



SLOVENSKI STANDARD SIST ENV 13777:2003

01-oktober-2003

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Road transport and traffic telematics - DATEX specifications for data exchange between traffic and travel information centres (version 1.2a)

Telematik für den Strassenverkehr und -Transport - DATEX Spezifikation für den Datenaustausch zwischen Verkehrs und Reiseinformationszentralen (Version 1.2a)

Télématique de la circulation et du transport routier - Spécifications DATEX pour l'échange des données entre les centres d'information routiere (version 1.2a)

Ta slovenski standard je istoveten z: **ENV 13777:2000**

ICS:

35.240.60	Uporabniške rešitve IT v transportu in trgovini	IT applications in transport and trade
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PRÉNORME EUROPÉENNE
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May 2000

ICS 35.240.60

English version

Road transport and traffic telematics - DATEX specifications for
data exchange between traffic and travel information centres
(version 1.2a)

Télématique de la circulation et du transport routier -
Spécifications DATEX pour l'échange des données entre
les centres d'information routière (version 1.2a)

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DATEX Spezifikation für den Datenaustausch zwischen
Verkehrs und Reiseinformationszentralen (Version 1.2a)

This European Prestandard (ENV) was approved by CEN on 5 May 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.

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

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

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1. Foreword [informative]

This European Prestandard has been prepared by Technical Committee CEN/TC 278 "Road transport and traffic telematics", the secretariat of which is held by NNL

This draft, produced from the DATEX-Net specifications is intended to serve the general needs and in particular the data exchange applications as specified by DATEX.

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.

2. Introduction [informative]

Information system applications are increasingly interconnected. A predominant trend towards standardisation has been a major theme throughout DRIVE and its successors, which is found in national projects as well.

In December 1996, DATEX has prepared both versions 3.0 of the dictionary and the first version, numbered 1.1, of the Specifications for Interoperability. This package has been put forward to the CEN TC 278 WG8 which in turn sent it in 1997 to stage 32 for informal vote.

The resulting comments have been processed by the last DATEX effort, funded by the EC, which has produced this Data Exchange Specifications for Interoperability version 1.2a proposed as a draft prENV to WG8 as well as version 3.1a of the Traffic and Travel Data Dictionary.

These Data Exchange Specifications for Interoperability aim to be used as a companion book of the DATEX-Net Data Dictionary also proposed for standardisation in data/information exchange.

For this reason this ENV contains common normative elements and specific informative parts.

3. Scope [normative]

This standard defines the methodology, functions and message structures for the exchange of data between traffic and travel information centres managed by different road operators.

The normative and informative clauses of the draft have been identified but due to the complexity of the document and cross-referencing the normative and information clauses have not been separated.

4. Normative References

This European Prestandard incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and publications are listed below. 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.

PrENV ISO 14819-3

Traffic and traveller Information (TTI) - TTI Messages
via traffic message coding - Part 3: Location

Referencing for ALERT C (under preparation, current document CEN/TC 278/N783, October 1997)

ENV 13106

DATEX Data Dictionary, version 3.1a

EN ISO 3166-1

Codes for the representation of names of countries and their subdivisions - Part 1: Country codes

ISO 4217

Codes for the representation of currencies and funds

The reference documents are still evolving and have various status. The following versions of this document will be updated to include the modifications of the above reference documents.

PrENV ISO 14819-3 indicates how the ALERT C RDS-TMC location referencing system should be used. This is of major importance to DATEX-Net. The draft European Prestandard will shortly be submitted to a Formal Vote. Keeping updated with these developments is important.

ENV 13106 is including the CEN/TC 278/WG 8 requirements as in the draft prENV/278/8/1/8 issued in October 1998.

CORD Deliverable D0004/Part 6 (see 16) provides methodology guidelines which were used when preparing the conceptual data models of the specifications. It may be used for an easier understanding of the specifications.

5. General architecture

5.1 Overview [informative]

DATEX-Net will allow different systems to exchange traffic data between different regions and countries. The peculiarity of DATEX-Net is that each system adopting this solution will be free to implement its own functionalities that may be different from region to region according to the local user requirements.

