly) and by agent systems. This brief was also endorsed by the EBU TTI Broadcast Strategy Team, who recognized the vital importance of a bearer independent TTI protocol.

The development of TPEG binary technology is excellently matched both technically and economically to DAB and possibly to internet bearers, where of the order of up to 10 kbits/s is considered acceptable. However other bearers such as ARIB, ATSC and DVB may be able to offer much higher data rates with economic and technical utility. Nevertheless these bearers are highly structured (layered) in their ability to handle transparent data services and they include mechanisms suitable for carousel delivery, which would require a considerably different TPEG data structure before real transparency could be achieved.

Another potential use of tpegML is provided to Service Providers who would have a standardised message generation interface, yet be able to develop systems suited to their own requirements. This will enable Service Providers to exchange pre-edited information regardless of their message generation systems and be substantially language independent.

tpegML has been developed using the DTD approach, which allows the use of different language entity files to easily provide a truly language independent service. This approach has the advantage that tpegML files can be rendered in any language, provided the language entity file is available to the internet browser. This document provides English language entity files only. For other languages the entity files in this document only require direct translation.

The development of this ISO/TS 24530 series was undertaken jointly with European Broadcasting Union B/TPEG Group, which has evolved into the TPEG Forum Standards Task Force. Attention is drawn to the EBU sponsored TPEG Forum development principles, which require all inputs containing IPR to be declared during drafting work. No such declarations have been made.

Traffic and Travel Information (TTI) — TTI via Transport Protocol Experts Group (TPEG) Extensible Markup Language (XML) —

Part 2: tpeg-locML

1 Scope

This document establishes the XML encoding of the method of Location Referencing used by TPEG applications.

TPEG applications contain the information required by a client TPEG decoder (i.e. both Location Referencing and event information), to present all the information intended for the end-user when it was originated by the service provider.

Location Referencing requires a service provider to give an impression or image, to the human end-user, of where an event has taken place. This cannot be done easily because the human end-user may or may not be familiar with the location. tpeg-loc has the added challenge of attempting to be as language independent as possible. This is achieved by the use of tpeg-loc tables (essentially word-oriented data object dictionaries).

tpeg-loc is the recommended Location Referencing system for TPEG. It provides location data in a machine readable form that allows a “thick” client such as a navigation system to map-match, on-the-fly, to locate the event being described onto a digital map display. However, it is possible to additionally use other location methods, such as the ‘Link-id’ method by suitably modifying the tpegML.dtd to include the relevant lines, e.g.:

```
<ENTITY % link-idML PUBLIC "-//EBU//DTD tpeg-locML//EN" "link-idML.dtd">
%link-idML;
```

It is vital, for further understanding of this document, to have more than a passing understanding of the tpeg-loc binary specification which describes, among other things, in a step-by step approach: point, link and area definitions, and how they are structured to provide a full Location Referencing system.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/TS 24530-1, *Traffic and Travel Information (TTI) — TTI via Transport Protocol Experts Group (TPEG) Extensible Markup Language (XML) — Part 1: Introduction, common data types and tpegML*

ISO/TS 24530-3, *Traffic and Travel Information (TTI) — TTI via Transport Protocol Experts Group (TPEG) Extensible Markup Language (XML) — Part 3: tpeg-rtmML*

ISO/TS 24530-4, *Traffic and Travel Information (TTI) — TTI via Transport Protocol Experts Group (TPEG) Extensible Markup Language (XML) — Part 4: tpeg-ptiML*

ISO/TS 18234-1, *Traffic and Travel Information (TTI) — TTI via Transport Protocol Expert Group (TPEG) data-streams — Part 1: Introduction, Numbering and Versions (SSF)*

ISO/TS 18234-2, *Traffic and Travel Information (TTI) — TTI via Transport Protocol Expert Group (TPEG) data-streams — Part 2: Syntax, Semantics and Framing Structure (SSF)*

ISO/TS 18234-6, *Traffic and Travel Information (TTI) — TTI via Transport Protocol Expert Group (TPEG) data-streams — Part 6: Location Referencing for applications*

ISO 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes*

3 Abbreviated terms

For the purposes of this document, the following abbreviations apply.

3.1

ARIB

Association of Radio Industries and Business (Japan)

3.2

ATSC

American Television Standards Committee (USA)

3.3

DAB

Digital Audio Broadcasting

3.4

DTD/dtd

Document Type Definition - lower case used for file naming

3.5

DVB

Digital Video Broadcasting

3.6

EBU

European Broadcasting Union

3.7

IPR

Intellectual Property Right(s)

3.8

PTI

Public Transport Information

3.9

RTM

Road Traffic Message

3.10

SSF

Syntax, Semantics and Framing Structure

3.11**TPEG**

Transport Protocol Experts Group

3.12**tpegML**

tpeg XML applications - use lower case to distinguish them from the TPEG binary applications which use upper case

3.13**tpeg-loc**

location referencing for applications

3.14**tpeg-iloc**

descriptor formed according to tpeg-loc rules

3.15**TTI**

Traffic and Travel Information

3.16**WGS84**

World Geodetic System 1984

3.17**XML**

Extensible Markup Language

4 Format of this document

This document is divided into Sections, each describes an XML element used in tpegML. Each element has an introduction explaining what it is for, the DTD definition relevant to it, guidelines “extending” the DTD and an example. The complete .dtd and .ent files are contained in Annexes A and B.

4.1 Tables

A large number of attributes used in elements in tpegML are based on tables in the TPEG specifications. To encode this in XML there are defined general entity references for all the table entries. In this Technical Specification series these entities are taken from the TPEG tables defined in the equivalent part of the ISO/TS 18234-series.

For display in other languages these entity files only need to be replaced by directly translated equivalents.

These are named, for example `locX_Y`, where X is the table number and Y is the row number (e.g. “`loc01_01`” is the entry in the `Loc location_type` table for `large area`). The DTD does not restrict the entity references that can be used in an attribute so the ‘guidelines’ sections indicate which entities/tables should be used for which attributes.

Table numbers use a leading zero below 10, whereas the row number within a table does not use a leading zero. Table numbers are random and entries within a table are random – no priority order is implied.

5 tpeg-locML

This is defined fully in the tpeg-locML.dtd and tpeg-locML.ent files (see Annexes A and B).

5.1 location_container

```
<!ELEMENT location_container ((location_coordinates | location_descriptions)*)>
<!ATTLIST location_container
  language CDATA #REQUIRED
>
```

location_container: This is the location referencing method for TPEG. It combines machine readable and human understandable location referencing information.

The language attribute shall use entity references of the form loc41_x.

Example:

```
<location_container language="&loc41_4;">
  <location_coordinates>...</location_coordinates>
  <location_descriptions>...</location_descriptions>
</location_container>
```

5.2 location_coordinates

```
<!-- loc_table 01: location type -->
<!ENTITY loc01_0 "unknown">
<!ENTITY loc01_1 "large area">
<!ENTITY loc01_2 "nodal area">
<!ENTITY loc01_3 "segment">
<!ENTITY loc01_4 "reserved for future use">
<!ENTITY loc01_5 "intersection">
<!ENTITY loc01_6 "framed point">
<!ENTITY loc01_7 "non-linked point">
<!ENTITY loc01_8 "connected point">
<!ENTITY loc01_255 "unknown">

<!ELEMENT location_coordinates ((mode_type_list | location_point | direction)*)>
<!ATTLIST location_coordinates
  location_type CDATA #REQUIRED
>
```

location_coordinates: The location type attribute shall use entity references of the form loc01_x.

Example:

```
<location_coordinates location_type="&loc01_3;">
  <location_point>
    <WGS84>...</WGS84>
    <location_descriptor>...</location_descriptor>
  </location_point>

  <location_point>
    <WGS84>...</WGS84>
    <location_descriptor>...</location_descriptor>
  </location_point>
</location_coordinates>
```

5.2.1 location_point

```
<!ELEMENT location_point ((WGS84 | location_descriptor)*)>
```

location_point: The elements can be grouped together in a number of ways according to the type of area or point to be described.

Example:

```
<location_point>
  <WGS84>...</WGS84>
  <location_descriptor>...</location_descriptor>
</location_point>
```

5.2.2 mode_type_list

```
<!ELEMENT mode_type_list (mode_of_transport*)>
```

mode_type_list: This describes the modes of transport that this description applies to.

