# SLOVENSKI STANDARD
# SIST ENV ISO 14819-3:2003

**01-oktober-2003**

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**Prometne in potovalne informacije (TTI) - Sporoļ ila TTI prek kodiranih prometnih sporoļ il ï 3. del: Navajanje lokacije za sistem ALERT-C (ISO/TS 14819-3:2000)**

Traffic and Travel Information (TTI) - TTI Messages via traffic message coding - Part 3: Location referencing for ALERT-C (ISO/TS 14819-3:2000)



**Ta slovenski standard je istoveten z: ENV ISO 14819-3:2000**



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**ICS:**

| | | |
|---|---|---|
| 03.220.20 | Cestni transport | Road transport |
| 35.240.60 | Uporabniške rešitve IT v transportu in trgovini | IT applications in transport and trade |

**SIST ENV ISO 14819-3:2003** **en**

EUROPEAN PRESTANDARD

PRÉNORME EUROPÉENNE

EUROPÄISCHE VORNORM

# ENV ISO 14819-3

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ICS 03.220.20; 35.240.60

English version

# Traffic and Travel Information (TTI) - TTI Messages via traffic message coding - Part 3: Location referencing for ALERT-C (ISO/TS 14819-3:2000)

This European Prestandard (ENV) was approved by CEN on 12 July 2000 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 a European Standard.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

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## FOREWORD

The text of ENV ISO 14819-3:2000 has been prepared by Technical Committee CEN/TC 278 "Road transport and traffic telematics", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 204 "Transport information and control systems".

This pre-Standard was prepared by Working Group 7 of CEN TC278. In the field of Traffic and travel 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 manufacturers to introduce competitive products to the market in the knowledge that they can accommodate the future issues of the standard(s) without fundamental change to equipment.

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

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

# INTRODUCTION

This document sets out ways of specifying places and positions in traffic and travel information messages, including RDS-TMC messages (the Radio Data System - Traffic Message Channel).

It defines the structure and semantics of location tables for Traffic Information Centres (TICs) and receivers.

1. TRAFFIC AND TRAVEL MESSAGES

   a) Traffic and travel information is created and updated in an originating database, by human operators or automated systems. Information is transferred to one or more remote systems by means of messages.

   b) In this context, a message is a collection of data which is exchanged to convey information for an agreed purpose between two or more parties. Traffic and travel messages are digitally coded sets of data exchanged by interested parties, which convey information about traffic, travel and/or transport networks. Digital coding can be alphanumeric, as in EDIFACT, or binary, as in RDS-TMC.

   c) The traffic and travel messages developed in ATT programmes of the European Commission are open, non-proprietary proposals for standards intended to serve the public interest by facilitating interconnection and interoperability of the relevant information systems.

2. LOCATION REFERENCING

   a) Location references provide the means of saying *where* in traffic and travel messages.

# 1 SCOPE

This European Prestandard primarily addresses the needs of RDS-TMC ALERT-C messages, which are ready for near-term implementation. However, the modular approach used here is intended to facilitate future extension of the location referencing rules to other traffic and travel messaging systems.

The location referencing rules defined in this European Prestandard address the specific requirements of Traffic Message Channel (TMC) systems, which use abbreviated coding formats to provide TTI messages over mobile bearers (e.g. GSM, DAB) or via exchange protocols like DATEX. In particular, the rules address the Radio Data System - Traffic Message Channel (RDS-TMC), a means of providing digitally-coded traffic and travel information to travellers using a silent data channel (RDS) on FM radio stations, based on the ALERT-C protocol.

## 2 NORMATIVE REFERENCES

This European Prestandard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Prestandard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

| | |
|---|---|
| EN 50067 | Specification of the Radio Data System (RDS) for VHF/FM sound broadcasting in the frequency range from 87,5 to 108,0 MHz. |
| prEN ISO 14819-1:1999 | Traffic and travel Information (TTI) - TTI Messages via traffic message coding - Part 1: Coding protocol for Radio Data System - Traffic Message Channel (RDS-TMC) - RDS-TMC using ALERT-C (ISO/DIS 14819-1:1999) |
| ENV ISO 14825 | Geographic Data Files |

# 3 ABBREVIATIONS

For the purpose of this European Prestandard, the following abbreviations apply:

| | |
|---|---|
| ALERT | **A**dvice and problem **L**ocation for **E**uropean **R**oad **T**raffic (name of a European project in the first half of the 1990's to develop TTI messaging) |
| (A)TT | (**A**dvanced) **T**ransport **T**elematics |
| CENELEC | **C**omité **E**uropéen de **N**ormalisation **ELEC**trotechnique |
| DAB | **D**igital **A**udio **B**roadcasting (future wide-band digital successor of FM) |
| DATEX | **DAT**a **Ex**change network (agreement between traffic information centres for exchange of traffic and travel information, and protocol for such exchange) |
| EDIFACT | **E**lectronic **D**ata **I**nterchange **F**or **A**dministration **C**ommerce and **T**ransport |
| GDF | **G**eographic **D**ata **F**iles (European Prestandard ENV ISO 14825 for modelling and exchange of geographic data for transport telematics applications. Currently under review by CEN and ISO.) |
| RDS | **R**adio **D**ata **S**ystem (digital information channel on FM sub carrier) |
| TIC | **T**raffic **I**nformation **C**entre |
| TMC | **T**raffic **M**essage **C**hannel |
| TTI | **T**raffic and **T**ravel **I**nformation |
| WGS 84 | **W**orld **G**eodetic **S**ystem 1984 |