The DATEX-Net system comprises a certain number of Client and Supplier sub-systems. Each sub-system is composed of the following interfaces:

1. Application Interface;
2. Operator Interface;
3. Communication Interface;
4. Database Interface.

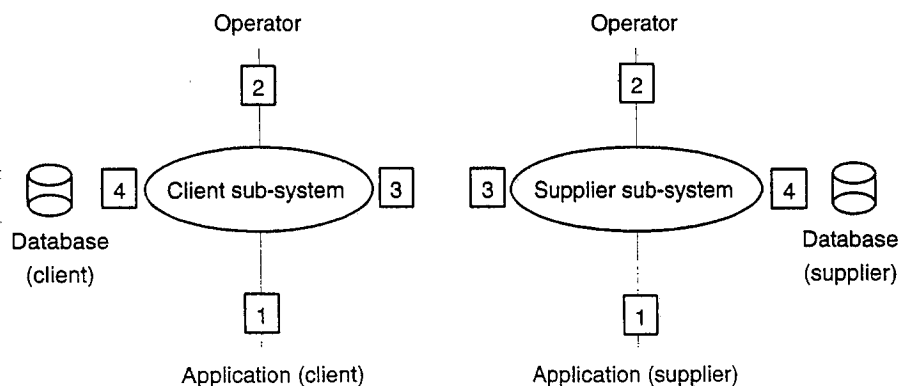
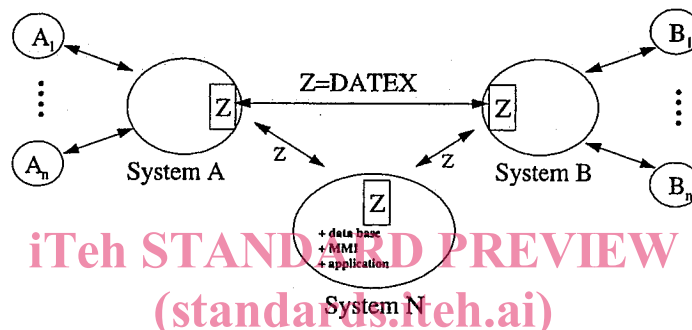


Figure 2 - Schematic of general system architecture

This document deals only with communication interface number 3. DATEX-Net specifies the data exchange across this interface, where the actual data are specified in the Data Dictionary version 3.1a.

DATEX-Net enables the communication between two or more traffic centres implementing a data exchange system, as depicted in figure 3. In order to achieve interoperability between centres, it is required to agree upon several options and choices which must be fixed in an Interchange Agreement. Clause 8.2 contains a checklist of items to be considered in such an agreement.

In the framework of the communication architecture proposed by DATEX, a traffic centre implementing the data exchange system "A", which includes DATEX-Net, will be able to be interoperable with any different DATEX-Net compatible system (like "B" and "N"); and at the same time it can exchange information with other traffic centres adopting the same protocol as "A".



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Figure 3 - General communication architecture

5.2 Levels of Operation [normative]

Each system including these specifications has to make its own choices and then has to follow the document according to what has been chosen. The DATEX Task Force has defined three system operating Levels. Implementors can decide at which Level they want to operate, being sure that following the rules explained in this document their choice of Level will be compatible with the others.

The identified Levels are:

- Level 1: delivery;
- Level 2: request / delivery;
- Level 3: order on catalogue / delivery.

There are interoperability solution given between Levels. They are specified in each of the Level descriptions (10, 11 and 12).

6. Situation data

6.1 Definitions [normative]

Traffic/Travel situation: a set of traffic/travel circumstances with a common cause (or causes) which apply to a common set of locations. Traffic/travel situations comprise event and status reports. A situation shall be composed of situation elements.

Situation Element: a traffic/travel circumstance related to one data object, one phrase, and one location.

In each DATEX-Net message, only one situation element is sent.

Each situation element is uniquely identified by the combination of message sender identification, situation reference and element reference. The situation reference is a unique reference to each sender. The element reference is a unique reference within each situation.

For specific definitions refer to ENV 13106 (see 4).