Example:

```
<mode_type_list>
  <mode_of_transport>...</mode_of_transport>
</mode_type_list>
```

5.2.2.1 mode_of_transport

```
<!-- loc_table 05: modes of transport -->
<!ENTITY loc05_0 "unknown">
<!ENTITY loc05_1 "road">
<!ENTITY loc05_2 "railway">
<!ENTITY loc05_3 "coach">
<!ENTITY loc05_4 "suburban railway">
<!ENTITY loc05_5 "underground">
<!ENTITY loc05_6 "bus">
<!ENTITY loc05_7 "tram">
<!ENTITY loc05_8 "water transport">
<!ENTITY loc05_9 "aircraft">
<!ENTITY loc05_10 "telecabin">
<!ENTITY loc05_11 "funicular">
<!ENTITY loc05_12 "taxi">
<!ENTITY loc05_13 "self drive">
<!ENTITY loc05_14 "cable-drawn boat">
<!ENTITY loc05_15 "monorail">
<!ENTITY loc05_16 "light railway">
<!ENTITY loc05_255 "undefined">

<!ELEMENT mode_of_transport EMPTY>
<!ATTLIST mode_of_transport
  mode_of_transport CDATA #REQUIRED
>
```

mode_of_transport: This describes a mode of transport. The mode attribute shall use entity references of the form loc05_x.

Example:

```
<mode_of_transport mode_of_transport = "&loc05_3;" />
```

5.2.3 WGS84

```
<!ELEMENT WGS84 ( (expansion | height)*)>
<!ATTLIST WGS84
  longitude CDATA #REQUIRED
  latitude CDATA #REQUIRED
>
```

WGS84: This describes a location as a point, defined by a longitude and latitude pair, or an area, defined by a longitude/latitude pair and an expansion element. The longitude and latitude attributes shall be in units of degrees.

Example:

```
<WGS84 longitude="0.51389" latitude="50.34567">
  <expansion>...</expansion>
</WGS84>
```

5.2.3.1 expansion

```
<!ELEMENT expansion EMPTY>
<!ATTLIST expansion
  radius_of_circle CDATA #REQUIRED
>
```

expansion: This describes the radius of a circle around a point. The radius_of_circle attribute shall be in metres.

Example:

```
<expansion radius_of_circle="10"/>
```

5.2.3.2 height

```
<!-- loc_table 04: height descriptor -->
<!ENTITY loc04_0 "unknown">
<!ENTITY loc04_1 "above">
<!ENTITY loc04_2 "below">
<!ENTITY loc04_3 "at">
<!ENTITY loc04_4 "above sea level">
<!ENTITY loc04_5 "below sea level">
<!ENTITY loc04_6 "at sea level">
<!ENTITY loc04_7 "above street level">
<!ENTITY loc04_8 "below street level">
<!ENTITY loc04_9 "at street level">
<!ENTITY loc04_255 "undefined">

<!ELEMENT height EMPTY>
<!ATTLIST height
  height_descriptor CDATA #REQUIRED
  height %intsili; #REQUIRED
>
```

height: This describes height information. The height_descriptor attribute should only use entity references of the form loc04_x. The height attribute shall be in metres.

Example:

```
<height height_descriptor="&loc04_3;" height="30"/>
```

5.2.4 location_descriptor

```

<!-- loc_table 03: descriptor type -->
<!ENTITY loc03_0 "unknown">
<!ENTITY loc03_1 "area name">
<!ENTITY loc03_2 "node name">
<!ENTITY loc03_3 "from name (segment)">
<!ENTITY loc03_4 "to name (segment)">
<!ENTITY loc03_5 "link name">
<!ENTITY loc03_6 "local link name">
<!ENTITY loc03_7 "mpeg-ilc name 1">
<!ENTITY loc03_8 "mpeg-ilc name 2">
<!ENTITY loc03_9 "mpeg-ilc name 3">
<!ENTITY loc03_10 "intersection name">
<!ENTITY loc03_11 "point name">
<!ENTITY loc03_12 "non-linked point name">
<!ENTITY loc03_13 "multimode point name">
<!ENTITY loc03_14 "submode point name">
<!ENTITY loc03_15 "mode name">
<!ENTITY loc03_16 "internal division name">
<!ENTITY loc03_17 "airport name">
<!ENTITY loc03_18 "railway station name">
<!ENTITY loc03_19 "metro station name">
<!ENTITY loc03_20 "terminal identifier">
<!ENTITY loc03_21 "gate identifier">
<!ENTITY loc03_22 "platform identifier">
<!ENTITY loc03_23 "building name">
<!ENTITY loc03_24 "town name">
<!ENTITY loc03_25 "county name">
<!ENTITY loc03_26 "region name">
<!ENTITY loc03_27 "nation name">
<!ENTITY loc03_28 "river name">
<!ENTITY loc03_29 "canal name">
<!ENTITY loc03_30 "lake name">
<!ENTITY loc03_31 "sea name">
<!ENTITY loc03_32 "junction name">
<!ENTITY loc03_33 "bus stop name">
<!ENTITY loc03_34 "IATA identifier">
<!ENTITY loc03_35 "tidal river name">
<!ENTITY loc03_36 "bus stop identifier">
<!ENTITY loc03_37 "ferry port name">
<!ENTITY loc03_38 "administrative area name">
<!ENTITY loc03_39 "police force control area name">
<!ENTITY loc03_40 "administrative reference name">
<!ENTITY loc03_41 "point-of-interest name">
<!ENTITY loc03_42 "parking facility name">
<!ENTITY loc03_43 "service area name">
<!ENTITY loc03_255 "descriptor name">

<!ELEMENT location_descriptor (language*)>
<!ATTLIST descriptor
  descriptor_type CDATA #REQUIRED
  descriptor_%short_string; #REQUIRED
>

```

location_descriptor: This describes a location with a name. The descriptor_type attribute shall use entity references of the form loc03_x.

Example:

```

<location_descriptor descriptor_type="&loc03_26;" descriptor="New Forest">
  <language>...</language>
</location_descriptor>

```

5.2.4.1 language

```

<!ELEMENT language EMPTY>
<!ATTLIST language
  language_code CDATA #REQUIRED
>

```

language: This describes the language of a textual element. The language_code attribute shall use entity references of the form loc41_x.

Example:

```
<language language_code="&loc41_5;"/>
```

5.2.5 direction

```
<!-- loc_table 02: direction type -->  
<!ENTITY loc02_0 "unknown">  
<!ENTITY loc02_1 "opposite">  
<!ENTITY loc02_2 "both ways">  
<!ENTITY loc02_3 "north bound">  
<!ENTITY loc02_4 "north-east bound">  
<!ENTITY loc02_5 "east bound">  
<!ENTITY loc02_6 "south-east bound">  
<!ENTITY loc02_7 "south bound">  
<!ENTITY loc02_8 "south-west bound">  
<!ENTITY loc02_9 "west bound">  
<!ENTITY loc02_10 "north-west bound">  
<!ENTITY loc02_11 "clockwise">  
<!ENTITY loc02_12 "anti-clockwise">  
<!ENTITY loc02_13 "inner-ring">  
<!ENTITY loc02_14 "outer-ring">  
<!ENTITY loc02_15 "all directions">  
<!ENTITY loc02_255 "unknown">  
  
<!ELEMENT direction EMPTY>  
<!ATTLIST direction  
  direction_type CDATA #REQUIRED  
>
```

direction: This describes a direction. The direction_type attribute shall use entity references of the form loc02_x.

Example:

```
<direction direction_type="&loc02_2;"/>
```

5.3 location_descriptions

```
<!ELEMENT location_descriptions ((area_reference | network_description | node_description)*>
```

location_descriptions: This is used to provide a human user with information on the location without any need for co-ordinate references to a map.

More details on how these should be utilised can be found in ISO/TS 18234-6.

Example:

```
<location_descriptions>  
  <area_reference>...</area_reference>  
  <network_description>...</network_description >  
  <node_description >...</node_description >  
</location_descriptions>
```

5.3.1 area_reference

```
<!ELEMENT area_reference (area_tree_entry*)>  
<!ATTLIST area_reference  
  country CDATA #REQUIRED  
  area_tree_version %intunti; #REQUIRED  
>
```

area_reference: This describes an area in relation to all other possible areas within a single service. Referencing is achieved through a defined area search tree. The country attribute shall use entity references of the form `loc40_x`.

Example:

```
<area_reference country="&loc40_2;" area_tree_version="1">
  <area_tree_entry>...</area_tree_entry>
</area_reference>
```

5.3.1.1 area_tree_entry

```
<!ELEMENT area_tree_entry ((area_type | area_qualifier | area_descriptor)*)>
<!ATTLIST area_tree_entry
  level %intunti; #REQUIRED
  branch %intunli; #REQUIRED
  predecessor_branch %intunli; #REQUIRED
>
```

area_tree_entry: This is one entry in the `area_reference`. Each `area_tree_entry` is associated with a unique triplet of numbers, the area tree index. The area tree index consists of: tree level, branch (on this level) and branch of predecessor level.