# 4 LOCATION CODING

Location references used by RDS-TMC are covered by the location referencing rules defined in this section. The ALERT-C coding protocol for RDS-TMC is defined in prEN ISO 14819-1:1999.

ALERT-C supports a digital, silent data broadcast service for motorists, providing information about many kinds of traffic situations. This includes roadwork, weather and traffic incident information relating to major national and international roads, regional roads and local or urban roads.

## 4.1 LOCATION TABLES

Within RDS-TMC, locations are identified and referenced by their location code. A given RDS-TMC service uses a pre-defined location table, containing the pre-stored details of the locations that can be referenced in messages from that service.

A location code in such a message refers and serves as a tabular 'address' of the pre-stored location details in the location table used by the service. A real world location may have more than one location code within the same location table. However, within a given location table, each location code refers to one and only one location. A location code has a number in the range 1 to 63,487.

Note In ALERT-C, a further 2048 numbers are reserved for EUROAD (see prEN ISO 14819-1:1999) and other forms of referencing.



A table may contain a maximum number of 65,536 codes allocated in the following way:



| Location code | Use |
|---|---|
| 0 | reserved |
| 1 - 63,487 | free for normal location coding |
| 63,488 - 64,511 | for special purposes |
| 64,512 - 65,532 | for EUROAD |
| 64,533 - 65,535 | special functions |

Note EUROAD is a coding mechanism within ALERT-C to reference in a specific type of ALERT-C message (the EUROAD message) a location belonging to a different location table.

### 4.1.1 Hierarchical structure

RDS-TMC location tables use a hierarchical structure of pre-defined locations. A system of pointers provides *upward references* to higher-level locations of which the specified location forms a part.

Example Kent would have an upward **area reference** to south-east England. South-east England may be referenced up to the UK, then the British Isles, then Europe, etc. (Figure 4.1).

