PD CEN/TS 16157-5:2014

BSI Standards Publication

Intelligent transport systems — DATEX II data exchange specifications for traffic management and information

Part 5: Measured and elaborated data publications

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee EPL/278, Intelligent transport systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 5: Measured and elaborated data publications

Systèmes de transport intelligents - Spécifications Datex II d'échange de données pour la gestion du trafic et l'information routière - Partie 5 : Publication de données mesurées et de données calculées

Intelligente Transportsysteme - DATEX II Datenaustausch Spezifikationen für Verkehrsmanagement und Informationen - Teil 5: Gemessene und ausgearbeitete Datenveröffentlichungen

This Technical Specification (CEN/TS) was approved by CEN on 27 January 2014 for provisional application.

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Foreword

This document (CEN/TS 16157-5:2014) has been prepared by Technical Committee CEN/TC 278 “Intelligent transport systems”, the secretariat of which is held by NEN.

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

The CEN/TS 16157 series consists of the following parts, under the general title “Intelligent transport systems — DATEX II data exchange specifications for traffic management and information”:

- Part 1: Context and framework

- Part 2: Location referencing

- Part 3: Situation publication

- Part 4: VMS publication

- Part 5: Measured and Elaborated Data Publications

Other parts may be developed in the future.

As a user of the standard, attention is drawn to the resources of www.datex2.eu < http://www.datex2.eu/ > . This website contains related software tools and software resources that aid the implementation of the CEN/TS 16157 series DATEX II.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This Technical Specification 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 that interoperability, reduction of risk, reduction of the cost base and promotion of open marketplace objectives are achieved that will lead to many social, economic and community benefits as a result of 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 the 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 Technical Specification includes the framework and context for exchanges, the modelling approach, data content, data structure and relationships and communications specification.

This Technical Specification supports a methodology that is extensible.

The fifth part of this Technical Specification deals with the one or more publication sub-model(s) within the DATEX II model that support the exchange of measured and elaborated information. These publications are intended to support the exchange of information from the organization having the measures and creating elaborated data to other organizations providing ITS services or onward information exchange. It also includes the exchange of static information about measurement sites.

The European Committee for Standardization (CEN) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning procedures, methods and/or formats given in this document.

CEN takes no position concerning the evidence, validity and scope of patent rights.

1 Scope

This Technical Specification (CEN/TS 16157-5) 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, the data content, the data structure and relationships and the communications specification.

This Technical Specification 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).

This Technical Specification 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 Technical Specification may be applicable for use by other actors.

This Technical Specification includes the following types of information 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 part of the CEN/TS 16157 series specifies the informational structures, relationships, roles, attributes and associated data types required for publishing measured and elaborated data within the Datex II framework. This is specified in three submodels, a DATEX II Measurement Site Table Publication submodel, a DATEX II Measured Data Publication submodel and a DATEX II Elaborated Data Publication submodel.

1.1 Conformance

The platform independent sub-models defined by this Part specify a DATEX II Measurement Site Table Publication, a DATEX II Measured Data Publication and a DATEX II Elaborated Data Publication except for those elements that relate to location information which are specified in CEN/TS 16157-2. The DATEX II platform independent data model these three publication sub-models are a part of which, corresponds to the Level A model as defined in CEN/TS 16157-1.

Conformance with this Part shall require platform independent models from which platform specific models are generated to comply with the UML modelling rules defined in CEN/TS 16157-1 and with the following requirements of the sub-models which are expressed in this Part:

— comply with all stipulated minimum and maximum multiplicity requirements for UML elements and relationships;

— comply with all definitions, types and ordering;

— employ optional elements as specified;

— comply with all expressed constraints.

It should be noted that conformance of a publication service with all the structural requirements stated above does not necessarily ensure that the informational content of that service will be semantically comprehensible.

2 Normative references

The following referenced documents are indispensable for the application 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.

CEN/TS 16157-1:2011, *Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 1: Context and framework*

CEN/TS 16157-2:2011, *Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 2: Location referencing*

CEN/TS 16157-3:2011, *Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 3: Situation Publication*

ISO/IEC 19501:2005, *Information technology — Open Distributed Processing — Unified Modeling Language (UML) Version 1.4.2*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in CEN/TS 16157-1, CEN/TS 16157-2, CEN/TS 16157-3 and in the following list shall apply.

3.1
elaborated data
data which is derived/computed from one or more measurements over a period of time

Note 1 to entry: It may be a current value or a forecast value predicted from historical measurements.

3.2
measured data
quantitative data measured against a quantified scale (possibly using standard units of measure)

Note 1 to entry: In comparison to Elaborated Data, measured data can be considered to represent presentation of more directly observed measurements

3.3
measurement
collection of quantitative data

Note 1 to entry: A measurement is made by comparing a quantity with a standard unit. Since this comparison cannot be perfect, measurements inherently include error.

3.4
measurement site
location from where a stream of measured data may be derived

Note 1 to entry: It can be a point, a linear road section or an area. Linear sections may even be specified as itineraries or predefined location sets, e.g. for travel time routes which comprise one or more different roads.

3.5
Site Measurements
A measurement data set derived from a specific measurement site

4 Symbols and abbreviated terms

For the purposes of this document, the abbreviation of terms given in CEN/TS 16157-1, CEN/TS 16157-2, CEN/TS 16157-3 and in the following list shall apply.

PCU Passenger Car Unit

5 UML notation

The UML notation used in these Technical Specifications shall be as described in ISO/IEC 19501. A short summary explaining the notation used in this part of the CEN/TS 16157 series is provided in Annex A of CEN/TS 16157-1.

6 The Measurement Site Table Publication model

6.1 Overview of the Measurement Site Table Publication model

The Measurement Site Table Publication model comprises a top-level package, “MeasurementSiteTablePublication” which utilizes some classes from the “ReusableClasses” package and the “GroupOfLocations” package. This package is one of a number which are immediately subordinate to the “PayloadPublication” package and hence forms the top of the hierarchy in the Measurement Site Table Publication sub-model.

The “MeasurementSiteTablePublication” package models Measurement Site Tables comprising a number of sets of data, each describing the location from where a stream of measured data may be derived. Each location is known as a “measurement site” which can be a point, a linear road section or an area.

Each “MeasurementSiteTablePublication” instance shall contain one or more instances of a “MeasurementSiteTable”, each table containing a number of “MeasurementSiteRecords”. Each “MeasurementSiteRecord” shall be described by a location and specific characteristics.

Each “MeasurementSite” instance contains zero or more “Measurements” that have different characteristics like e.g. traffic flow, speed,…

6.2 The “MeasurementSiteTablePublication” Package

6.2.1 Overview of the “MeasurementSiteTablePublication” Package

The “MeasurementSiteTablePublication” package shall comprise a sub-model for defining publishable measurement site tables which comprise records defining the measurement sites (see Figure 1). Each publication may contain one or more tables, allowing logical partitioning of measurement sites information as deemed most appropriate for recipients of measured data information by the supplier (e.g. by road designation or other geographic criteria or by type of measurement site, etc.)