Example:

```
<area_tree_entry level="1" branch="19" predecessor_branch="0">
  <area_type>...</area_type>
  <area_qualifier>...</area_qualifier>
  <area_descriptor>...</area_descriptor>
</area_tree>
```

5.3.1.1.1 area_type

```
<!-- loc_table 06: area type -->
<!ENTITY loc06_0 "unknown">
<!ENTITY loc06_1 "continent">
<!ENTITY loc06_2 "country">
<!ENTITY loc06_3 "first subdivision of a country">
<!ENTITY loc06_4 "second subdivision of a country">
<!ENTITY loc06_5 "third subdivision of a country">
<!ENTITY loc06_6 "fuzzy">
<!ENTITY loc06_7 "city">
<!ENTITY loc06_8 "town">
<!ENTITY loc06_9 "village">
<!ENTITY loc06_10 "urban district">
<!ENTITY loc6_255 "unknown">

<!ELEMENT area_type EMPTY>
<!ATTLIST area_type
  area_type CDATA #REQUIRED
>
```

area_type: This describes the type of an area. The `area_type` attribute shall use entity references of the form `loc06_x`.

Example:

```
<area_type area_type="&loc06_6;"/>
```

5.3.1.1.2 area_qualifier

```

<!-- loc_table 07: area qualifier -->
<!ENTITY loc07_0 "unknown">
<!ENTITY loc07_1 "part of">
<!ENTITY loc07_2 "higher part of">
<!ENTITY loc07_3 "lower part of">
<!ENTITY loc07_4 "low lying areas of">
<!ENTITY loc07_5 "all of">
<!ENTITY loc07_6 "much of">
<!ENTITY loc07_7 "in the middle of">
<!ENTITY loc07_8 "in the centre of">
<!ENTITY loc07_9 "inside of">
<!ENTITY loc07_10 "outside of">
<!ENTITY loc07_11 "outskirts of">
<!ENTITY loc07_12 "edge of">
<!ENTITY loc07_13 "bottom of">
<!ENTITY loc07_14 "top of">
<!ENTITY loc07_15 "greater">
<!ENTITY loc07_16 "northern part of">
<!ENTITY loc07_17 "north-eastern part of">
<!ENTITY loc07_18 "eastern part of">
<!ENTITY loc07_19 "south-eastern part of">
<!ENTITY loc07_20 "southern part of">
<!ENTITY loc07_21 "south-western part of">
<!ENTITY loc07_22 "western part of">
<!ENTITY loc07_23 "north-western part of">
<!ENTITY loc07_255 "unknown">

<!ELEMENT area_qualifier EMPTY>
<!ATTLIST area_qualifier
    area_qualifier CDATA #REQUIRED
>

```

area_qualifier: This qualifies the area type. The area_qualifier attribute shall use entity references of the form loc07_x.

Example:

```

<area_qualifier area_qualifier="&loc07_15;"/>

```

5.3.1.1.3 area_descriptor

```

<!ELEMENT area_descriptor (language*)>
<!ATTLIST area_descriptor
    area_name %short_string; #REQUIRED
>

```

area_descriptor: This describes the area name.

Example:

```

<area_descriptor area_name="Black Forest">
    <language>...</language>
</area_descriptor>

```

5.3.2 network_description

```

<!-- loc_table 08: network layer -->
<!ENTITY loc08_0 "unknown">
<!ENTITY loc08_1 "road network">
<!ENTITY loc08_2 "bus network">
<!ENTITY loc08_3 "metro rail network">
<!ENTITY loc08_4 "tram network">

```

```

<!ENTITY loc08_5 "rail network">
<!ENTITY loc08_6 "telecabin">
<!ENTITY loc08_7 "water transport network">
<!ENTITY loc08_8 "airline network">
<!ENTITY loc08_9 "underground rail network">
<!ENTITY loc08_255 "unknown">

```

```

<!-- loc_table 09: road link type -->
<!ENTITY loc09_0 "unknown">
<!ENTITY loc09_1 "motorway">
<!ENTITY loc09_2 "principal road">
<!ENTITY loc09_3 "secondary road">
<!ENTITY loc09_4 "local road">
<!ENTITY loc09_5 "unnumbered road">
<!ENTITY loc09_6 "european route">
<!ENTITY loc09_7 "deviation route">
<!ENTITY loc09_8 "tourist route">
<!ENTITY loc09_9 "route">
<!ENTITY loc09_10 "ferry">
<!ENTITY loc09_11 "railway">
<!ENTITY loc09_12 "link">
<!ENTITY loc09_255 "road link">

```

```

<!-- loc_table 10: bus link type -->
<!ENTITY loc10_0 "unknown">
<!ENTITY loc10_1 "express">
<!ENTITY loc10_2 "night bus">
<!ENTITY loc10_3 "service bus">
<!ENTITY loc10_4 "post bus">
<!ENTITY loc10_5 "local bus">
<!ENTITY loc10_6 "regional bus">
<!ENTITY loc10_7 "school bus">
<!ENTITY loc10_8 "special needs bus">
<!ENTITY loc10_9 "sightseeing bus">
<!ENTITY loc10_10 "airport link bus">
<!ENTITY loc10_255 "bus link">

```

```

<!-- loc_table 11: metro rail link -->
<!ENTITY loc11_0 "unknown">
<!ENTITY loc11_1 "underground link">
<!ENTITY loc11_2 "suburban city train link">
<!ENTITY loc11_3 "metro rail link">
<!ENTITY loc11_4 "airport rail link">
<!ENTITY loc11_5 "mono-rail link">
<!ENTITY loc11_255 "metro rail link">

```

```

<!-- loc_table 12: tram link -->
<!ENTITY loc12_0 "unknown">
<!ENTITY loc12_1 "service tram link">
<!ENTITY loc12_2 "sightseeing tram link">
<!ENTITY loc12_255 "tram link">

```

```

<!-- loc_table 13: train link -->
<!ENTITY loc13_0 "unknown">
<!ENTITY loc13_1 "international train link">
<!ENTITY loc13_2 "national train link">
<!ENTITY loc13_3 "inter-city train link">
<!ENTITY loc13_4 "regional train link">
<!ENTITY loc13_5 "suburban train link">
<!ENTITY loc13_6 "local train link">
<!ENTITY loc13_7 "tourist train link">
<!ENTITY loc13_8 "rack railway link">
<!ENTITY loc13_255 "train link">

```

```

<!-- loc_table 14: telecabin link -->
<!ENTITY loc14_0 "unknown">
<!ENTITY loc14_1 "telecabin link">
<!ENTITY loc14_2 "funicular link">
<!ENTITY loc14_3 "cable car link">
<!ENTITY loc14_4 "elevator link">
<!ENTITY loc14_5 "chair lift link">
<!ENTITY loc14_6 "drag lift link">
<!ENTITY loc14_7 "egg lift link">
<!ENTITY loc14_8 "mineral buckets link">
<!ENTITY loc14_255 "telecabin link">

```

```

<!-- loc_table 15: water transport link -->
<ENTITY loc15_0 "unknown">
<ENTITY loc15_1 "local passenger boat link">
<ENTITY loc15_2 "regional passenger boat link">
<ENTITY loc15_3 "national passenger boat link">
<ENTITY loc15_4 "international passenger boat link">
<ENTITY loc15_5 "local car ferry link">
<ENTITY loc15_6 "regional car ferry link">
<ENTITY loc15_7 "national car ferry link">
<ENTITY loc15_8 "international car ferry link">
<ENTITY loc15_9 "post boat link">
<ENTITY loc15_10 "train ferry link">
<ENTITY loc15_11 "road ferry link">
<ENTITY loc15_12 "airport boat link">
<ENTITY loc15_13 "sightseeing boat link">
<ENTITY loc15_14 "school boat link">
<ENTITY loc15_255 "water transport link">

<!-- loc_table 16: air link -->
<ENTITY loc16_0 "unknown">
<ENTITY loc16_1 "long haul scheduled intercontinental link">
<ENTITY loc16_2 "international scheduled link">
<ENTITY loc16_3 "short haul international scheduled link">
<ENTITY loc16_4 "internal scheduled link">
<ENTITY loc16_5 "intercontinental charter air link">
<ENTITY loc16_6 "international charter air link">
<ENTITY loc16_7 "internal charter air link">
<ENTITY loc16_8 "sightseeing air link">
<ENTITY loc16_9 "shuttle service air link">
<ENTITY loc16_10 "helicopter service air link">
<ENTITY loc16_255 "air link">

<ELEMENT network_description ((link_number | link_number_suffix | direction | segment_name | link_descriptor |
network_operator_descriptor)*)>
<ATTLIST network_description
  network_layer CDATA #REQUIRED
  link_type CDATA #REQUIRED
>

```

network_description: This describes links in networks. The defined structure of the element permits filtering and selection based, for example, on road types and numbers, rail link types and numbers, water link types, flight link types and numbers, and even on segment names and directions.

