



**NSAI**  
Standards

Irish Standard  
I.S. ENV 12315-1:1996

# Traffic and Traveller Information (TTI) - TTI Messages via Dedicated Short-Range Communication - Part 1: Data Specification - Downlink (Roadside to Vehicle)

## I.S. ENV 12315-1:1996

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

**The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:**

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

<i>This document replaces:</i>	<i>This document is based on:</i> ENV 12315-1:1996	<i>Published:</i> 21 August, 1996
This document was published under the authority of the NSAI and comes into effect on: 15 August, 2010		ICS number: 35.240.60
<b>NSAI</b> 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W <b>NSAI.ie</b>	<b>Sales:</b> T +353 1 857 6730 F +353 1 857 6729 W standards.ie
Údarás um Chaighdeán Náisiúnta na hÉireann		

EUROPEAN PRESTANDARD

I.S. EN 12315-1:1996

**ENV 12315-1**

PRÉNORME EUROPÉENNE

EUROPÄISCHE VORNORM

August 1996

---

ICS 35.240.60

Descriptors: teleprocessing, road transport, traffic, traffic control, information interchange, radiocommunications, open systems interconnection, data transmission, messages, data, specifications

English version

**Traffic and Traveller Information (TTI) - TTI  
Messages via Dedicated Short-Range  
Communication - Part 1: Data Specification -  
Downlink (Roadside to Vehicle)**

This European Prestandard (ENV) was approved by CEN on 1996-07-24 as a prospective standard for provisional application. The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into an European Standard (EN).

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels



**CONTENTS (INFORMATIVE)**

Contents List (INFORMATIVE) .....	3
Foreword (INFORMATIVE) .....	5
Introduction (INFORMATIVE) .....	7
Title (NORMATIVE) .....	9
<b>1 Scope (NORMATIVE) .....</b>	<b>11</b>
1.1 General .....	11
1.2 Embeddance in OSI 7-Layer model .....	12
1.3 Applications .....	13
1.3.1 Route Guidance Data .....	13
1.3.2 Messages and Warnings .....	16
1.3.3 Car Park Info .....	16
1.3.4 Park & Ride Info .....	16
<b>2 Normative References (NORMATIVE) .....</b>	<b>17</b>
<b>3 Definitions (NORMATIVE) .....</b>	<b>19</b>
3.1 Definitions .....	19
3.2 Symbols and Abbreviations .....	22
<b>4 Data Organization Structure (NORMATIVE) .....</b>	<b>23</b>
4.1 File Structure .....	23
4.2 Table Structure .....	25
4.3 Checksums .....	26
4.3.1 Purpose of Checksums .....	26
4.3.2 Checksum Algorithm .....	26
4.4 Encryption .....	27
4.5 Organization Table - ORG (TID 0) .....	28
4.5.1 Item Descriptions .....	29
<b>5 General Data - GENDAT (TID 1) (NORMATIVE) .....</b>	<b>31</b>
5.1 Item Description .....	32
5.1.1 Fixed Data Part .....	32
5.1.2 Optional Data Part .....	35
<b>6 Entries and Exits (NORMATIVE) .....</b>	<b>41</b>
6.1 General .....	41
6.2 Types of Beacon Junctions .....	42
6.3 Criteria for the choice of Beacon junctions .....	44
6.4 Exit Description Parameters .....	46
6.4.1 Exit Descriptions for Exits into the Guided Road Network .....	46
6.4.2 Exit Description for Exits into the Unguided Road Network .....	50
6.4.3 Parameter Examples for different Junction Types .....	51
6.5 Principle of Exit Recognition in the Vehicle and Position Adjustment .....	52

6.6	Entry/Exit Definition - ENEX (TID 2)	54
6.6.1	Item Description	54
7	Destination Handling (NORMATIVE)	59
7.1	General	59
7.1.1	Beacon Region	60
7.1.2	Outer Regions	60
7.1.3	Hierarchical Division and Coding	60
7.1.4	Principles of the Decoding Algorithm	61
7.2	General Rules for Coding of the Data Tables	63
7.2.1	Boundaries of the Overview Package - BOVP <sub>o</sub> (TID 10)	64
7.2.2	Destination Zones of the Beacon Region - DZBR (TID 11)	66
7.2.3	Boundaries of the Outer Regions - BOUT <sub>p,o</sub> (TID 12 .. 25)	69
7.2.4	List of Corner Point Indices	71
7.2.5	Corner Points of all Regions - COPxxx (TID 27, 28, 29 .. 42)	72
7.2.6	References of Route Guidance Information - REF_RGI <sub>o</sub> (TID 44)	74
7.2.7	Route Guidance Information - RG_INFO <sub>o</sub> (TID 45)	77
8	Vehicle and Driver Specific Route Choice (NORMATIVE)	79
8.1	General	79
8.2	Coding of the Data Tables	80
8.2.1	Route Choice Table - RCT (TID 3)	80
8.2.2	Data Section: Road Restriction Groups	81
8.2.3	Data Section: Route Type Groups	84
8.2.4	Data Section: Restriction Class Matrix	85
9	Definition of Links (NORMATIVE)	87
9.1	General	87
9.2	Coding of the Data Tables	90
9.2.1	General format of LINK_PT, LINK_TAB and LINK_ADD (TID 50, 51, 52)	90
9.2.2	Detailed description of LINK_PT (TID 50)	92
9.2.3	Description of LINK_TAB (TID 51)	93
9.2.4	Detailed Description of LINK_ADD (TID 52)	116
9.3	Link related Text Messages - LINK_TEXT (TID 53)	117
10	Definition of Link Chains (NORMATIVE)	119
10.1	General	119
10.2	Description of link chains: LC_REL <sub>o</sub> , LC_QUEUE <sub>o</sub> (TID 55, 56)	123
	Annex A Limitations (NORMATIVE)	125
	Annex B Summary of Tables (NORMATIVE)	127
	Annex C Illustrations (INFORMATIVE)	129
	Annex D Guideline for System Designer (INFORMATIVE)	131

