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kSIST-TS FprCEN/TS 16157-8:2024

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Inteligentni transportni sistemi - Specifikacije za izmenjavo podatkov DATEX II pri upravljanju prometa in informiranju - 8. del: Publikacije in razširitve za upravljanje prometa, namenjene mestnemu okolju

Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 8: Traffic management publications and extensions dedicated to the urban environment

Intelligente Verkehrssysteme - DATEX-II-Datenaustauschspezifikationen für Verkehrsmanagement und Verkehrsinformationen - Teil 8: Publikationen von Verkehrsmanagementmaßnahmen und kommunale Ergänzungen

Systèmes de transport intelligents - DATEX II Spécification des échanges de données pour la gestion du trafic et l'information routières - Partie 8: Publications et extensions pour la gestion du trafic dédiées à l'environnement urbain

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Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 8: Traffic management publications and extensions dedicated to the urban environment

Systèmes de transport intelligents - DATEX II
Spécification des échanges de données pour la gestion
du trafic et l'information routières - Partie 8:
Publications et extensions pour la gestion du trafic
dédiées à l'environnement urbain

Intelligente Verkehrssysteme - DATEX-II-
Datenaustauschspezifikationen für
Verkehrsmanagement und Verkehrsinformationen -
Teil 8: Publikationen von
Verkehrsmanagementmaßnahmen und kommunale
Ergänzungen

This draft Technical Specification is submitted to CEN members for Vote. It has been drawn up by the Technical Committee CEN/TC 278.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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FprCEN/TS 16157-8:2024 (E)

European foreword

This document (FprCEN/TS 16157-8:2024) has been prepared by Technical Committee CEN/TC 278 “Intelligent transport systems”, the secretariat of which is held by NEN.

This document is currently submitted to the Vote on TS.

The CEN 16157 series consists of several parts under the general title “Intelligent transport systems — DATEX II data exchange specifications for traffic management and information”.

This document will supersede CEN/TS 16157-8:2020.

FprCEN/TS 16157-8:2024 includes the following significant technical changes with respect to CEN/TS 16157-8:2020:

- The ReroutingManagementEnhanced publication has been upgraded to improve fit with other parts in the CEN 16157 series
- The TrafficManagementPlan publication has been revised and enhanced to make use of predefined plans.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

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Introduction

This document defines a common set of data exchange specifications to support the vision of a seamless interoperable exchange of road traffic and travel information across boundaries, including national, urban, interurban, road administrations, infrastructure providers and service providers. Standardisation 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.

Deploying intelligent transport systems in line with European Sustainable and Smart Mobility Strategy as issued by the European Commission requires co-ordination of traffic management operation and development of seamless pan-European information services. These jointly aim at contributing to the transformation of the European transport system for the objectives of efficient, safe, sustainable, smart and resilient mobility.

In this context the European Commission has been supporting the development of information exchange between the actors of road traffic management and related services for several 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 of the further evolution of the standard and user support ecosystem. With this standardisation of DATEX II, there is a real basis for common exchange between the actors of the traffic and travel information sector both in the collaboration between traffic management organisations and their systems, as well as in coherent information provision to service providers. DATEX II supports the requirements of the stakeholder organisations involved in the road traffic and travel domain in compliance with the EU policy and legal frameworks aimed at the sector.

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.

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1 Scope

The CEN 16157 multipart standard specifies and defines component facets supporting the shared use of data and information in the field of traffic and travel. The component facets include the modelling approach, the data content, the data structure and relationships and the communications specification.

This document, specifies additional data model structures that are applicable for traffic management applications in the urban environment. This document addresses data concepts to support the exchange of traffic management plans, rerouting and extensions of the existing DATEX II core model to better support application to the urban environment.

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*

EN 16157-2:2019, *Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 2: Location referencing*

EN 16157-3:2019, *Intelligent transport systems — DATEX II data exchange specifications for traffic management and information — Part 3: Situation Publication*

EN 16157-7:2018, *Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 7: Common data elements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in the normative references and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

traffic management plan

coordinated set of actions implemented by a number of actors such as traffic control centres, service providers, police, authorities, or road managers aiming to minimise or prevent traffic disruption and ensure efficient operation of the road network

3.2

scenario

predefined kind of road network situation with potential impact that would lead road operators to initiate traffic management

Note 1 to entry: It identifies a subset of possible traffic situations. It may be arbitrarily specific yet not fixed to a specific instance in time

3.3**strategy**

coherent set of one or more traffic management measures that aims to achieve some overall effect in response to a traffic management scenario

EXAMPLE limit through traffic in an area; to favour a transport mode or a preferred route.