The network_layer attribute shall use entity references of the form loc08_x. The link_type attribute should use entity references of the form shown in Table 1, (if there is no link_type for the given network_layer then this attribute should not be present):

Table 1

Network_layer	link_type
loc01_0 "unknown"	<none>
loc01_1 "road network"	loc09_x
loc01_2 "bus network"	loc10_x
loc01_3 "metro rail network"	loc11_x
loc01_4 "tram network"	loc12_x
loc01_5 "rail network"	loc13_x
loc01_6 "telecabin"	loc14_x
loc01_7 "water transport network"	loc15_x
loc01_8 "airway network"	loc16_x

Example:

```
<network_description network_layer="&loc01_1;" link_type="&loc09_1;" />
```

5.3.2.1 link_number

```
<!ELEMENT link_number EMPTY>
<!ATTLIST link_number
  link_number %intunt; #REQUIRED
>
```

link_number: This describes the number of a link.

Example:

```
<link_number link_number="25" />
```

5.3.2.2 link_number_suffix

```
<!ELEMENT link_number_suffix EMPTY>
<!ATTLIST link_number_suffix
  character CDATA #REQUIRED
>
```

link_number_suffix: This describes a single character suffix for a link number.

Example:

```
<link_number_suffix character="m" />
```

5.3.2.3 segment_name

```
<!ELEMENT segment_name ((from_descriptor | to_descriptor)*)>
```

segment_name: This describes a segment of a link between two points.

Example:

```
<segment_name>
  <from_descriptor>...</from_descriptor>
  <to_descriptor>...</to_descriptor>
</segment_name>
```

5.3.2.4 from_descriptor

```
<!ELEMENT from_descriptor (language*)>
<!ATTLIST from_descriptor
  from_name %short_string; #REQUIRED
>
```

from_descriptor: This describes the name of a source location in a link segment.

Example:

```
<from_descriptor from_name="Reading">
  <language>...</language>
</from_descriptor>
```

5.3.2.5 to_descriptor

```
<!ELEMENT to_descriptor (language*)>  
<!ATTLIST to_descriptor  
  to_name %short_string; #REQUIRED  
>
```

to_descriptor: This describes the name of a destination location in a link segment.

Example:

```
<to_descriptor to_name="Slough">  
  <language>...</language>  
</to_descriptor>
```

5.3.2.6 link_descriptor

```
<!ELEMENT link_descriptor (language*)>  
<!ATTLIST link_descriptor  
  link_name %short_string; #REQUIRED  
>
```

link_descriptor: This describes the name of a link.

Example:

```
<link_descriptor link_name="South Circular">  
  <language>...</language>  
</link_descriptor>
```

5.3.2.7 network_operator_descriptor

```
<!ELEMENT network_operator_descriptor (language*)>  
<!ATTLIST network_operator_descriptor  
  network_operator_name %short_string; #REQUIRED  
>
```

network_operator_descriptor: This describes the name of a network operator.

Example:

```
<network_operator_descriptor network_operator_name="Connex">  
  <language>...</language>  
</network_operator_descriptor>
```

5.3.3 node_description

```
<!-- loc_table 17: node type -->  
<ENTITY loc17_0 "unknown">  
<ENTITY loc17_1 "mono mode point">  
<ENTITY loc17_2 "multimodal node">  
<ENTITY loc17_255 "unknown">  
  
<!ELEMENT node_description ((node_descriptor | reference_object | WGS84 | floor | mode_type_list | associated_modes)*)>  
<!ATTLIST node_description  
  node_type CDATA #REQUIRED  
>
```

node_description: This describes single points or complex nodes, which are part of a network. The **node_type** attribute shall use entity references of the form `loc17_x`.

Example:

```
<node_description node_type="&loc17_1;"
  <node_descriptor>...</node_descriptor>
  <reference_object>...</reference_object>
  <WGS84>...</WGS84>
  <floor>...</floor>
  <mode_type_list>...</mode_type_list>
  <associated_modes>...</associated_modes>
</node_description>
```

5.3.3.1 node_descriptor

```
<!ELEMENT node_descriptor (language*)>
<!ATTLIST node_descriptor
  node_name %short_string; #REQUIRED
>
```

node_descriptor: This describes the name of a node.

Example:

```
<node_descriptor node_name="Oxford Circus">
  <language>...</language>
</node_descriptor>
```

5.3.3.2 reference_object

```
<!ELEMENT reference_object ((fuzzy_directionality_glue | explicit_directionality_glue | fuzzy_proximity_glue |
explicit_proximity_glue | intermediate_glue | orientation | distance | road_object | building | geographical_site |
sightseeing_attraction | reference_object_descriptor)*>
```

reference_object: This describes a location by in a language-independent, descriptive manner. It does this by referencing it to known locations or landmarks.

Example:

```
<reference_object>
  <fuzzy_directionality_glue>...</fuzzy_directionality_glue>
  <explicit_directionality_glue>...</explicit_directionality_glue>
  <fuzzy_proximity_glue>...</fuzzy_proximity_glue>
  <explicit_proximity_glue>...</explicit_proximity_glue>
  <intermediate_glue>...</intermediate_glue>
  <orientation>...</orientation>
  <distance>...</distance>
  <road_object>...</road_object>
  <building>...</building>
  <geographical_site>...</geographical_site>
  <sightseeing_attraction>...</sightseeing_attraction>
  <reference_object_descriptor>...</reference_object_descriptor>
</reference_object>
```

5.3.3.2.1 fuzzy_directionality_glue

```
<!-- loc_table 18: fuzzy directionality glue -->
<!ENTITY loc18_0 "unknown">
<!ENTITY loc18_1 "above">
<!ENTITY loc18_2 "over">
<!ENTITY loc18_3 "under">
```

```

<!ENTITY loc18_4 "below">
<!ENTITY loc18_5 "after">
<!ENTITY loc18_6 "before">
<!ENTITY loc18_7 "in front of">
<!ENTITY loc18_8 "behind">
<!ENTITY loc18_9 "beyond">
<!ENTITY loc18_10 "past">
<!ENTITY loc18_11 "outside">
<!ENTITY loc18_12 "inside">
<!ENTITY loc18_13 "down from">
<!ENTITY loc18_14 "down to">
<!ENTITY loc18_15 "up from">
<!ENTITY loc18_16 "up to">
<!ENTITY loc18_17 "from">
<!ENTITY loc18_18 "to">
<!ENTITY loc18_19 "towards">
<!ENTITY loc18_20 "approaching">
<!ENTITY loc18_21 "in the direction of ">
<!ENTITY loc18_22 "direction ">
<!ENTITY loc18_255 "unknown">

<ELEMENT fuzzy_directionality_glue EMPTY>
<ATTLIST fuzzy_directionality_glue
  fuzzy_directionality_glue CDATA #REQUIRED
>

```

fuzzy_directionality_glue: This approximately describes the direction of an object in relation to another. The fuzzy_directionality_glue attribute shall use entity references of the form loc18_x.

Example:

```
<fuzzy_directionality_glue fuzzy_directionality_glue="&loc18_17;"/>
```

5.3.3.2.2 explicit_directionality_glue

```

<!-- loc_table 19: explicit directionality glue -->
<!ENTITY loc19_0 "unknown">
<!ENTITY loc19_1 "opposite">
<!ENTITY loc19_2 "via">
<!ENTITY loc19_3 "entrance to">
<!ENTITY loc19_4 "exit from">
<!ENTITY loc19_255 "unknown">

<ELEMENT explicit_directionality_glue EMPTY>
<ATTLIST explicit_directionality_glue
  explicit_directionality_glue CDATA #REQUIRED
>

```

explicit_directionality_glue: This explicitly describes the direction of an object in relation to another. The explicit_directionality_glue attribute shall use entity references of the form loc19_x.

Example:

```
<explicit_directionality_glue explicit_directionality_glue="&loc19_1;"/>
```

5.3.3.2.3 fuzzy_proximity_glue

```

<!-- loc_table 20: fuzzy proximity glue -->
<!ENTITY loc20_0 "unknown">
<!ENTITY loc20_1 "near by">
<!ENTITY loc20_2 "height of">
<!ENTITY loc20_3 "close to">
<!ENTITY loc20_4 "beside">
<!ENTITY loc20_5 "near">

```

```

<!ENTITY loc20_6 "next to">
<!ENTITY loc20_255 "unknown">

<!ELEMENT fuzzy_proximity_glue EMPTY>
<!ATTLIST fuzzy_proximity_glue
    fuzzy_proximity_glue CDATA #REQUIRED
>

```

fuzzy_proximity_glue: This approximately describes the proximity of an object to another. The fuzzy_proximity_glue attribute shall use entity references of the form loc20_x.