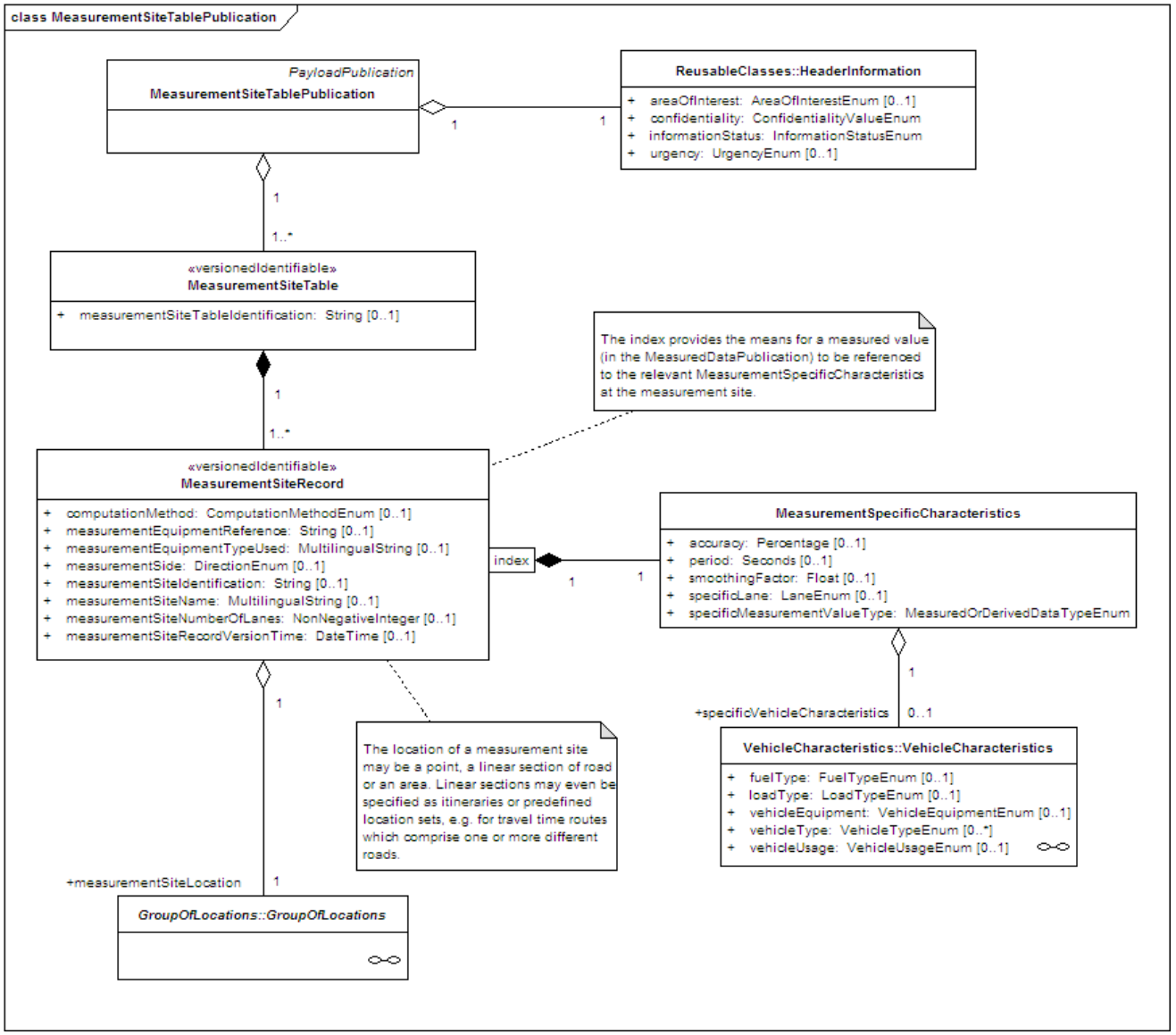

Figure 1 — The "MeasurementSiteTablePublication" package class model

6.2.2 Semantics of the “MeasurementSiteTablePublication” Package

6.2.2.1 “MeasurementSiteTablePublication” package semantics - general

The “MeasurementSiteTablePublication” class is a specific realizable case of a “PayloadPublication”. Each “MeasurementSiteTablePublication” may contain any number of separate measurement site tables.

6.2.2.2 “MeasurementSiteTablePublication” Class

The “MeasurementSiteTablePublication” class is the base class for containing the published measurement site tables.

6.2.2.3 “HeaderInformation” Class

Each instance of a “MeasurementSiteTablePublication” shall have associated metadata contained in an instance of the “HeaderInformation” class which allows the supplier of the “MeasurementSiteTablePublication” to specify how the recipient should treat the information contained in it. This class is already defined in CEN/TS 16157-3.

6.2.2.4 “MeasurementSiteTable” Class

An identifiable versioned instance of the “MeasurementSiteTable” class shall contain any logical collection of “MeasurementSiteRecords”.

6.2.2.5 “MeasurementSiteRecord” Class

An identifiable versioned instance of the “MeasurementSiteRecord” class shall contain the characteristics information relating to a specific Measurement Site.

Each record shall be located by a “GroupOfLocations” class. This class belongs to the “GroupOfLocations” package already described in CEN/TS 16157-2.

Each record shall have one indexed “MeasurementSpecificCharacteristics” sub-record for containing the characteristics of each individual measure. The index provides the means for a measured value (in the MeasuredDataPublication) to be referenced to the relevant MeasurementSpecificCharacteristics at the measurement site. Each measure can concern specific vehicles which are described by a “VehicleCharacteristics” class.

6.2.2.6 “MeasurementSpecificCharacteristics” Class

An instance of the “MeasurementSpecificCharacteristics” class contains characteristics which are specific to an individual measurement type (specified in a known order) at the given measurement site.

6.2.2.7 “VehicleCharacteristics” Class

The characteristics of a vehicle, e.g. lorry of gross weight greater than 30 tonnes.

The “VehicleCharacteristics” class is defined in the “VehicleCharacteristics” package which is already described in CEN/TS 16157-3.

7 The Measured Data Publication model

7.1 Overview of the Measured Data Publication model

The Measured Data Publication model shall comprise a top-level package, “MeasuredDataPublication” and one sub-package “BasicData” from the “ReusableClasses” package. The “MeasuredDataPublication” top-level package shall be one of a number which shall be immediately subordinate to the “PayloadPublication” package and hence shall form the top of the hierarchy in the Measured Data Publication model.

7.2 The “MeasuredDataPublication” Package

7.2.1 Overview of the “MeasuredDataPublication” Package

The “MeasuredDataPublication” package shall comprise the sub-model for defining a publication containing one or more measurement data sets, each set being composed of a number of measure values measured at a single measurement site.