3.4**measure**

compound ITS service or set of one or more actions that can be performed by a road operator or other ITS service provider, and which work together to achieve an overall effect on traffic

EXAMPLE closures with alternative itinerary, restriction for HGV, access control etc.

Note 1 to entry: It can be an isolated action, a set of actions on the same site (road section) or a set of spatially spread actions that are executed jointly. This also includes general IT actions such as information delivery on specific delivery channels. When the solution (= measure) is not predefined one can define a procedure to elaborate this solution.

3.5**action**

single atomic traffic management action or ITS service that can be performed by a road operator or other ITS service provider

Note 1 to entry: It may be preventive, curative or planned, e.g.: to deliver information to road users; to spread salt on a road in case of danger of black ice; to clear a road section of obstacles.

3.6**service request**

information which is exchanged among actors for workflow coordination in activating and implementing traffic management plans, such as an agreement on proposed strategies or measures, agreed measures/strategies implementation, termination and cancellation request of agreed measures and strategies

4 Symbols and abbreviations

UUID	Universally Unique Identifier
IT	Information technology
ITS	Intelligent Transport Systems
PT	Public transport
TMP	Traffic Management Plan
TRO	Traffic Regulation Order
UML	Unified Modelling Language
VMS	Variable Message Sign

FprCEN/TS 16157-8:2024 (E)

5 UML notation

This document includes diagrams using the UML notation as defined in ISO / IEC 19505-1 [1].

NOTE Some introductory guides to UML 2 are provided in the Bibliography of EN 16157-1:2018

6 «D2Namespace» UrbanExtensions

6.1 Overview

This clause specifies an additional namespace “UrbanExtensions” which provides several extensions to different elements of the DATEX II data model defined in EN 16157-2, EN 16157-3, and EN 16157-7 focussed on the urban aspects of the data model. These extensions shall follow the Level-B modelling rules defined in EN 16157-1:2018.

The «D2Namespace» UrbanExtensions shall have the namespace-prefix “ubx”.

Figure 1 illustrates the “UrbanExtensions” namespace and its classes. This namespace shall be located inside the “Extension” namespace defined in EN 16157-7:2018.