Example:

```
<fuzzy_proximity_glue fuzzy_proximity_glue="&loc20_5;"/>
```

5.3.3.2.4 explicit_proximity_glue

```

<!-- loc_table 21: explicit proximity glue -->
<!ENTITY loc21_0 "unknown">
<!ENTITY loc21_1 "unknown">
<!ENTITY loc21_2 "at">
<!ENTITY loc21_3 "on">
<!ENTITY loc21_4 "upon">
<!ENTITY loc21_5 "in">
<!ENTITY loc21_255 "unknown">

<!ELEMENT explicit_proximity_glue EMPTY>
<!ATTLIST explicit_proximity_glue
    explicit_proximity_glue CDATA #REQUIRED
>

```

explicit_proximity_glue: This explicitly describes the proximity of an object to another. The explicit_proximity_glue attribute shall use entity references of the form loc21_x.

Example:

```
<explicit_proximity_glue explicit_proximity_glue="&loc21_2;"/>
```

5.3.3.2.5 intermediate_glue

```

<!-- loc_table 22: intermediate glue -->
<!ENTITY loc22_0 "unknown">
<!ENTITY loc22_1 "between">
<!ENTITY loc22_2 "downhill">
<!ENTITY loc22_3 "uphill">
<!ENTITY loc22_4 "along">
<!ENTITY loc22_5 "through">
<!ENTITY loc22_6 "with">
<!ENTITY loc22_255 "unknown">

<!ELEMENT intermediate_glue EMPTY>
<!ATTLIST intermediate_glue
    intermediate_glue CDATA #REQUIRED
>

```

intermediate_glue: This describes the location of an object relative to another. The intermediate_glue attribute shall use entity references of the form loc22_x.

Example:

```
<intermediate_glue intermediate_glue="&loc22_2;"/>
```

5.3.3.2.6 orientation

```

<!-- loc_table 27: orientations -->
<!ENTITY loc27_0 "unknown">
<!ENTITY loc27_1 "north">
<!ENTITY loc27_2 "north-east">
<!ENTITY loc27_3 "east">
<!ENTITY loc27_4 "south-east">
<!ENTITY loc27_5 "south">
<!ENTITY loc27_6 "south-west">
<!ENTITY loc27_7 "west">
<!ENTITY loc27_8 "north-west">
<!ENTITY loc27_9 "clockwise">
<!ENTITY loc27_10 "counter clockwise">
<!ENTITY loc27_11 "all directions">
<!ENTITY loc27_255 "unknown">

<ELEMENT orientation EMPTY>
<!ATTLIST orientation
  orientation CDATA #REQUIRED
>

```

orientation: This describes an orientation or direction. The orientation attribute shall use entity references of the form loc27_x.

Example:

```
<orientation orientation="&loc27_8;"/>
```

5.3.3.2.7 distance

```

<ELEMENT distance EMPTY>
<!ATTLIST distance
  metres %numag; #REQUIRED
>

```

distance: This describes a distance in metres.

Example:

```
<distance metres="1500"/>
```

5.3.3.2.8 road_object

```

<!-- loc_table 23: road objects -->
<!ENTITY loc23_0 "unknown">
<!ENTITY loc23_1 "junction">
<!ENTITY loc23_2 "roundabout">
<!ENTITY loc23_3 "bridge">
<!ENTITY loc23_4 "dam">
<!ENTITY loc23_5 "fuel station">
<!ENTITY loc23_6 "ringroad">
<!ENTITY loc23_7 "gyratory system">
<!ENTITY loc23_8 "road tunnel">
<!ENTITY loc23_9 "toll booth">
<!ENTITY loc23_10 "toll plaza">
<!ENTITY loc23_11 "flyover">
<!ENTITY loc23_12 "underpass">
<!ENTITY loc23_13 "traffic lights">
<!ENTITY loc23_14 "road-rail crossing">
<!ENTITY loc23_15 "marker post">
<!ENTITY loc23_16 "exit">
<!ENTITY loc23_17 "cross road">
<!ENTITY loc23_18 "kiss and ride">

```

```

<!ENTITY loc23_19 "set-down">
<!ENTITY loc23_20 "pick-up">
<!ENTITY loc23_21 "set-down and pick-up">
<!ENTITY loc23_255 "unknown">

<!ELEMENT road_object EMPTY>
<!ATTLIST road_object
  road_object CDATA #REQUIRED
>

```

road_object: This describes a road object. The road_object attribute shall use entity references of the form loc23_x.

Example:

```
<road_object road_object="&loc23_10;"/>
```

5.3.3.2.9 building

```

<!-- loc_table 24: buildings -->
<!ENTITY loc24_0 "unknown">
<!ENTITY loc24_1 "airport terminal">
<!ENTITY loc24_2 "ferry terminal">
<!ENTITY loc24_3 "railway car terminal">
<!ENTITY loc24_4 "railway station">
<!ENTITY loc24_5 "underground station">
<!ENTITY loc24_6 "bus station">
<!ENTITY loc24_7 "cable car station">
<!ENTITY loc24_8 "tram station">
<!ENTITY loc24_9 "rapid transit station">
<!ENTITY loc24_10 "manor">
<!ENTITY loc24_11 "church">
<!ENTITY loc24_12 "store">
<!ENTITY loc24_13 "retail park">
<!ENTITY loc24_14 "multi-story car park">
<!ENTITY loc24_15 "fire station">
<!ENTITY loc24_16 "ambulance station">
<!ENTITY loc24_17 "police station">
<!ENTITY loc24_18 "school">
<!ENTITY loc24_19 "university">
<!ENTITY loc24_20 "palace">
<!ENTITY loc24_21 "hospital">
<!ENTITY loc24_22 "hotel">
<!ENTITY loc24_23 "motel">
<!ENTITY loc24_24 "lighthouse">
<!ENTITY loc24_25 "mine">
<!ENTITY loc24_26 "swimming pool">
<!ENTITY loc24_27 "prison">
<!ENTITY loc24_28 "official building">
<!ENTITY loc24_29 "town hall">
<!ENTITY loc24_30 "pub">
<!ENTITY loc24_31 "restaurant">
<!ENTITY loc24_32 "bistro">
<!ENTITY loc24_33 "guest house">
<!ENTITY loc24_34 "café">
<!ENTITY loc24_35 "fast food restaurant">
<!ENTITY loc24_36 "military barracks">
<!ENTITY loc24_37 "sports hall">
<!ENTITY loc24_38 "exhibition hall">
<!ENTITY loc24_39 "convention centre">
<!ENTITY loc24_40 "cultural hall">
<!ENTITY loc24_41 "concert hall">
<!ENTITY loc24_42 "theatre">
<!ENTITY loc24_43 "opera house">
<!ENTITY loc24_44 "cinema">
<!ENTITY loc24_45 "museum">
<!ENTITY loc24_46 "tourist information office">
<!ENTITY loc24_47 "railway tunnel entrance">
<!ENTITY loc24_48 "water tower">
<!ENTITY loc24_49 "large telecommunications tower">

```

```

<!ENTITY loc24_50 "small telecommunications tower">
<!ENTITY loc24_51 "tower">
<!ENTITY loc24_52 "post building">
<!ENTITY loc24_53 "government building">
<!ENTITY loc24_54 "border checkpoint">
<!ENTITY loc24_55 "supermarket">
<!ENTITY loc24_56 "newsagent">
<!ENTITY loc24_57 "kindergarten">
<!ENTITY loc24_58 "senior citizens residence">
<!ENTITY loc24_59 "college">
<!ENTITY loc24_60 "embassy">
<!ENTITY loc24_61 "waiting room">
<!ENTITY loc24_62 "toilets">
<!ENTITY loc24_255 "unknown">

<!ELEMENT building EMPTY>
<ATTLIST building
  building CDATA #REQUIRED
>

```

building: This describes a building. The building attribute shall use entity references of the form loc24_x.

Example:

```
<building building="&loc24_55;"/>
```

5.3.3.2.10 geographical_site

```

<!-- loc_table 25: geographical sites -->
<!ENTITY loc25_0 "unknown">
<!ENTITY loc25_1 "coast">
<!ENTITY loc25_2 "mountain">
<!ENTITY loc25_3 "mountainous region">
<!ENTITY loc25_4 "airport area">
<!ENTITY loc25_5 "alps">
<!ENTITY loc25_6 "canal">
<!ENTITY loc25_7 "cave">
<!ENTITY loc25_8 "retail park">
<!ENTITY loc25_9 "car park">
<!ENTITY loc25_10 "park and ride area">
<!ENTITY loc25_11 "forest">
<!ENTITY loc25_12 "sports stadium">
<!ENTITY loc25_13 "sports ground">
<!ENTITY loc25_14 "golf course">
<!ENTITY loc25_15 "harbour">
<!ENTITY loc25_16 "marina">
<!ENTITY loc25_17 "island">
<!ENTITY loc25_18 "lake">
<!ENTITY loc25_19 "river">
<!ENTITY loc25_20 "swimming area">
<!ENTITY loc25_21 "leisure centre">
<!ENTITY loc25_22 "beach area">
<!ENTITY loc25_23 "mountain pass">
<!ENTITY loc25_24 "summit">
<!ENTITY loc25_25 "peninsula">
<!ENTITY loc25_26 "service area">
<!ENTITY loc25_27 "picnic area">
<!ENTITY loc25_28 "rest area">
<!ENTITY loc25_29 "railway line">
<!ENTITY loc25_30 "military restricted area">
<!ENTITY loc25_31 "camping area">
<!ENTITY loc25_32 "caravan park">
<!ENTITY loc25_33 "community">
<!ENTITY loc25_34 "village">
<!ENTITY loc25_35 "fair ground">
<!ENTITY loc25_36 "waterfall">
<!ENTITY loc25_37 "market place">
<!ENTITY loc25_38 "park">
<!ENTITY loc25_39 "view point">
<!ENTITY loc25_40 "border">