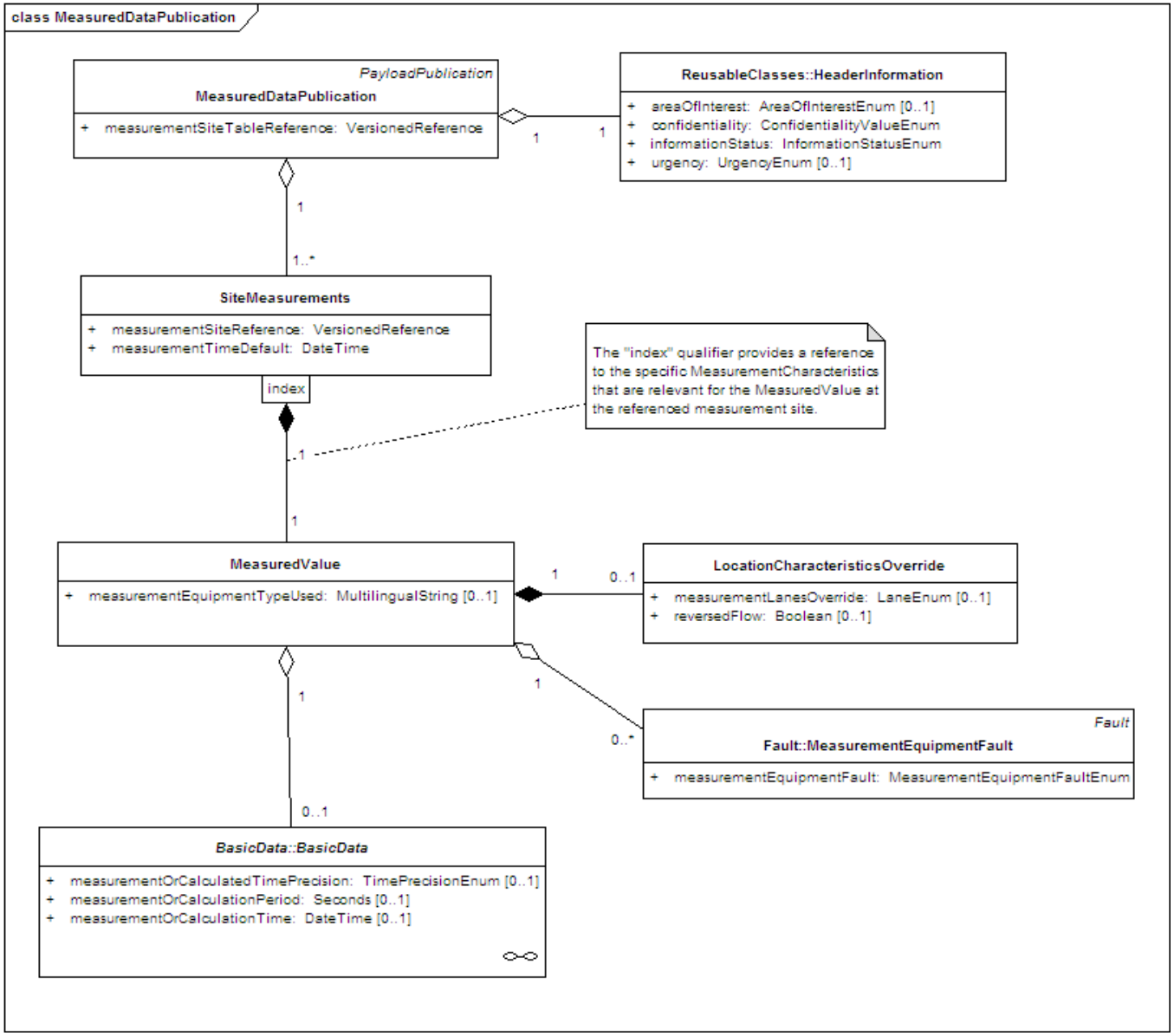

Figure 2 — The "MeasuredDataPublication" package class model

7.2.2 Semantics of the “MeasuredDataPublication” Package

7.2.2.1 “MeasuredDataPublication” package semantics - general

The “MeasuredDataPublication” class shall be the only entry point of the package and shall be a specific realizable case of a “PayloadPublication”. Each “MeasuredDataPublication” shall contain one or more measurement data sets, each set being measured at a single measurement site.

7.2.2.2 “MeasuredDataPublication” Class

The “MeasuredDataPublication” class shall be the base class for containing the published measured data.

7.2.2.3 “HeaderInformation” Class

Each instance of a “MeasuredDataPublication” shall have associated metadata contained in an instance of the “HeaderInformation” class which shall allow the supplier of the publication to specify how the recipient of the “MeasuredDataPublication” should treat the information contained in it. This class is already defined in CEN/TS 16157-3.

7.2.2.4 “SiteMeasurements” Class

The “SiteMeasurements” class shall contain a measurement data set derived from a specific measurement site.

Each measurement site, at a given time, has an indexed “MeasurementValue”. The “index” qualifier provides a reference to the specific MeasurementCharacteristics that are relevant for the MeasuredValue at the referenced measurement site.

7.2.2.5 “MeasuredValue” Class

The “MeasuredValue” class contains optional characteristics for the specific measured value (indexed to correspond with the defined characteristics of the measurement at the referenced measurement site) which override the static characteristics defined in the MeasurementSiteTable.

7.2.2.6 “LocationCharacteristicsOverride” Class

The “LocationCharacteristicsOverride” class may contain location characteristics which override values set in the referenced measurement point.

7.2.2.7 “MeasurementEquipmentFault” Class

The “MeasurementEquipmentFault” class contains details of a fault which is being reported for the related measurement equipment.

7.2.2.8 “BasicData” Class

The “BasicData” class contains generic data that is either measured or calculated (elaborated) at the same time or over the same time period. These values are expressed using basic classes included in the DataValue package which is already defined in CEN/TS 16157-3.

7.3 The “BasicData” Package

7.3.1 Overview of the “BasicData” Package

This package describes data that is either measured or calculated (elaborated).

Basic Data values are of one of the following types:

— traffic status;

— travel time data;

— traffic data;

— weather data.

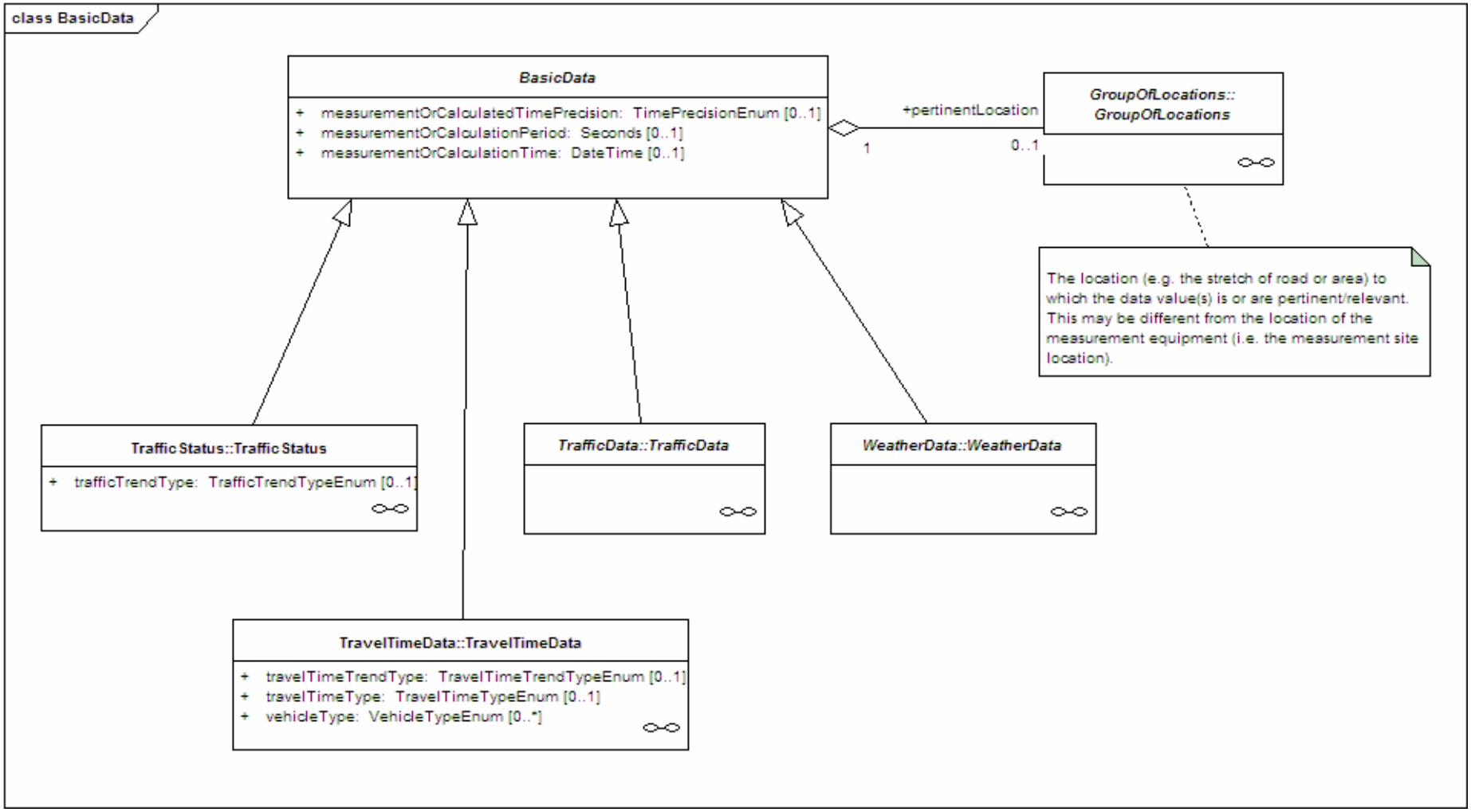

Figure 3 — The "BasicData" package class model

7.3.2 Semantics of the “BasicData” Package

7.3.2.1 “BasicData” package semantics – general

The “BasicData” class is an abstract class i.e. shall be specialized in one of the possible type given above. Each Basic Data value may have a pertinent location, which is a location or a group of locations (e.g. a stretch of road or an area) relevant for the data value(s). This may be different from the location of the measurement equipment (i.e. the measurement site location).

Each basic data type is described in a specific package.

7.3.2.2 “BasicData” Class

It is an abstract class. Generic data that is either measured or calculated (elaborated) at the same time or over the same time period.

7.3.2.3 “GroupOfLocations” class

The package is defined in reference document “CEN/TS 16157-2 (Part 2: Location referencing)”.

The “GroupOfLocations” class contains the location (e.g. the stretch of road or area) to which the data value(s) is or are pertinent/relevant. Generally, this group of locations is identified by reference.

