

STN	Inteligentné dopravné systémy Špecifikácie výmeny dát v DATEX II pre riadenie dopravy a dopravné informácie Časť 3: Zverejňovanie situácie	STN EN 16157-3
		01 8594

Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 3: Situation Publication

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

Táto norma bola označená vo Vestníku ÚNMS SR č. 05/19

Obsahuje: EN 16157-3:2018

Oznámením tejto normy sa ruší

STN P CEN/TS 16157-3 (01 8594) z apríla 2012

128562

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 16157-3

December 2018

ICS 35.240.60

Supersedes CEN/TS 16157-3:2011

English Version

**Intelligent transport systems - DATEX II data exchange
specifications for traffic management and information -
Part 3: Situation Publication**

Systèmes de transport intelligents - Spécifications
DATEX II d'échange de données pour la gestion du
trafic et l'information routière - Partie 3 : Publication
de situations

Intelligente Verkehrssysteme - DATEX II
Datenaustauschspezifikation für Verkehrsmanagement
und Verkehrsinformationen - Teil 3: Publikation von
Verkehrssituationen

This European Standard was approved by CEN on 3 September 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

	Page
European foreword	5
Introduction	6
1 Scope.....	7
2 Normative references.....	8
3 Terms and definitions	8
4 Symbols and abbreviations	9
5 Conformance.....	9
6 UML notation	9
7 The Situation model.....	10
7.1 Overview of Situation	10
7.2 Overview of SituationPublication	10
7.3 The <>D2Package >>SituationPublication.....	11
7.3.1 Overview of the <>D2Package >>SituationPublication	11
7.3.2 Semantics of the <>D2Package>>SituationPublication.....	11
7.4 The SituationRecord package.....	12
7.4.1 Overview of the SituationRecord package.....	12
7.4.2 Semantics of the SituationRecord package.....	14
7.5 The Impact package	16
7.5.1 Overview of the Impact package	16
7.5.2 Semantics of the Impact package	17
7.6 The Validity package — Overview of Validity package	17
7.7 The ServiceInformation package	18
7.7.1 Overview of the ServiceInformation package	18
7.7.2 Semantics of the ServiceInformation package	18
7.8 The TrafficElement package	19
7.8.1 Overview of the TrafficElement package	19
7.8.2 Semantics of the TrafficElement package	20
7.9 The Conditions package.....	21
7.9.1 Overview of the Conditions package.....	21
7.9.2 Semantics of the Conditions package.....	22
7.10 The WeatherData package — Overview of the WeatherData package.....	23
7.11 The RoadSurfaceConditionMeasurements package — Overview of the RoadSurfaceConditionMeasurements package	23
7.12 The Accident package.....	24
7.12.1 Overview of the Accident package	24
7.12.2 Semantics of the Accident package	25
7.13 The Obstruction package	25
7.13.1 Overview of the Obstruction package	25
7.13.2 Semantics of the Obstruction package	26
7.14 The Activity package.....	27
7.14.1 Overview of the Activity package	27
7.14.2 Semantics of the Activity package	28
7.15 The OperatorAction package	29