```

```

<!ENTITY loc25_41 "theme park">
<!ENTITY loc25_42 "industrial area">
<!ENTITY loc25_43 "race course">
<!ENTITY loc25_44 "science park">
<!ENTITY loc25_45 "city centre">
<!ENTITY loc25_46 "village centre">
<!ENTITY loc25_47 "town centre">
<!ENTITY loc25_48 "town">
<!ENTITY loc25_49 "city">
<!ENTITY loc25_255 "unknown">

<!ELEMENT geographical_site EMPTY>
<!ATTLIST geographical_site
    geographical_site CDATA #REQUIRED
>

```

geographical_site: This describes a geographical site. The geographical_site attribute shall use entity references of the form loc25_x.

Example:

```
<geographical_site geographical_site="&loc25_15;"/>
```

5.3.3.2.11 sightseeing_attraction

```

<!-- loc_table 26: sightseeing attractions -->
<!ENTITY loc26_0 "unknown">
<!ENTITY loc26_1 "botanical garden">
<!ENTITY loc26_2 "castle">
<!ENTITY loc26_3 "manor">
<!ENTITY loc26_4 "cave">
<!ENTITY loc26_5 "church">
<!ENTITY loc26_6 "geological site">
<!ENTITY loc26_7 "archeological site">
<!ENTITY loc26_8 "ruined building">
<!ENTITY loc26_255 "unknown">

<!ELEMENT sightseeing_attraction EMPTY>
<!ATTLIST sightseeing_attraction
    sightseeing_attraction CDATA #REQUIRED
>

```

sightseeing_attraction: This describes a sightseeing attraction. The sightseeing_attraction attribute shall use entity references of the form loc26_x.

Example:

```
<sightseeing_attraction sightseeing_attraction="&loc26_5;"/>
```

5.3.3.2.12 reference_object_descriptor

```

<!ELEMENT reference_object_descriptor (language*)>
<!ATTLIST reference_object_descriptor
    reference_object_name CDATA #REQUIRED
>

```

reference_object_descriptor: This describes the name of a reference object.

Example:

```
<reference_object_descriptor reference_object_name="New Forest"/>
```

5.3.3.3 floor

```
<!ELEMENT floor EMPTY>
<!ATTLIST floor
  floor %intsiti; #REQUIRED
>
```

floor: This describes the floor of a building.

Example:

```
<floor floor="0"/>
```

5.3.3.4 associated_modes

```
<!ELEMENT associated_modes (node_description*)>
<!ATTLIST associated_modes
  number_of_modes %intuntj; #REQUIRED
>
```

associated_modes: This describes other node_descriptions that may be within the current node_description. Note that this makes the structure recursive.

Example:

```
<associated_modes number_of_modes="1">
  <node_description>...</node_description>
</associated_modes>
```

STANDARDSISO.COM : Click to view the full PDF of ISO/TS 24530-2:2006

Annex A (normative)

DTD for tpeg-locML — TPEG Location Referencing for applications (tpeg-locML.dtd)

```

<?xml version="1.0" encoding="UTF-8"?>
<!--=====-->
<!--tpeg-locML TPEG Location Referencing for applications DTD v1.0-->
<!--2005-04-18-->
<!--PUBLIC"-//EBU//DTD tpeg-locML//EN"-->
<!--=====-->
<!ENTITY % locML_ent PUBLIC "-//EBU//ENTITIES tpeg-locML//EN" "locML.ent">
%locML_ent;
<!-- tpeg_loc_container element
      language uses loc41_x
-->
<!ELEMENT location_container ((location_coordinates | location_descriptions)*)>
<!ATTLIST location_container
      language CDATA #REQUIRED
>
<!--===== Location Co-ordinates =====>
<!-- location_coordinates
      type uses loc01_x
-->
<!ELEMENT location_coordinates ((mode_type_list | location_point | direction)*)>
<!ATTLIST location_coordinates
      location_type CDATA #REQUIRED
>
<!-- mode_type_list -->
<!ELEMENT mode_type_list (mode_of_transport)*>
<!-- mode_of_transport
      mode uses loc05_x
-->
<!ELEMENT mode_of_transport EMPTY>
<!ATTLIST mode_of_transport
      mode_of_transport CDATA #REQUIRED
>
<!-- direction
      direction_type uses loc02_x
-->
<!ELEMENT direction EMPTY>
<!ATTLIST direction
      direction_type CDATA #REQUIRED
>
<!-- wrapper for location points
-->
<!ELEMENT location_point (WGS84 | location_descriptor)*>
<!-- WGS84
      longitude/latitude are in degrees.
-->
<!ELEMENT WGS84 ((expansion | height)*)>
<!ATTLIST WGS84
      longitude CDATA #REQUIRED
      latitude CDATA #REQUIRED
>
<!-- expansion
      radius_of_circle is in metres.
-->
<!ELEMENT expansion EMPTY>
<!ATTLIST expansion
      radius_of_circle CDATA #REQUIRED
>
<!-- descriptor
      descriptor_type uses loc03_x

```

```

-->
<!ELEMENT location_descriptor (language*)>
<!ATTLIST location_descriptor
  descriptor_type CDATA #REQUIRED
  descriptor %short_string; #REQUIRED
>
<!-- language
  language_code uses loc41_x
-->
<!ELEMENT language EMPTY>
<!ATTLIST language
  language_code CDATA #REQUIRED
>
<!-- height
  height_descriptor uses loc04_x
  height is in metres.
-->
<!ELEMENT height EMPTY>
<!ATTLIST height
  height_descriptor CDATA #REQUIRED
  height %intsili; #REQUIRED
>
<!--===== Location Descriptions =====>
<!-- location_descriptions -->
<!ELEMENT location_descriptions (area_reference, (area_reference | network_reference | node_reference)*)>
<!-- area_reference
  country uses loc40_x
-->
<!ELEMENT area_reference (area_tree_entry*)>
<!ATTLIST area_reference
  country CDATA #REQUIRED
  area_tree_version %intunti; #REQUIRED
>
<!-- area_tree_entry -->
<!ELEMENT area_tree_entry ((area_type | area_qualifier | area_descriptor)*)>
<!ATTLIST area_tree_entry
  level %intunti; #REQUIRED
  branch %intunlo; #REQUIRED
  predecessor_branch %intunlo; #REQUIRED
>
<!-- area_type
  area_type uses loc06_x
-->
<!ELEMENT area_type EMPTY>
<!ATTLIST area_type
  area_type CDATA #REQUIRED
>
<!-- area_qualifier
  area_qualifier uses loc07_x
-->
<!ELEMENT area_qualifier EMPTY>
<!ATTLIST area_qualifier
  area_qualifier CDATA #REQUIRED
>
<!-- area_descriptor -->
<!ELEMENT area_descriptor (language*)>
<!ATTLIST area_descriptor
  area_name %short_string; #REQUIRED
>
<!-- network_reference
  network_layer uses loc08_x
  link_type uses loc09_x, loc10_x, loc11_x, loc12_x, loc13_x, loc14_x, loc15_x and loc16_x
-->
<!ELEMENT network_reference ((link_number | link_number_suffix | direction | segment_name | link_descriptor |
network_operator_descriptor)*)>
<!ATTLIST network_reference
  network_layer CDATA #REQUIRED
  link_type CDATA #REQUIRED
>
<!-- link_number -->
<!ELEMENT link_number EMPTY>