7.4 The “TrafficStatus” Package

7.4.1 Overview of the “TrafficStatus” Package

Derived/computed traffic status information.

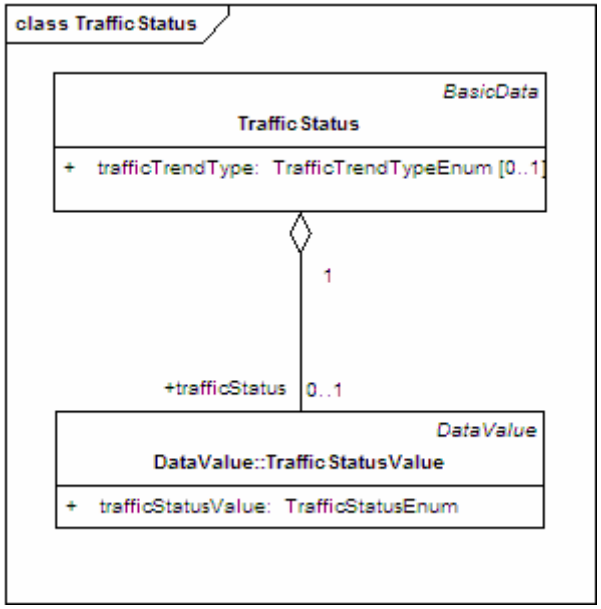

Figure 4 — The "TrafficStatus" package class model

7.4.2 Semantics of the "TrafficStatus" Package

7.4.2.1 "TrafficStatus" package semantics – general

The "TrafficStatus" class can be associated with a "TrafficStatusValue" class if the value differs from the reference value given for the publication.

7.4.2.2 "TrafficStatus" Class

The status of traffic conditions on a specific section or at a specific point on the road network.

7.4.2.3 "TrafficStatusValue" Class

This class is already defined in CEN/TS 16157-3.

7.5 The “TravelTimeData” Package

7.5.1 Overview of the “TravelTimeData” Package

Measured or derived travel time information relating to a defined linear stretch of the road network.

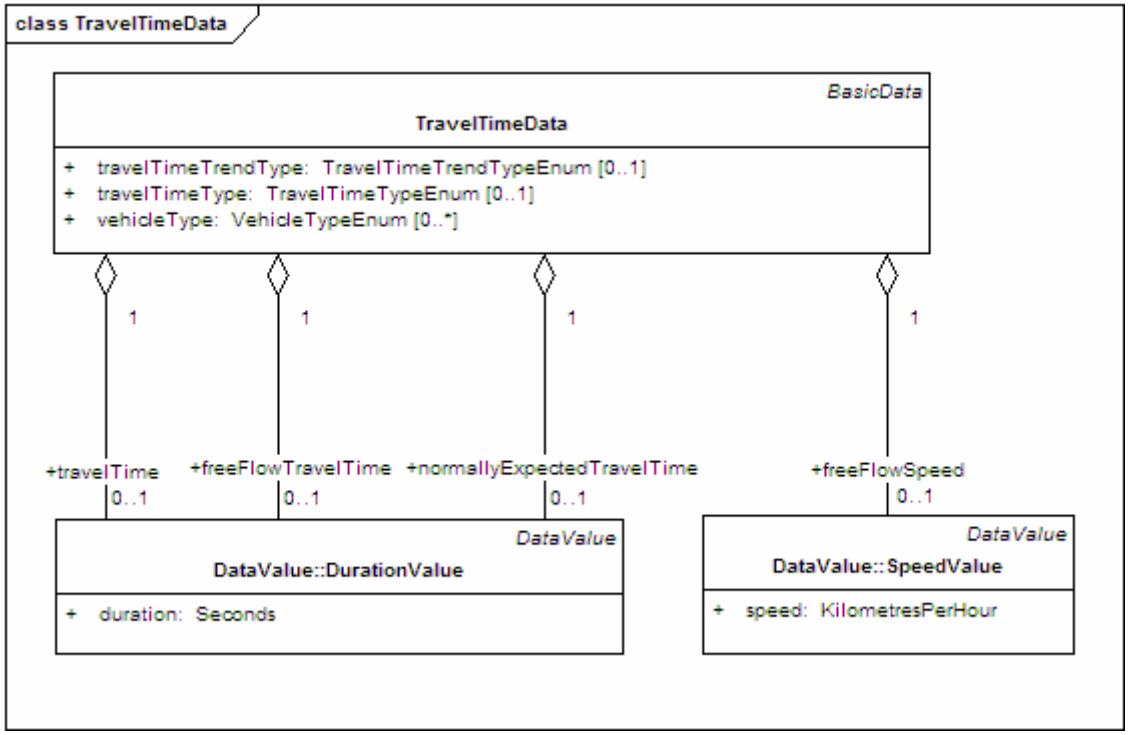

Figure 5 — The “TravelTimeData” package class model

7.5.2 Semantics of the “TravelTimeData” Package

7.5.2.1 “TravelTimeData” package semantics – general

The “TravelTimeData” class may be associated with the “DurationValue” class through three possible relationships:

— travel time (in seconds);

— free flow travel time;

— normally expected travel time;

— as well as with a “SpeedValue” class through the Free flow speed relationship.

7.5.2.2 “TravelTimeData” Class

Derived/computed travel time information relating to a linear section of the road network.

7.6 The “TrafficData” Package

7.6.1 Overview of the “TrafficData” Package

This package represents a collection of information associated with measured or derived values relating to vehicle movements at a specified location.

Traffic data are usually sent as Measured Data, but can also be sent as Elaborated Data.

Traffic values can be classified on the basis of vehicle characteristics.

There are 5 kinds of traffic values:

— traffic headway;

— traffic flow;

— traffic speed;

— traffic concentration;

— individual vehicle measurements (not applicable for elaborated data).