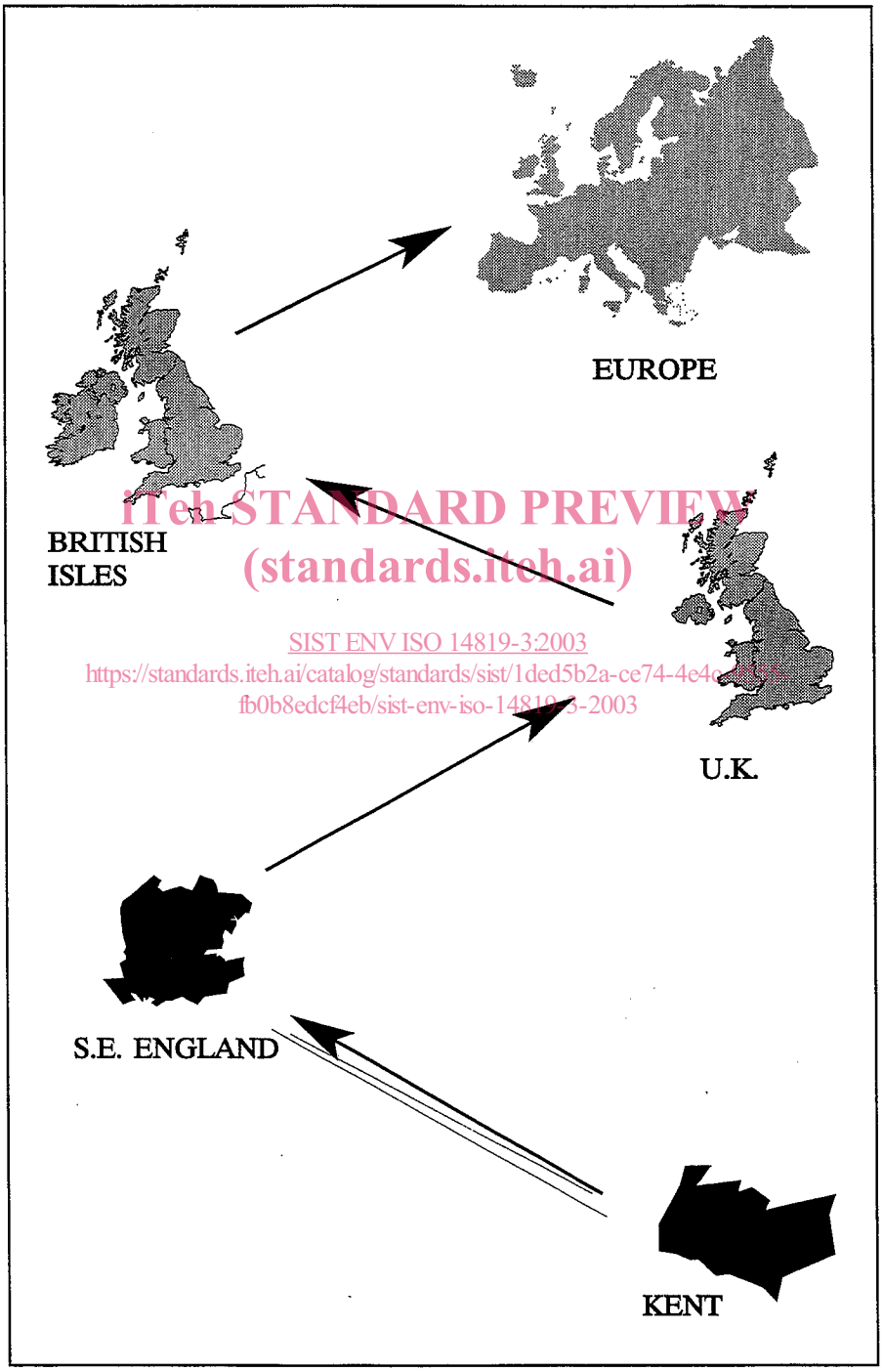




**Figure 4.1 - Upward Area Referencing**

Junction 25 on the M1 motorway in UK would have a **linear reference** to a motorway segment, e.g. Leicester - Sheffield. This segment could then be referenced up to the whole road (the M1 Motorway).

Hierarchical tables help to make location referencing simple and unambiguous. A major benefit of hierarchical tables is that they facilitate automated sorting and selection of information for users. However, both hierarchical and unstructured tables are currently used in ATT applications.

### 4.1.2 Offsets

Certain linear locations, and point locations, may point to previous and next locations of the same type. This is indicated by negative and positive offsets.

Example: Junction 25 on a motorway may be **offset** to Junction 26 in the positive direction, and to Junction 24 in the negative direction. A sign convention adopted at the time of coding locations specifies the **positive direction** of travel along each road (Figure 4.2).

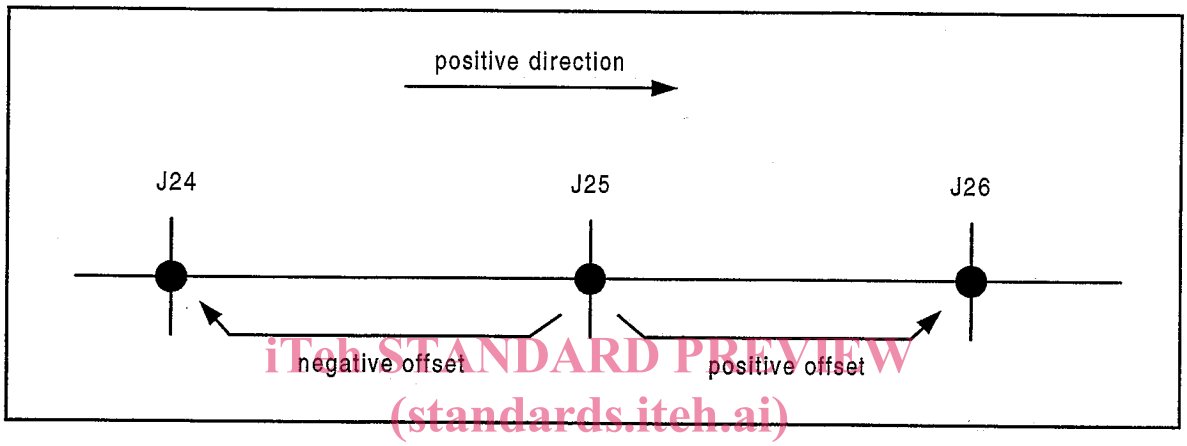




**Figure 4.2. - Offsets**



### 4.1.3 Location types

Location types and subtypes are required for language independence of the information given, and to tell the receiving system what data fields to expect.

At the highest level, locations fall into three categories:

1. area locations
2. linear locations
3. point locations

Within each category, location types are distinguished (in principle) whenever a location is functionally distinct in the way it must be handled by the message recipient. Therefore a set of predefined location types and subtypes is set out in Annex A.

Subtypes can be used to give further details of (for example) facilities available at a particular location, such as a service area. The current list, in Annex A, will be added to as further needs are agreed.

Official translations of the language-independent terms that describe location types and subtypes should be agreed on a national level.

### 4.1.4 Direction of the road

The predefined direction of the road (see section 4.1.2) is reflected in the positive and negative offsets in the location table and in the order of the names of the end points of a road or road segment (see table in 4.3.3).