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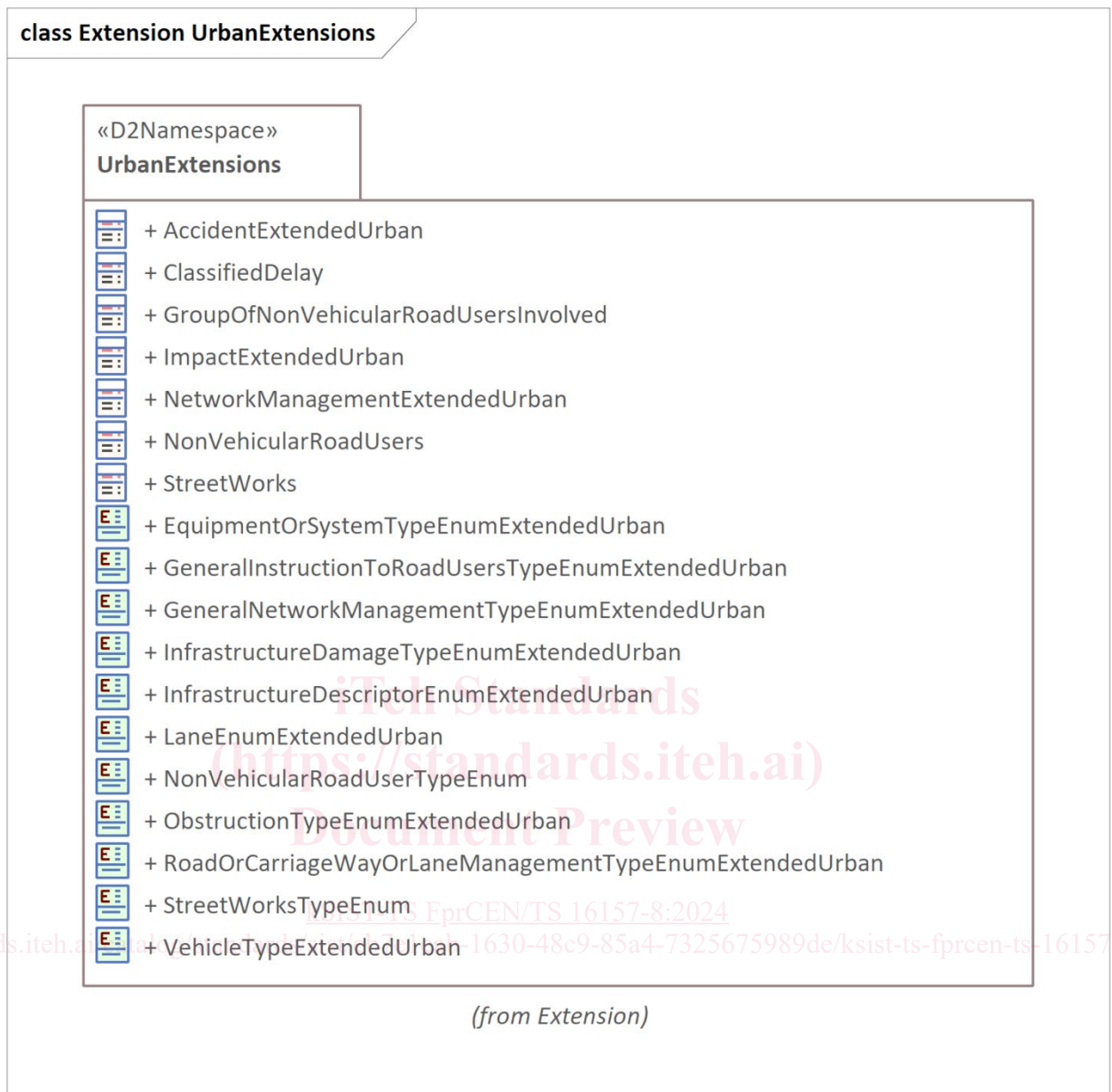


Figure 1 — The "UrbanExtensions" namespace

6.2 ClassifiedDelay Class

The "ClassifiedDelay" class (see Figure 2) may provide an alternative to the "Delay" class specified in EN 16157-3:2018. In contrast to this class, the "ClassifiedDelay" class shall have unbounded multiplicity and an aggregation to the "VehicleCharacteristics" class to specify delays classified for specific types of vehicles.