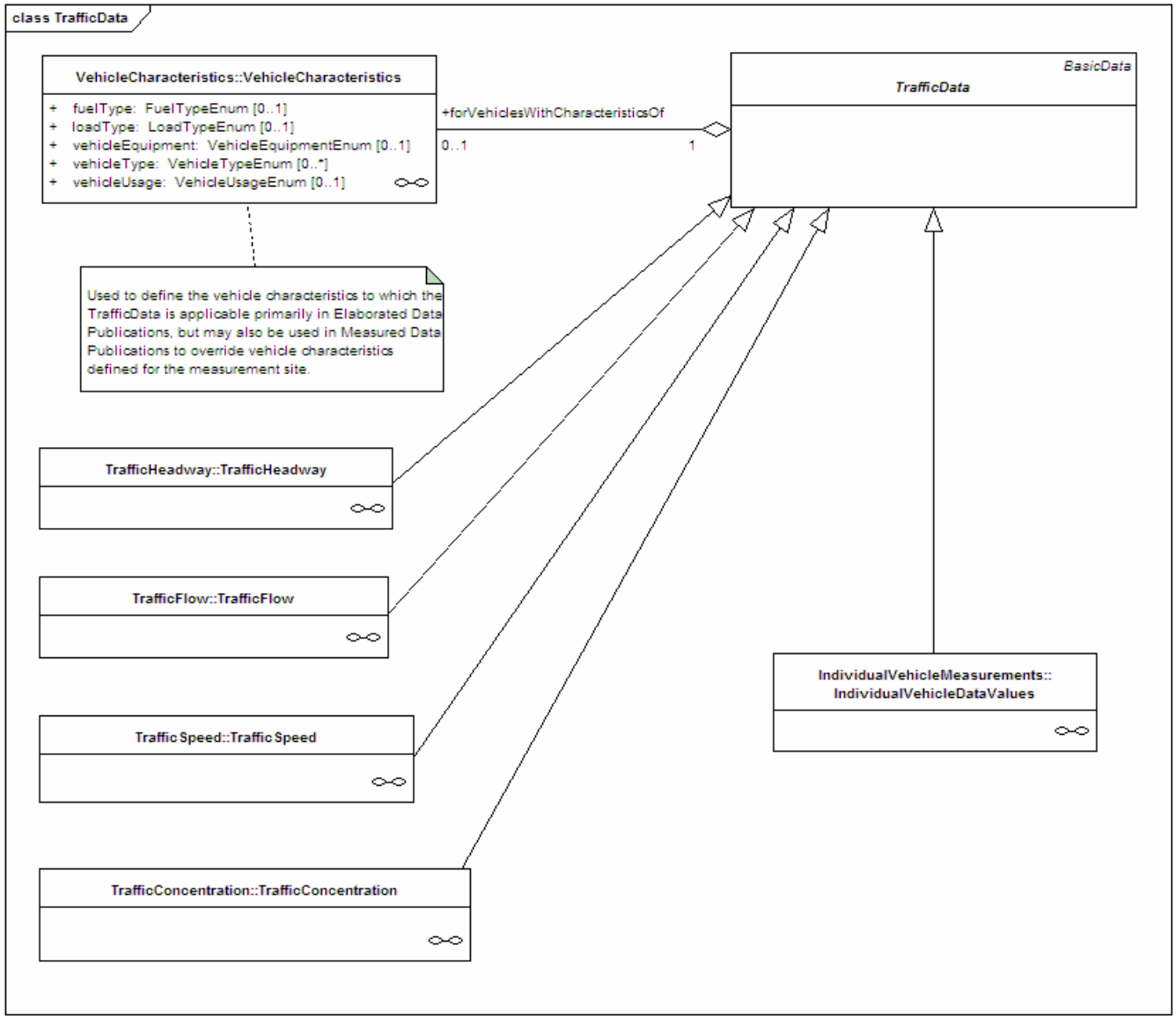

Figure 6 — The “TrafficData” package class model

7.6.2 Semantics of the “TrafficData” Package

7.6.2.1 “TrafficData” package semantics – general

The “TrafficData” abstract class shall be the only entry point of the package.

The “VehicleCharacteristics” class from “VehicleCharacteristics” package within “ReusableClasses” is used to define the vehicle characteristics to which the TrafficData are applicable, primarily in Elaborated Data Publications, but may also be used in Measured Data Publications to override vehicle characteristics defined for the measurement site.

Each kind of traffic value is defined in a specific package.

7.6.2.2 “TrafficData” Class

It is an abstract class without any attribute.

7.6.2.3 “VehicleCharacteristics” Class

The characteristics of a vehicle, e.g. lorry of gross weight greater than 30 tonnes.

The “VehicleCharacteristics” class is the entry class of the “VehicleCharacteristics” package which is already described in CEN/TS 16157-3.

7.7 The “TrafficHeadway” Package

7.7.1 Overview of the “TrafficHeadway” Package

Averaged measurements or calculations of traffic headway, i.e. the distance or time interval between vehicles (measured between the front of a vehicle and the front of the vehicle immediately following it). The headway can be expressed as an average distance or an average time.

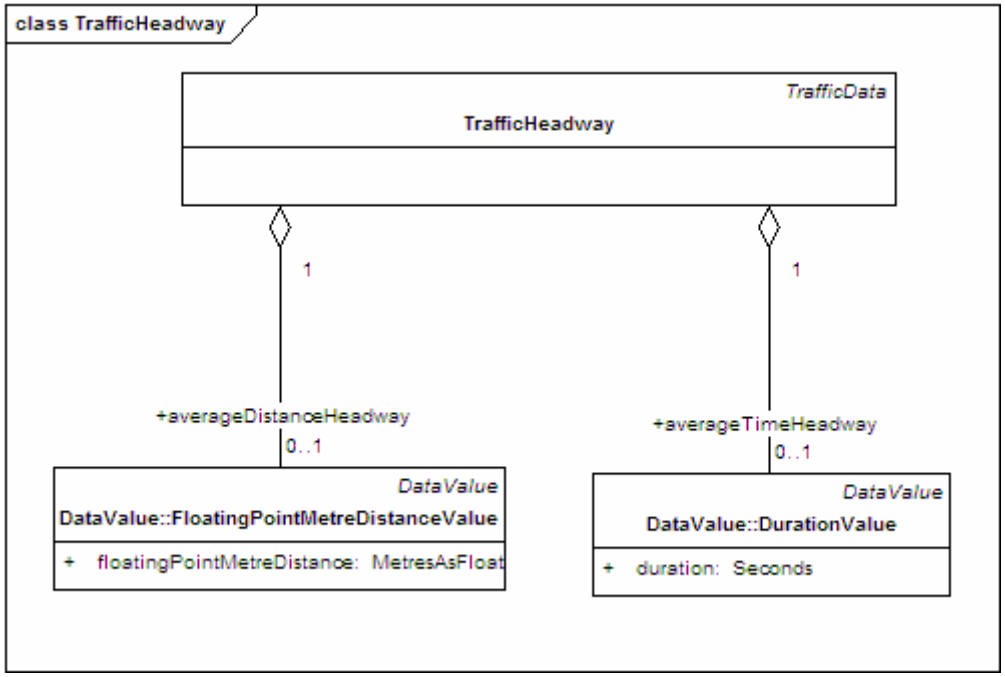

Figure 7 — The "TrafficHeadway" package class model

7.7.2 Semantics of the "TrafficHeadway" Package

7.7.2.1 "TrafficHeadway" package semantics – general

Each type of headway (i.e. in terms of distance or time) shall be associated with a separate class.

7.7.2.2 "TrafficHeadway" Class

Averaged measurements or calculations of traffic headway, i.e. the distance or time interval between vehicles.

7.8 The “TrafficFlow” Package

7.8.1 Overview of the “TrafficFlow” Package

Averaged measurements of traffic flow rates. They can be expressed in four different ways:

— axle flow;

— PCU flow;

— percentage value;

— vehicle flow.

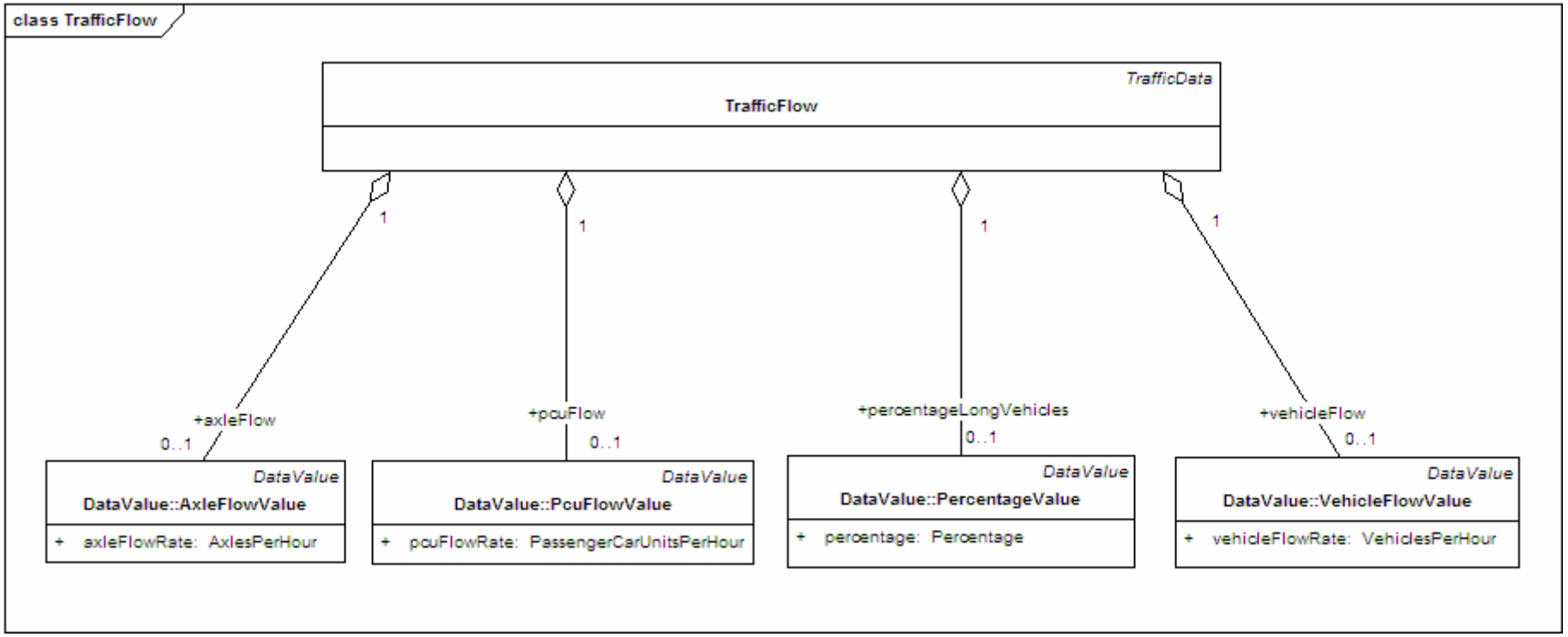

Figure 8 — The “TrafficFlow” package class model

7.8.2 Semantics of the “TrafficFlow” Package

7.8.2.1 “TrafficFlow” package semantics – general

The “TrafficFlow” class may be accompanied with the possible kind of flow which is expressed with one specific class.