6.2 Situation data [normative]

One data model has been built with the following rules:

SITUATION: One situation shall have one or several situation elements.

SITUATION ELEMENT: One situation element shall have:

- one **DATA_OBJECT**,
- one **PHRASE**,
- one location:
 - If the situation is not related to a diversion, the situation element shall have one **ELT_PRIM_LOC** (element primary location) and may have one **ELT_SEC_LOC** (element secondary location),
 - If the situation is related to a diversion, the situation element shall have one **ELT_DEC_PT** (element decision point).

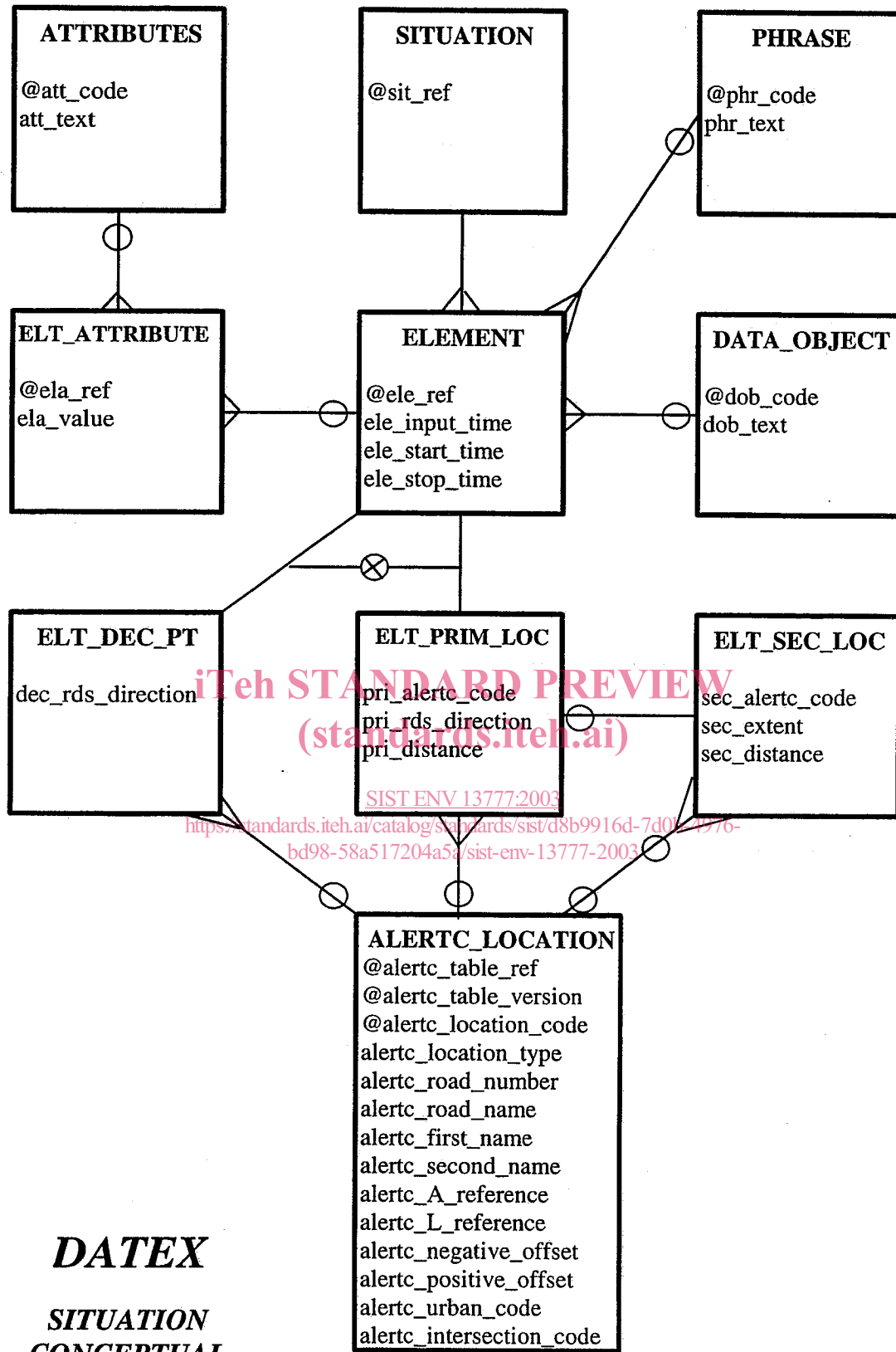
One situation element shall have one or several **ELT_ATTRIBUTES** (element attributes).