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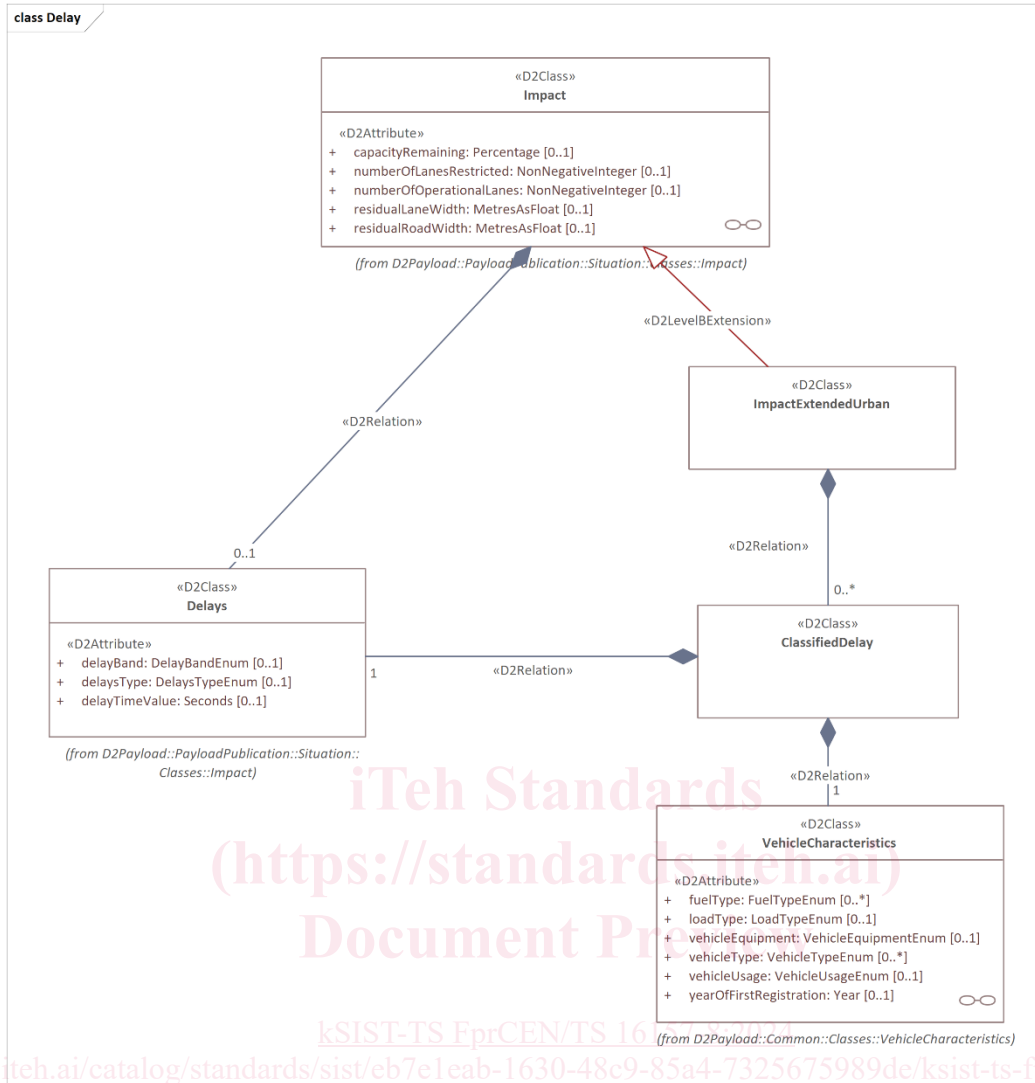


Figure 1 — Extension to Delay

6.3 EquipmentOrSystemType Class

The “EquipmentOrSystemTypeEnum” enumeration defined in EN 16157-3:2018 shall be extended by the enumeration on access control systems, parking sensors and traffic sensors (see Figure 3).

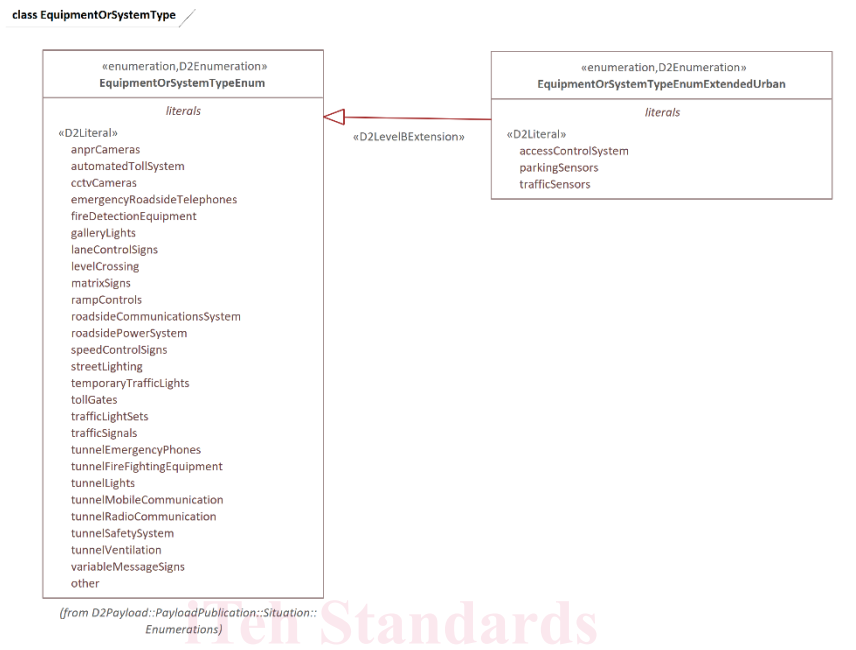


Figure 2 — Extension to equipment or system type

6.4 GeneralInstructionsToRoadUsers Class

The “GeneralInstructionsToRoadUsersTypeEnum” enumeration defined in EN 16157-3:2018 shall be extended by two further enumerations with instructions for cyclists and pedestrians (see Figure 4).