7.8.2.2 “TrafficFlow” Class

The generic class of the package.

7.8.2.3 “AxleFlowValue” Class

This class is already defined in CEN/TS 16157-3.

7.8.2.4 “PcuFlowValue” Class

This class is already defined in CEN/TS 16157-3.

7.8.2.5 “VehicleFlowValue” Class

This class is already defined CEN/TS 16157-3.

7.9 The “TrafficSpeed” Package

7.9.1 Overview of the “TrafficSpeed” Package

Averaged measurements or calculations of traffic speed.

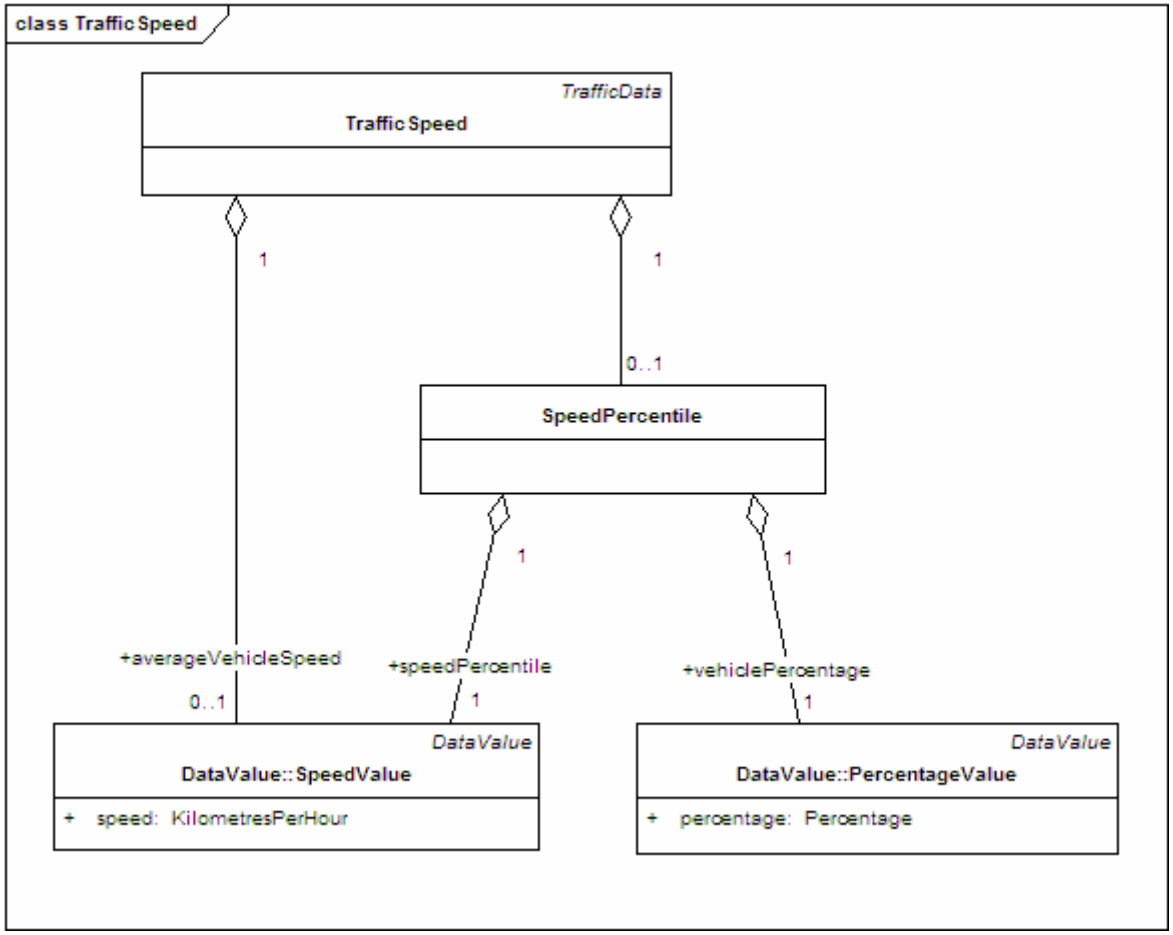

Figure 9 — The "TrafficSpeed" package class model

7.9.2 Semantics of the "TrafficSpeed" Package

7.9.2.1 "TrafficSpeed" package semantics – general

Averaged measurements or calculations of traffic speed.

7.9.2.2 “SpeedPercentile” Class

Details of percentage (from an observation set) of vehicles whose speeds fall below a stated value. The speed value and the percentage value shall both be given.

7.10 The “TrafficConcentration” Package

7.10.1 Overview of the “TrafficConcentration” Package

Averaged measurements or calculations of traffic concentration. The concentration is expressed with a number of vehicles per kilometre or with a percentage.

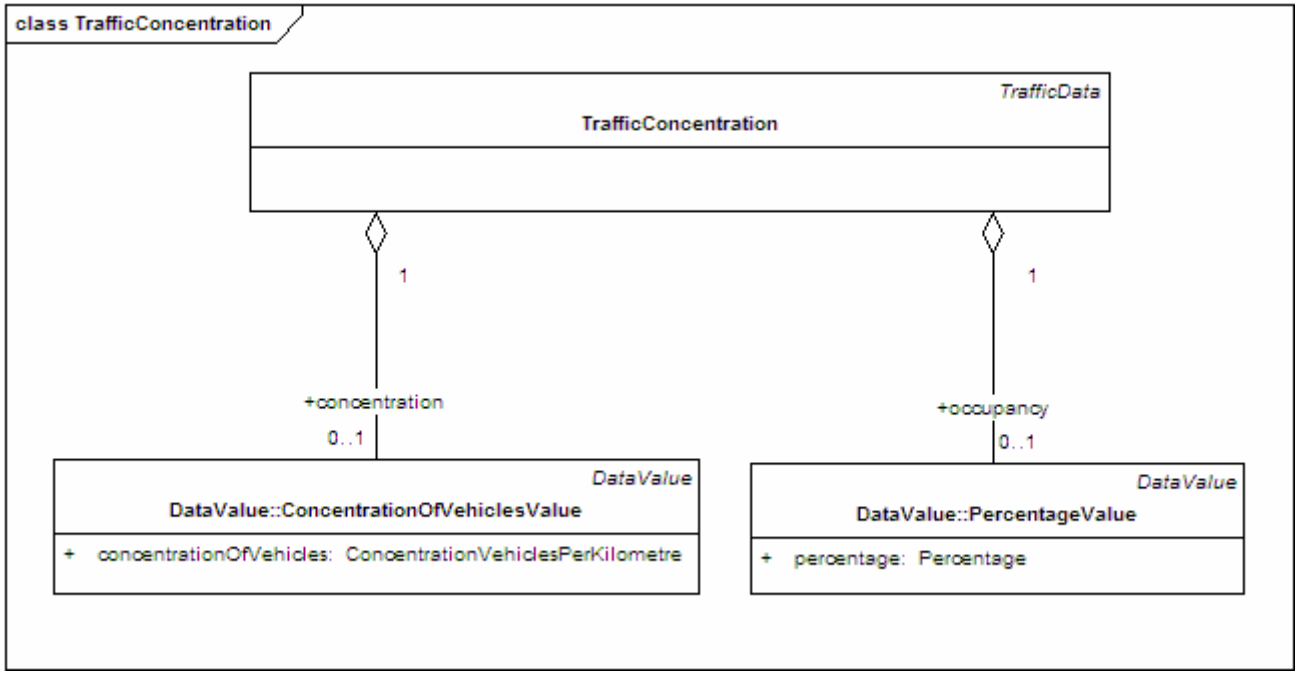

Figure 10 — The “TrafficConcentration” package class model

7.10.2 Semantics of the “TrafficConcentration” Package

7.10.2.1 “TrafficConcentration” package semantics – general

The “TrafficConcentration” class provides averaged measurements or calculations of traffic concentration. This class has no specific attribute. Each kind of concentration value (in vehicles per kilometre or percentage) is provided in a separate class.