```

```

<!ATTLIST link_number
  link_number %intunti; #REQUIRED
>
<!-- link_number_suffix
  character is a single character.
-->
<!ELEMENT link_number_suffix EMPTY>
<!ATTLIST link_number_suffix
  character CDATA #REQUIRED
>
<!-- segment_name -->
<!ELEMENT segment_name ((from_descriptor | to_descriptor)*>
<!-- from_descriptor -->
<!ELEMENT from_descriptor (language*)>
<!ATTLIST from_descriptor
  from_name %short_string; #REQUIRED
>
<!-- to_descriptor -->
<!ELEMENT to_descriptor (language*)>
<!ATTLIST to_descriptor
  to_name %short_string; #REQUIRED
>
<!-- link_descriptor -->
<!ELEMENT link_descriptor (language*)>
<!ATTLIST link_descriptor
  link_name %short_string; #REQUIRED
>
<!-- network_operator_descriptor -->
<!ELEMENT network_operator_descriptor (language*)>
<!ATTLIST network_operator_descriptor
  network_operator_name %short_string; #REQUIRED
>
<!-- node_reference
  node_type uses loc17_x
-->
<!ELEMENT node_reference (node_descriptor, (node_descriptor | reference_object | WGS84 | expansion | floor |
node_reference_descriptor | mode_type_list | associated_modes)*>
<!ATTLIST node_reference
  node_type CDATA #REQUIRED
>
<!-- node_descriptor -->
<!ELEMENT node_descriptor (language*)>
<!ATTLIST node_descriptor
  node_name %short_string; #REQUIRED
>
<!-- reference_object -->
<!ELEMENT reference_object ((fuzzy_directionality_glue | explicit_directionality_glue | fuzzy_proximity_glue |
explicit_proximity_glue | intermediate_glue | orientation | distance | road_object | building | geographical_site |
sightseeing_attraction | reference_object_descriptor)*>
<!-- fuzzy_directionality_glue
  fuzzy_directionality_glue uses loc18_x
-->
<!ELEMENT fuzzy_directionality_glue EMPTY>
<!ATTLIST fuzzy_directionality_glue
  fuzzy_directionality_glue CDATA #REQUIRED
>
<!-- explicit_directionality_glue
  explicit_directionality_glue uses loc19_x
-->
<!ELEMENT explicit_directionality_glue EMPTY>
<!ATTLIST explicit_directionality_glue
  explicit_directionality_glue CDATA #REQUIRED
>
<!-- fuzzy_proximity_glue
  fuzzy_proximity_glue uses loc20_x
-->
<!ELEMENT fuzzy_proximity_glue EMPTY>
<!ATTLIST fuzzy_proximity_glue
  fuzzy_proximity_glue CDATA #REQUIRED
>
<!-- explicit_proximity_glue

```

```

    explicit_proximity_glue uses loc21_x
-->
<!ELEMENT explicit_proximity_glue EMPTY>
<!ATTLIST explicit_proximity_glue
    explicit_proximity_glue CDATA #REQUIRED
>
<!-- intermediate_glue
    intermediate_glue uses loc22_x
-->
<!ELEMENT intermediate_glue EMPTY>
<!ATTLIST intermediate_glue
    intermediate_glue CDATA #REQUIRED
>
<!-- orientation
    orientation uses loc27_x
-->
<!ELEMENT orientation EMPTY>
<!ATTLIST orientation
    orientation CDATA #REQUIRED
>
<!-- distance
    distance in m
-->
<!ELEMENT distance EMPTY>
<!ATTLIST distance
    metres %numag; #REQUIRED
>
<!-- road_object
    road_object uses loc23_x
-->
<!ELEMENT road_object EMPTY>
<!ATTLIST road_object
    road_object CDATA #REQUIRED
>
<!-- building
    building uses loc24_x
-->
<!ELEMENT building EMPTY>
<!ATTLIST building
    building CDATA #REQUIRED
>
<!-- geographical_site
    geographical_site uses loc25_x
-->
<!ELEMENT geographical_site EMPTY>
<!ATTLIST geographical_site
    geographical_site CDATA #REQUIRED
>
<!-- sightseeing_attraction
    sightseeing_attraction uses loc26_x
-->
<!ELEMENT sightseeing_attraction EMPTY>
<!ATTLIST sightseeing_attraction
    sightseeing_attraction CDATA #REQUIRED
>
<!-- reference_object_descriptor -->
<!ELEMENT reference_object_descriptor (language*)>
<!ATTLIST reference_object_descriptor
    reference_object_name CDATA #REQUIRED
>
<!-- floor -->
<!ELEMENT floor EMPTY>
<!ATTLIST floor
    floor %intsiti; #REQUIRED
>
<!-- node_reference_descriptor (was descriptor but name conflict) -->
<!ELEMENT node_reference_descriptor (language*)>
<!ATTLIST node_reference_descriptor
    descriptive_name %short_string; #REQUIRED
>
<!-- associated_modes -->

```

```
<!ELEMENT associated_modes (node_reference*)>  
<!ATTLIST associated_modes  
  number_of_modes %intunti; #REQUIRED  
>
```

STANDARDSISO.COM : Click to view the full PDF of ISO/TS 24530-2:2006

Annex B (normative)

External entity references for tpeg-locML — TPEG Location Referencing for applications (tpeg-locML.ent)

```

<?xml version="1.0" encoding="UTF-8"?>
<!--=====
<!--tpeg-locML TPEG Location Referencing for applications ENT v1.0-->
<!--translator, company: (used when translated into other languages)-->
<!--2005-04-18 -->
<!--===== -->
<!-- loc_table 01: location type -->
<!ENTITY loc01_0 "unknown">
<!ENTITY loc01_1 "large area">
<!ENTITY loc01_2 "nodal area">
<!ENTITY loc01_3 "segment">
<!ENTITY loc01_4 "reserved for future use">
<!ENTITY loc01_5 "intersection">
<!ENTITY loc01_6 "framed point">
<!ENTITY loc01_7 "non-linked point">
<!ENTITY loc01_8 "connected point">
<!ENTITY loc01_255 "unknown">
<!-- loc_table 02: direction type -->
<!ENTITY loc02_0 "unknown">
<!ENTITY loc02_1 "opposite">
<!ENTITY loc02_2 "both ways">
<!ENTITY loc02_3 "northbound">
<!ENTITY loc02_4 "north-eastbound">
<!ENTITY loc02_5 "eastbound">
<!ENTITY loc02_6 "south-eastbound">
<!ENTITY loc02_7 "southbound">
<!ENTITY loc02_8 "south-westbound">
<!ENTITY loc02_9 "westbound">
<!ENTITY loc02_10 "north-westbound">
<!ENTITY loc02_11 "clockwise">
<!ENTITY loc02_12 "anti-clockwise">
<!ENTITY loc02_13 "inner-ring">
<!ENTITY loc02_14 "outer-ring">
<!ENTITY loc02_15 "all directions">
<!ENTITY loc02_255 "unknown">
<!-- loc_table 03: descriptor type -->
<!ENTITY loc03_0 "unknown">
<!ENTITY loc03_1 "area name">
<!ENTITY loc03_2 "node name">
<!ENTITY loc03_3 "from">
<!ENTITY loc03_4 "to">
<!ENTITY loc03_5 "link name">
<!ENTITY loc03_6 "local link name">
<!ENTITY loc03_7 "road">
<!ENTITY loc03_8 "junction with">
<!ENTITY loc03_9 "and">
<!ENTITY loc03_10 "intersection name">
<!ENTITY loc03_11 "point name">
<!ENTITY loc03_12 "non-linked point name">
<!ENTITY loc03_13 "multimode point name">
<!ENTITY loc03_14 "submode point name">
<!ENTITY loc03_15 "mode name">
<!ENTITY loc03_16 "internal division name">
<!ENTITY loc03_17 "airport name">
<!ENTITY loc03_18 "railway station">
<!ENTITY loc03_19 "metro station name">
<!ENTITY loc03_20 "terminal identifier">
<!ENTITY loc03_21 "gate identifier">
<!ENTITY loc03_22 "platform identifier">