ELT_ATTRIBUTES (element attribute): The element attribute refers to a list of predefined attributes.

For entities, attributes and domains details, see ENV 13106 (see 4).

Note 1:	This data model has been built to solve interoperability problems (between EUROTRIANGLE, INTERCHANGE, STRADA).
Note 2:	This data model has led to the definition of the "DATEX-Net Situation Message", which is detailed in 6.4: "Situation Element message".
Note 3:	In this data model situation elements are updated as the situation evolves in time.
Note 4:	The updating results in a new version of the situation element which may either contain active information or be not active any more.
Note 5:	At a given time a situation is described by collecting information from the last version of all active situation elements related to the situation.

The following diagram represents the DATEX Situation Conceptual Data Model. It has been used the Entity-Relationship method. The Entity-Relationship approach is described in Annex A of document CORD Deliverable D004/Part 6 (see 4).



DATEX
SITUATION
CONCEPTUAL
DATA
MODEL

Figure 4 - Situation conceptual data model

6.3 Location referencing methods [normative]

Different ALERT C location referencing methods shall be used. These methods are described in prENV ISO 14819-3 (see 4).

6.3.1 Pre-defined primary location + extent

This method refers to method 1.2.1 of prENV ISO 14819-3 (see 4). This method uses a predefined primary location which shall be one ALERT C location code (LCO). Optionally an extent (LEX) may be used to indicate the extent of the event and show the secondary location.

This is coded as DATEX-Net method 1.

In this method, ALERT C direction shall be used to indicate the direction(s) affected. ALERT C direction shall be positive if the extent is negative and, conversly, negative if the extent is positive unless both directions are affected or the direction is unknown.

Further details of usage of the UN EDIFACT Location Segment (LOC) are given in 13.3.

6.3.2 Pre-defined primary and secondary locations

This method refers to method 1.2.2 of prENV ISO 14819-3 (see 4). This method uses a predefined primary location and a predefined secondary location which shall each be one ALERT C location code (LCO).

This is coded as DATEX-Net method 2.

In this method, ALERT C direction shall be used to indicate the direction(s) affected.

Further details of usage of the UN EDIFACT Location Segment (LOC) are given in 13.3.

6.3.3 Primary and secondary locations using pre-defined locations + extent + distances

This method refers to method 1.2.5 of prENV ISO 14819-3 (see 4). This method uses a predefined primary location which shall be one ALERT C location code (LCO). Optionally an extent (LEX) may be used to indicate the extent of the event and show the secondary location. Additionally and optionally offset distances from the primary and the inferred secondary predefined locations may be used to indicate to a higher degree of accuracy the position of the primary and secondary position of the event. The offsets distance from the primary and the inferred secondary predefined locations shall only indicate distances toward the inferred secondary and primary predefined locations respectively.

If no extent is given, such as in the case of a point location, the ALERT C direction shall indicate the direction in which to apply an offset distance from the predefined primary location. If no extent is given no offset from the secondary location shall be given.

This is coded as DATEX-Net method 3.

In this method, ALERT C direction shall be used to indicate the direction(s) affected. ALERT C direction shall be positive if the extent is negative and, conversly, negative if the extent is positive unless both directions are affected or the direction is unknown.

Further details of usage of the UN EDIFACT Location Segment (LOC) are given in 13.3.

6.3.4 Primary and secondary locations using pre-defined locations + distances

This method refers to method 1.2.6 of prENV ISO 14819-3 (see 4). The method uses a predefined primary location and a predefined secondary location which shall each be one ALERT C location code (LCO). Optionally offset distances from the primary and secondary