7.10.2.2 “ConcentrationOfVehiclesValue” Class

This class is already defined in CEN/TS 16157-3.

7.11 The “IndividualDataValues” Package

7.11.1 Overview of the “IndividualDataValues” Package

Measured or calculated data values relating to individual vehicles derived from detectors at the specified measurement site.

There are four different kinds of values:

— date times;

— speeds;

— durations;

— distances.

Nine values can be given:

— individual vehicle speed;

— arrival time;

— exit time;

— passage duration time;

— presence duration time;

— time gap;

— time headway;

— distance gap;

— distance headway.

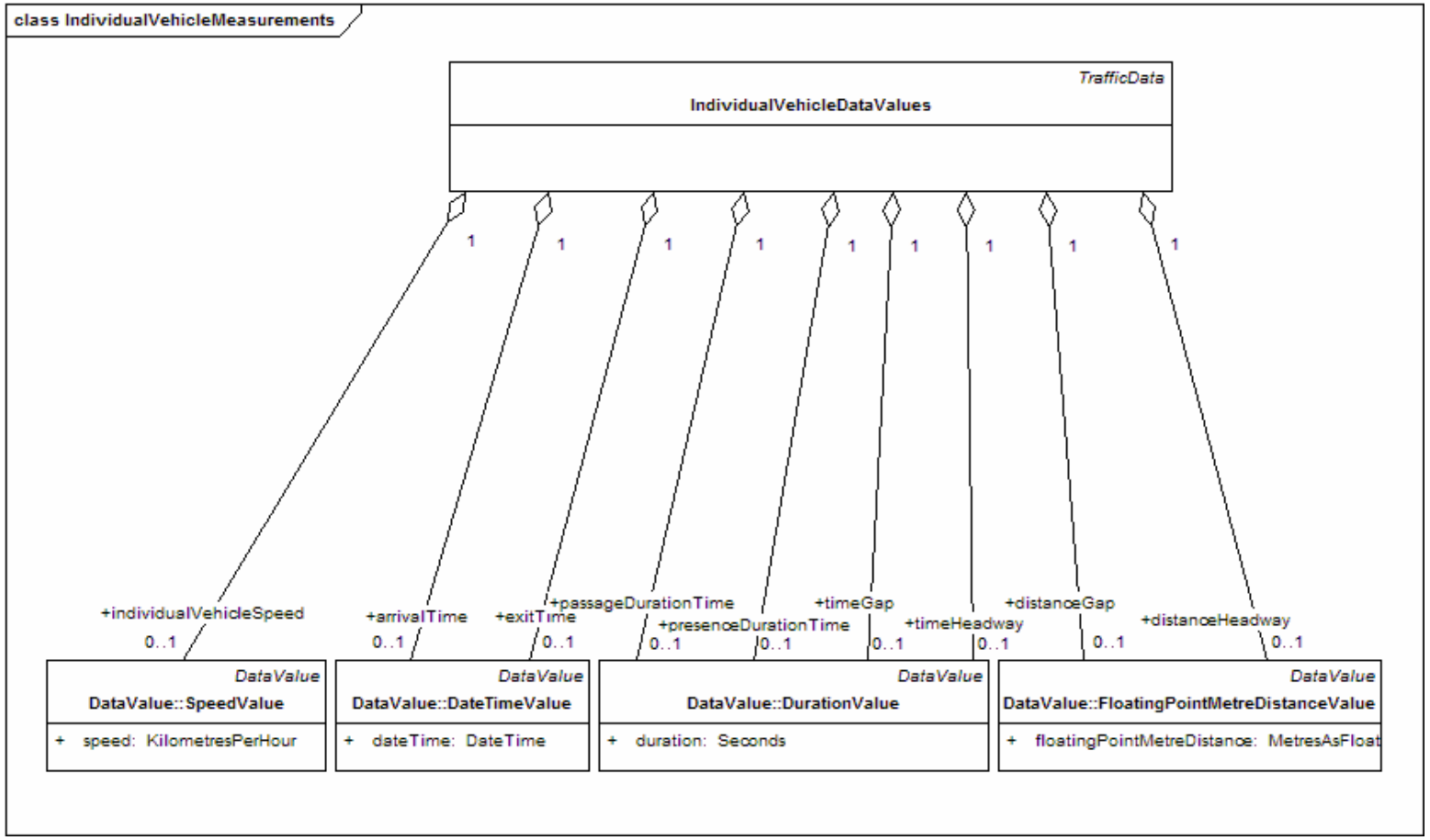

Figure 11 — The "IndividualVehicleDataValues" package class model

7.11.2 Semantics of the “IndividualDataValues” Package

7.11.2.1 “IndividualDataValues” package semantics – general

The “IndividualDataValues” class shall be the only entry point of the package. Each value is expressed with a class depending on its type.

7.11.2.2 “IndividualDataValues” Class

Measured or calculated data values relating to individual vehicles derived from detectors at the specified measurement site.

7.12 The “WeatherData” Package

7.12.1 Overview of the “WeatherData” Package

This package contains measured or derived values relating to the weather at a specific location or locations.

There are 7 types of weather values:

— humidity information;

— visibility information;

— pollution information;

— precipitation information;

— road surface condition information;

— temperature information;

— wind information.

NOTE However the following point is of note for its use in the Elaborated Data publication: Traffic values and weather values are normally provided as Measured data, but may be provided as Elaborated data if appropriate (e.g. because values are provided by calculation).