```

```

<!ENTITY loc03_23 "building name">
<!ENTITY loc03_24 "town">
<!ENTITY loc03_25 "county">
<!ENTITY loc03_26 "region name">
<!ENTITY loc03_27 "nation name">
<!ENTITY loc03_28 "river name">
<!ENTITY loc03_29 "canal name">
<!ENTITY loc03_30 "lake name">
<!ENTITY loc03_31 "sea name">
<!ENTITY loc03_32 "junction">
<!ENTITY loc03_33 "bus stop name">
<!ENTITY loc03_34 "IATA identifier">
<!ENTITY loc03_35 "tidal river name">
<!ENTITY loc03_36 "bus stop identifier">
<!ENTITY loc03_37 "ferry port name">
<!ENTITY loc03_38 "administrative area name">
<!ENTITY loc03_39 "police force control area name">
<!ENTITY loc03_40 "administrative reference name">
<!ENTITY loc03_41 "point-of-interest name">
<!ENTITY loc03_42 "parking facility name">
<!ENTITY loc03_43 "service area name">
<!ENTITY loc03_255 "descriptor name">
<!-- loc_table 04: hight descriptor -->
<!ENTITY loc04_0 "unknown">
<!ENTITY loc04_1 "above">
<!ENTITY loc04_2 "below">
<!ENTITY loc04_3 "at">
<!ENTITY loc04_4 "above sea level">
<!ENTITY loc04_5 "below sea level">
<!ENTITY loc04_6 "at sea level">
<!ENTITY loc04_7 "above street level">
<!ENTITY loc04_8 "below street level">
<!ENTITY loc04_9 "at street level">
<!ENTITY loc04_255 "undefined">
<!-- loc_table 05: modes of transport -->
<!ENTITY loc05_0 "unknown">
<!ENTITY loc05_1 "road">
<!ENTITY loc05_2 "railway">
<!ENTITY loc05_3 "coach">
<!ENTITY loc05_4 "suburban railway">
<!ENTITY loc05_5 "underground">
<!ENTITY loc05_6 "bus">
<!ENTITY loc05_7 "tram">
<!ENTITY loc05_8 "water transport services">
<!ENTITY loc05_9 "aircraft">
<!ENTITY loc05_10 "telecabin">
<!ENTITY loc05_11 "funicular">
<!ENTITY loc05_12 "taxi">
<!ENTITY loc05_13 "self drive">
<!ENTITY loc05_14 "cable-drawn boat">
<!ENTITY loc05_15 "monorail">
<!ENTITY loc05_16 "light railway">
<!ENTITY loc05_255 "undefined">
<!-- loc_table 06: area type -->
<!ENTITY loc06_0 "unknown">
<!ENTITY loc06_1 "continent">
<!ENTITY loc06_2 "country">
<!ENTITY loc06_3 "area">
<!ENTITY loc06_4 "county">
<!ENTITY loc06_5 "county council">
<!ENTITY loc06_6 "fuzzy">
<!ENTITY loc06_7 "city">
<!ENTITY loc06_8 "town">
<!ENTITY loc06_9 "village">
<!ENTITY loc06_10 "urban district">
<!ENTITY loc06_255 "unknown">
<!-- loc_table 07: area qualifier -->
<!ENTITY loc07_0 "unknown">
<!ENTITY loc07_1 "part of">
<!ENTITY loc07_2 "higher part of">
<!ENTITY loc07_3 "lower part of">

```



```

<!ENTITY loc12_1 "service tram">
<!ENTITY loc12_2 "sightseeing tram">
<!ENTITY loc12_255 "tram link">
<!-- loc_table 13: train link -->
<!ENTITY loc13_0 "unknown">
<!ENTITY loc13_1 "international">
<!ENTITY loc13_2 "national">
<!ENTITY loc13_3 "inter-city">
<!ENTITY loc13_4 "regional">
<!ENTITY loc13_5 "suburban">
<!ENTITY loc13_6 "local">
<!ENTITY loc13_7 "tourist">
<!ENTITY loc13_8 "rack railway">
<!ENTITY loc13_255 "train link">
<!-- loc_table 14: telecabin link -->
<!ENTITY loc14_0 "unknown">
<!ENTITY loc14_1 "telecabin">
<!ENTITY loc14_2 "funicular">
<!ENTITY loc14_3 "cable car">
<!ENTITY loc14_4 "elevator">
<!ENTITY loc14_5 "chair lift">
<!ENTITY loc14_6 "drag lift">
<!ENTITY loc14_7 "egg lift">
<!ENTITY loc14_8 "mineral buckets">
<!ENTITY loc14_255 "telecabin link">
<!-- loc_table 15: water transport link -->
<!ENTITY loc15_0 "unknown">
<!ENTITY loc15_1 "local passenger boat">
<!ENTITY loc15_2 "regional passenger boat">
<!ENTITY loc15_3 "national passenger boat">
<!ENTITY loc15_4 "international passenger boat ">
<!ENTITY loc15_5 "local car ferry">
<!ENTITY loc15_6 "regional car ferry">
<!ENTITY loc15_7 "national car ferry">
<!ENTITY loc15_8 "international car ferry">
<!ENTITY loc15_9 "post boat">
<!ENTITY loc15_10 "train ferry">
<!ENTITY loc15_12 "road ferry link">
<!ENTITY loc15_13 "airport boat link">
<!ENTITY loc15_14 "sightseeing boat">
<!ENTITY loc15_15 "schoolboat">
<!ENTITY loc15_255 "water transport link">
<!-- loc_table 16: air link -->
<!ENTITY loc16_0 "unknown">
<!ENTITY loc16_1 "long haul scheduled intercontinental link">
<!ENTITY loc16_2 "international scheduled link">
<!ENTITY loc16_3 "short haul international scheduled link">
<!ENTITY loc16_4 "internal scheduled link">
<!ENTITY loc16_5 "intercontinental charter air link">
<!ENTITY loc16_6 "international charter air link">
<!ENTITY loc16_7 "internal charter air link">
<!ENTITY loc16_8 "sightseeing air link">
<!ENTITY loc16_9 "shuttle service air link">
<!ENTITY loc16_10 "helicopter service air link">
<!ENTITY loc16_255 "air link">
<!-- loc_table 17: node type -->
<!ENTITY loc17_0 "unknown">
<!ENTITY loc17_1 "mono mode point">
<!ENTITY loc17_2 "multimodal node">
<!ENTITY loc17_255 "unknown">
<!-- loc_table 18: fuzzy directionality glue -->
<!ENTITY loc18_0 "unknown">
<!ENTITY loc18_1 "above">
<!ENTITY loc18_2 "over">
<!ENTITY loc18_3 "under">
<!ENTITY loc18_4 "below">
<!ENTITY loc18_5 "after">
<!ENTITY loc18_6 "before">
<!ENTITY loc18_7 "in front of">
<!ENTITY loc18_8 "behind">
<!ENTITY loc18_9 "beyond">

```

<!ENTITY loc18_10 "past">
 <!ENTITY loc18_11 "outside">
 <!ENTITY loc18_12 "inside">
 <!ENTITY loc18_13 "down from">
 <!ENTITY loc18_14 "down to">
 <!ENTITY loc18_15 "up from">
 <!ENTITY loc18_16 "up to">
 <!ENTITY loc18_17 "from">
 <!ENTITY loc18_18 "to">
 <!ENTITY loc18_19 "towards">
 <!ENTITY loc18_20 "approaching">
 <!ENTITY loc18_21 "in the direction of ">
 <!ENTITY loc18_22 "direction ">
 <!ENTITY loc18_255 "unknown">
 <!-- loc_table 19: explicit directionality glue -->
 <!ENTITY loc19_0 "unknown">
 <!ENTITY loc19_1 "opposite">
 <!ENTITY loc19_2 "via">
 <!ENTITY loc19_3 "entrance to">
 <!ENTITY loc19_4 "exit from">
 <!ENTITY loc19_255 "unknown">
 <!-- loc_table 20: fuzzy proximity glue -->
 <!ENTITY loc20_0 "unknown">
 <!ENTITY loc20_1 "near by">
 <!ENTITY loc20_2 "height of">
 <!ENTITY loc20_3 "close to">
 <!ENTITY loc20_4 "beside">
 <!ENTITY loc20_5 "near">
 <!ENTITY loc20_6 "next to">
 <!ENTITY loc20_255 "unknown">
 <!-- loc_table 21: explicit proximity glue -->
 <!ENTITY loc21_0 "unknown">
 <!ENTITY loc21_1 "unknown">
 <!ENTITY loc21_2 "at">
 <!ENTITY loc21_3 "on">
 <!ENTITY loc21_4 "upon">
 <!ENTITY loc21_5 "in">
 <!ENTITY loc21_255 "unknown">
 <!-- loc_table 22: intermediate glue -->
 <!ENTITY loc22_0 "unknown">
 <!ENTITY loc22_1 "between">
 <!ENTITY loc22_2 "downhill">
 <!ENTITY loc22_3 "uphill">
 <!ENTITY loc22_4 "along">
 <!ENTITY loc22_5 "through">
 <!ENTITY loc22_6 "with">
 <!ENTITY loc22_255 "unknown">
 <!-- loc_table 23: road objects -->
 <!ENTITY loc23_0 "unknown">
 <!ENTITY loc23_1 "junction">
 <!ENTITY loc23_2 "roundabout">
 <!ENTITY loc23_3 "bridge">
 <!ENTITY loc23_4 "dam">
 <!ENTITY loc23_5 "fuel station">
 <!ENTITY loc23_6 "ringroad">
 <!ENTITY loc23_7 "gyratory system">
 <!ENTITY loc23_8 "road tunnel">
 <!ENTITY loc23_9 "toll booth">
 <!ENTITY loc23_10 "toll plaza">
 <!ENTITY loc23_11 "flyover">
 <!ENTITY loc23_12 "underpass">
 <!ENTITY loc23_13 "traffic lights">
 <!ENTITY loc23_14 "road-rail crossing">
 <!ENTITY loc23_15 "marker post">
 <!ENTITY loc23_16 "exit">
 <!ENTITY loc23_17 "cross road">
 <!ENTITY loc23_18 "kiss and ride">
 <!ENTITY loc23_19 "set-down">
 <!ENTITY loc23_20 "pick-up">
 <!ENTITY loc23_21 "set-down and pick-up">
 <!ENTITY loc23_255 "unknown">

Click to view the full PDF of ISO/TS 24530-2:2006