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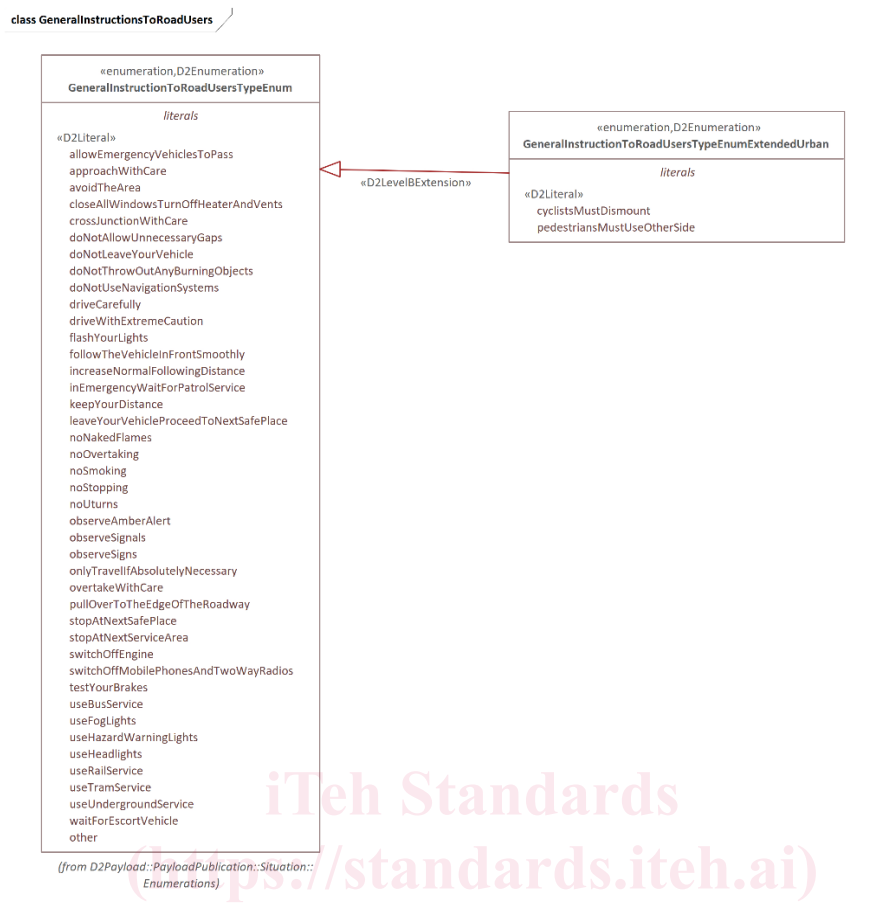


Figure 3 — Extension to General instructions to road users

6.5 GeneralNetworkManagementType Class

The “GeneralNetworkManagementTypeEnum” enumeration defined in EN 16157-3:2018 shall be extended by three further enumerations literals for general management concerning restricted areas and tolling (see Figure 5).

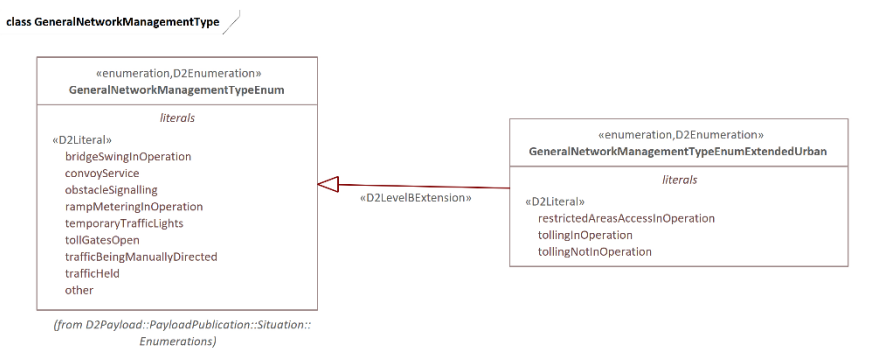


Figure 4 — Extension to general network management