7.15.1 Overview of the OperatorAction package	29
7.15.2 Semantics of the OperatorAction package.....	29
7.16 The Roadworks package	30
7.16.1 Overview of the Roadworks package.....	30
7.16.2 Semantics of the Roadworks package	31
7.17 The NetworkManagement package.....	31
7.17.1 Overview of the NetworkManagement package.....	31
7.17.2 Semantics of the NetworkManagement package.....	32
Annex A (normative) Data Dictionary	36
A.1 Overview	36
A.2 Data Dictionary for Situation.....	37
A.2.1 Accident package	37
A.2.2 Activity package	38
A.2.3 Classes package	40
A.2.4 Conditions package	48
A.2.5 Impact package.....	51
A.2.6 NetworkManagement package	53
A.2.7 Obstruction package.....	58
A.2.8 OperatorAction package.....	61
A.2.9 Roadworks package	62
A.2.10 ServiceInformation package	65
A.2.11 SituationPublication package.....	67
A.2.12 TrafficElement package.....	69
A.3 Data Dictionary of <<D2Datatype>> for Situation.....	71
A.4 Data Dictionary of <<D2Enumeration>> for Situation	71
A.4.1 General.....	71
A.4.2 The <<D2Enumeration>> AbnormalTrafficTypeEnum	71
A.4.3 The <<D2Enumeration>> AccidentCauseEnum	72
A.4.4 The <<D2Enumeration>> AccidentTypeEnum	73
A.4.5 The <<D2Enumeration>> AnimalPresenceTypeEnum	74
A.4.6 The <<D2Enumeration>> AuthorityOperationTypeEnum	74
A.4.7 The <<D2Enumeration>> CauseTypeEnum	76
A.4.8 The <<D2Enumeration>> CollisionTypeEnum	79
A.4.9 The <<D2Enumeration>> CommentTypeEnum	80
A.4.10 The <<D2Enumeration>> ComplianceOptionEnum	80
A.4.11 The <<D2Enumeration>> ConfidentialityValueEnum	81
A.4.12 The <<D2Enumeration>> ConstructionWorkTypeEnum	81
A.4.13 The <<D2Enumeration>> DelayBandEnum	82
A.4.14 The <<D2Enumeration>> DelaysTypeEnum	82
A.4.15 The <<D2Enumeration>> DirectionEnum	83
A.4.16 The <<D2Enumeration>> DisturbanceActivityTypeEnum	84
A.4.17 The <<D2Enumeration>> DrivingConditionTypeEnum	86
A.4.18 The <<D2Enumeration>> EnvironmentalObstructionTypeEnum	87
A.4.19 The <<D2Enumeration>> EquipmentOrSystemFaultTypeEnum	88
A.4.20 The <<D2Enumeration>> EquipmentOrSystemTypeEnum	89
A.4.21 The <<D2Enumeration>> GeneralInstructionToRoadUsersTypeEnum	90
A.4.22 The <<D2Enumeration>> GeneralNetworkManagementTypeEnum	92
A.4.23 The <<D2Enumeration>> InfrastructureDamageTypeEnum	94
A.4.24 The <<D2Enumeration>> InjuryStatusTypeEnum	95
A.4.25 The <<D2Enumeration>> InvolvementRolesEnum	95
A.4.26 The <<D2Enumeration>> MaintenanceVehicleActionsEnum	96
A.4.27 The <<D2Enumeration>> MobilityTypeEnum	96

EN 16157-3:2018 (E)

A.4.28 The <<D2Enumeration>> NonWeatherRelatedRoadConditionTypeEnum	97
A.4.29 The <<D2Enumeration>> ObstructionTypeEnum	98
A.4.30 The <<D2Enumeration>> OperatorActionOriginEnum	100
A.4.31 The <<D2Enumeration>> OperatorActionStatusEnum	101
A.4.32 The <<D2Enumeration>> PersonCategoryEnum	102
A.4.33 The <<D2Enumeration>> PlacesEnum	103
A.4.34 The <<D2Enumeration>> PoorEnvironmentTypeEnum	104
A.4.35 The <<D2Enumeration>> ProbabilityOfOccurrenceEnum	107
A.4.36 The <<D2Enumeration>> PublicEventTypeEnum	108
A.4.37 The <<D2Enumeration>> RelativeTrafficFlowEnum	111
A.4.38 The <<D2Enumeration>> ReroutingManagementTypeEnum	112
A.4.39 The <<D2Enumeration>> RoadMaintenanceTypeEnum	113
A.4.40 The <<D2Enumeration>> RoadOperatorServiceDisruptionTypeEnum	114
A.4.41 The <<D2Enumeration>> RoadOrCarriagewayOrLaneManagementTypeEnum	115
A.4.42 The <<D2Enumeration>> RoadsideAssistanceTypeEnum	117
A.4.43 The <<D2Enumeration>> RoadworksDurationEnum	118
A.4.44 The <<D2Enumeration>> RoadworksScaleEnum	118
A.4.45 The <<D2Enumeration>> ServiceDisruptionTypeEnum	119
A.4.46 The <<D2Enumeration>> SeverityEnum	120
A.4.47 The <<D2Enumeration>> SpeedManagementTypeEnum	121
A.4.48 The <<D2Enumeration>> SubjectTypeOfWorksEnum	121
A.4.49 The <<D2Enumeration>> TrafficConstrictionTypeEnum	123
A.4.50 The <<D2Enumeration>> TrafficFlowCharacteristicsEnum	124
A.4.51 The <<D2Enumeration>> TrafficTrendTypeEnum	124
A.4.52 The <<D2Enumeration>> TrafficTypeEnum	125
A.4.53 The <<D2Enumeration>> TransitServiceInformationEnum	126
A.4.54 The <<D2Enumeration>> TransitServiceTypeEnum	127
A.4.55 The <<D2Enumeration>> VehicleObstructionTypeEnum	128
A.4.56 The <<D2Enumeration>> VehicleProblemCauseEnum	130
A.4.57 The <<D2Enumeration>> VehicleTypeEnum	131
A.4.58 The <<D2Enumeration>> WeatherRelatedRoadConditionTypeEnum	134
A.4.59 The <<D2Enumeration>> WinterEquipmentManagementTypeEnum	136
Annex B (normative) Referenced XML schema for Situation.....	137
B.1 Overview	137
B.2 XML Schema	137
Bibliography.....	161

European foreword

This document (EN 16157-3:2018) has been prepared by Technical Committee CEN/TC 278 "Intelligent transport systems", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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

This document supersedes CEN/TS 16157-3:2011.