## **FOREWORD (INFORMATIVE)**

This Prestandard has been prepared by Working Group 4 (Sub-Working Group 4.2) of Technical Committee CEN/ TC 278 "Road transport and traffic telematics", the secretariat of which is held by NNI to cover the Work Item 4.2.2.

In the field of Traffic and Traveller Information, the innovative rate is high, with many research and development projects under way in many countries, and there is a need to establish prospective standards which allow competitive manufacturers to introduce products to the market in the knowledge that they can accommodate the future issues of the standard(s) without fundamental change to equipment.

It has been submitted as a first draft to TC278 for consideration and review by TC278 plenary meeting members, for initial comment, as CEN Stage 32. All comments have been reviewed and the document updated. It is hereby issued to CEN Central Secretariat for distribution in accordance with Internal Regulations (Part 2, Section 7) at CEN Stage 49, for formal voting.

No known national standards (identical or conflicting) exist on this subject.

This document constitutes: Part 1 of a two-part European Prestandard, being the data specification for one way (roadside to vehicle direction) of a two-way communications link. Part 2 of this Prestandard covers the reverse direction (vehicle to roadside).

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

**Blank page**



## **Introduction (INFORMATIVE)**

Traffic and Traveller Information may be disseminated through a number of services or means of communication, covering static displays, interactive terminals and in-vehicle equipment.

For all such services, the data to be disseminated and the message structures involved in the various interfaces require clear definition and standard formats, in order to allow competitive products to operate with any received data.

This pre-Standard focuses on the data specification for an air-interface via dedicated short-range communication, whereby the information is produced at a central location (known as the in-station, central office or traffic information and control centre) and disseminated via a network of roadside beacons. It enables messages to be exchanged between different systems and service providers adopting a variety of applications' specifications. Other pre-Standards are being produced by the CEN TC278 Working Group 4, to cover TTI dissemination via other means or services.

It is anticipated that the uses of the data set(s) described in this document will be closely linked to the widespread use of in-vehicle equipment which utilises them – known as "beacon data" – in an efficient manner to guide drivers through the road network accurately and safely. The principle of operation is to follow detailed guidance, step by step, from one beacon to another. The in-vehicle equipment is expected to offer "fall-back" facilities to assist the driver whenever he or she is travelling in an area unequipped with beacons or if the beacon data is unavailable, for whatever reason.

**Blank page**

**Title (NORMATIVE)**

**Traffic and Traveller Information (TTI)**

**TTI Messages via Dedicated Short-Range Communication**

**Part 1: Data Specification – Downlink (Roadside to Vehicle)**

**Blank page**

## 1 Scope (NORMATIVE)

### 1.1 GENERAL

This pre-Standard provides a common message structure for Traffic and Traveller Information messages which are disseminated via dedicated beacon infrastructure (for short-range communications, only).

It, therefore, provides the framework to enable the providers of information services to utilise such a means of dissemination to supply information into a large number of equipped vehicles, together with the suppliers of such in-vehicles equipment to receive, process and/or display the messages to the traveller (driver or passenger).

The message is structured to fit into the protocol framework for DSRC links, as defined in the standards produced by CEN TC278 WG9. Such links may carry data other than Traffic and Traveller Information, as shown in Figure 1, and, in itself, TTI comprises several (potential or optional) data sets, including:

- route guidance data
- messages and warning
- car park information
- park and ride information
- "yellow pages" directories of other services.

This pre-Standard covers all discrete data sets which comprise TTI. However, since research and development of several data sets is incomplete, at this time, this issue of the pre-Standard details only the "route guidance data", which is covered by chapter 5 - 10.

It is anticipated that the other functional data sets will be included with the (pre-)standard, as future issues of the same-numbered document, once R & D activities have produced clear, firm results which may be applied to the standardization process.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-