The major differences introduced in this part are the following:

- remodelling of the cause of traffic situations, better fitting the operational use;
- enabling the mark up of Safety Related traffic information according to Commission Delegated Regulation (EU) No 886/2013;
- improving consistency of accidents and vehicle obstructions;
- adding several requested enumeration literals to support operational requirements;
- correcting of different bugs.

EN 16157-3 is the third part of a multi-part standard under the general title *Intelligent transport systems — DATEX II data exchange specifications for traffic management and information*.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 16157-3:2018 (E)

Introduction

This European Standard defines a common set of data exchange specifications to support the vision of a seamless interoperable exchange of traffic and travel information across boundaries, including national, urban, interurban, road administrations, infrastructure providers and service providers. Standardization in this context is a vital constituent to ensure interoperability, reduction of risk, reduction of the cost base, promotion of open marketplaces and many social, economic and community benefits to be gained from more informed travellers, network managers and transport operators.

Delivering European Transport Policy in line with the White Paper issued by the European Commission requires co-ordination of traffic management and development of seamless pan European services. With the aim to support sustainable mobility in Europe, the European Commission has been supporting the development of information exchange mainly between the actors of the road traffic management domain for a number of years. In the road sector, DATEX II has been long in fruition, with the European Commission being fundamental to its development through an initial contract and subsequent co-funding through the Euro-Regional projects. With this standardization of DATEX II, there is a real basis for common exchange between the actors of the traffic and travel information sector.

This European Standard includes the framework and context for exchanges, the modelling approach, data content, data structure and relationships.

This European Standard supports a methodology that is extensible.

This part of EN 16157 deals with the publication of situation information. It specifies the structures and definitions of information that may be exchanged to convey situation information relating to a road network, both from a road network manager and road user point of view. Traffic and travel information situations cover:

- road traffic event information – planned and unplanned occurrences both on the road network and in the surrounding environment, including weather and environmental information,
- operator initiated actions,
- road traffic management information and instructions relating to use of the road network.

1 Scope

This document specifies and defines component facets supporting the exchange and shared use of data and information in the field of traffic and travel.

The component facets include the framework and context for exchanges, the modelling approach, data content, data structure and relationships.

This document is applicable to:

- traffic and travel information which is of relevance to road networks (non-urban and urban),
- public transport information that is of direct relevance to the use of a road network (e.g. road link via train or ferry service),
- traffic and travel information in the case of Cooperative intelligent transport systems (C-ITS).

This document establishes specifications for data exchange between any two instances of the following actors:

- Traffic Information Centres (TICs),
- Traffic Control Centres (TCCs),
- Service Providers (SPs),

Use of this document can be applicable for use by other actors.

This document covers, at least, the following types of informational content:

- road traffic event information – planned and unplanned occurrences both on the road network and in the surrounding environment,
- operator-initiated actions,
- road traffic measurement data, status data, and travel time data,
- travel information relevant to road users, including weather and environmental information,
- road traffic management information and instructions relating to use of the road network.

This document specifies the informational structures, relationships, roles, attributes and associated data types required for publishing situation traffic and travel information within the DATEX II framework. This is specified as a DATEX II Situation Publication sub-model which is part of the DATEX II platform independent model, but this part excludes those elements that relate to:

- location information which are specified in FprEN 16157-2;
- common information elements, which are specified in EN 16157-7.

EN 16157-3:2018 (E)**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 16157-1:2018, *Intelligent transport systems — DATEX II data exchange specifications for traffic management and information — Part 1: Context and framework*

FPrEN 16157-2:2018, *Intelligent transport systems — DATEX II data exchange specifications for traffic management and information — Part 2: Location referencing*

EN 16157-7, *Intelligent transport systems — DATEX II data exchange specifications for traffic management and information — Part 7: Common data elements*

ISO/IEC 19505-1, *Information technology — Object Management Group Unified Modeling Language (OMG UML) — Part 1: Infrastructure*

koniec náhľadu – text ďalej pokračuje v platnej verzii STN