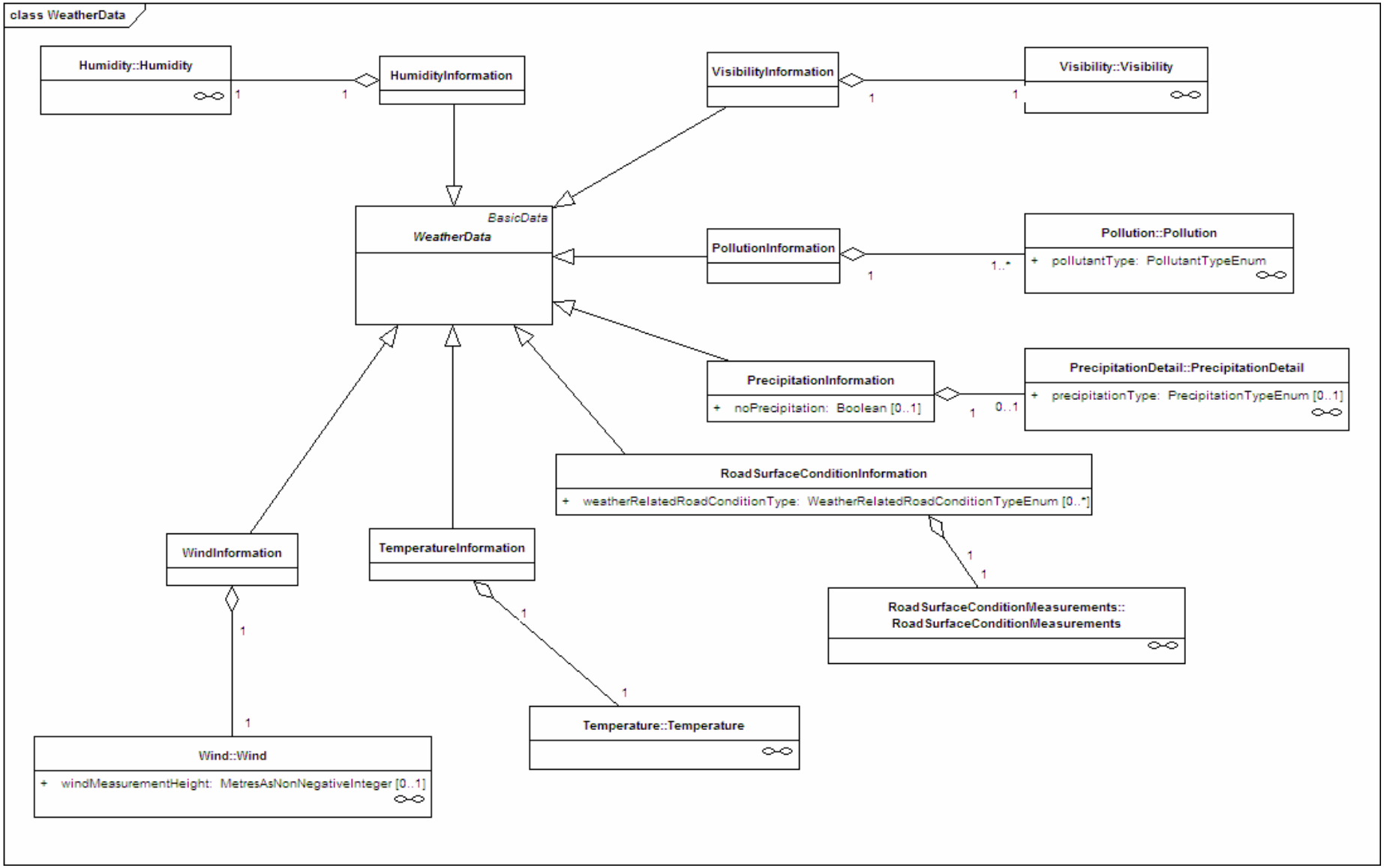

Figure 12 — The "WeatherData" package class model

7.12.2 Semantics of the “WeatherData” Package

7.12.2.1 “WeatherData” package semantics – general

The “WeatherData” abstract class shall be the only entry point of the package. Each type of weather value is expressed with a specific class being part of a specific package within “WeatherRelated” package within “ReusableClasses” package:

— “Humidity” package

— “Visibility” package

— “Pollution” package

— “PrecipitationDetail” package

— “RoadsurfaceConditionMeasurementsDetail” package

— “Temperature” package

— “Wind” package

7.12.2.2 “WeatherData” Class

It is an abstract class for measured or derived values relating to the weather at a specific location or locations.

7.12.2.3 “HumidityInformation” Class

Measurements of atmospheric humidity.

7.12.2.4 “VisibilityInformation” Class

Measurements of atmospheric visibility.

7.12.2.5 “PolutionInformation” Class

Measurements of atmospheric pollution.

7.12.2.6 “PrecipitationInformation” Class

Measurements of precipitation.

7.12.2.7 “RoadSurfaceConditionInformation” Class

Measurements of road surface conditions which are related to the weather.

7.12.2.8 “TemperatureInformation” Class

Measurements of atmospheric temperature.

7.12.2.9 “WindInformation” Class

Measurements of wind conditions.

7.13 The “Humidity” Package

7.13.1 Overview of the “Humidity” Package

Humidity is a relative humidity expressed with a percentage value.

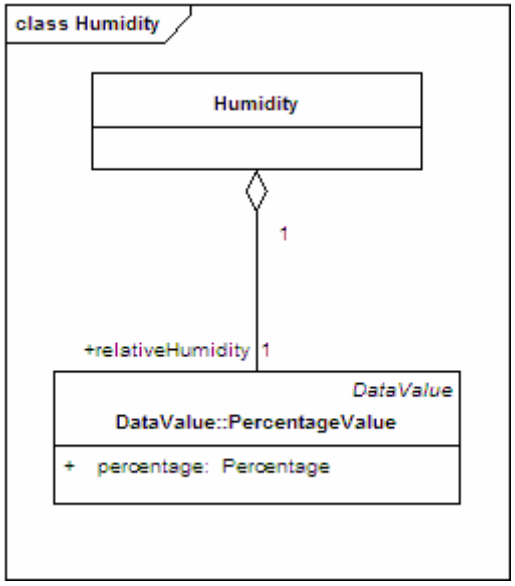

Figure 13 — The “Humidity” package class model

7.13.2 Semantics of the “Humidity” Package

7.13.2.1 “Humidity” package semantics – general

Humidity is a relative humidity expressed with a “PercentageValue” class from “DataValue” package within “ReusableClasses” package.

7.13.2.2 “Humidity” Class

Details of atmospheric humidity

7.14 The “Visibility” Package

7.14.1 Overview of the “Visibility” Package

Visibility is a minimum visibility distance expressed in metres.

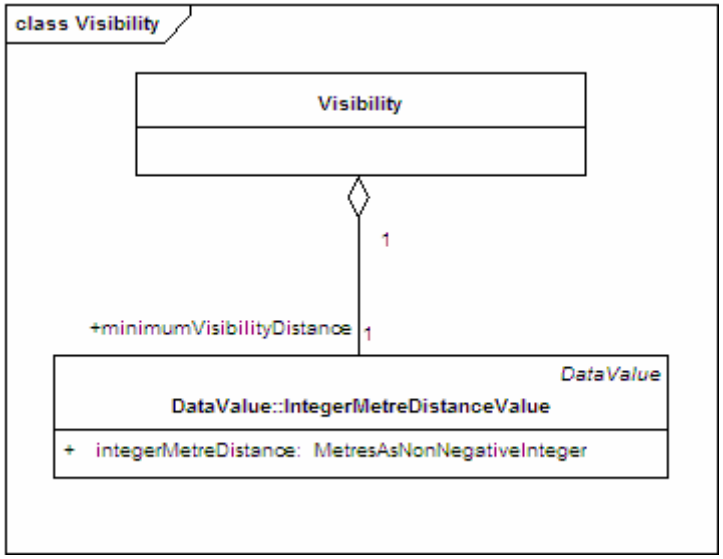

Figure 14 — The “Visibility” package class model

7.14.2 Semantics of the “Visibility” Package

7.14.2.1 “Visibility” package semantics – general

VIsibility is a minimum visibility distance expressed with an “IntegerMetreDistanceValue” class from “DataValue” package within “ReusableClasses” package.

7.14.2.2 “Visibility” Class

Details of atmospheric visibility.

7.15 The “Pollution” Package

7.15.1 Overview of the “Pollution” Package

Details of atmospheric pollution.

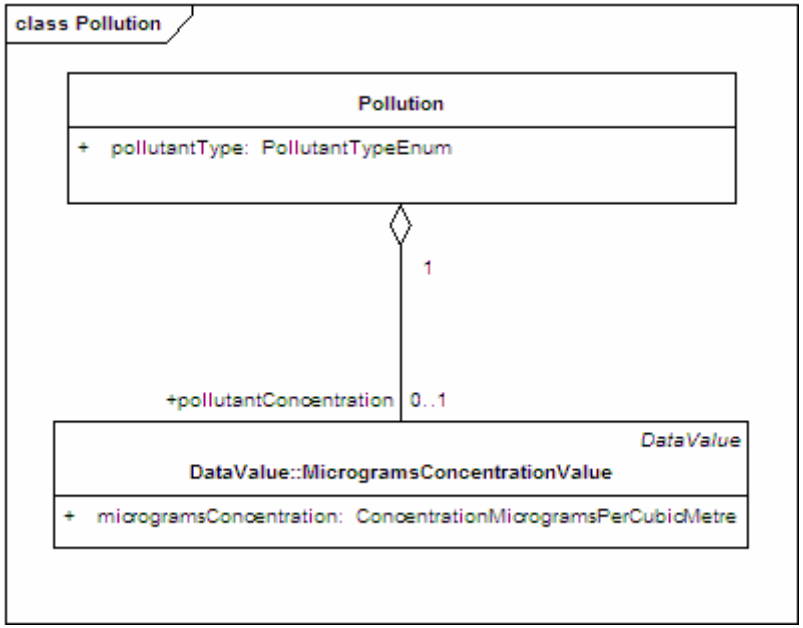

Figure 15 — The “Pollution” package class model

7.15.2 Semantics of the “Pollution” Package

7.15.2.1 “Pollution” package semantics – general

The pollutant type shall be given in the “Pollution” class. The pollutant concentration may be given in a separate class.

7.15.2.2 “Pollution” Class

Contains the pollutant type.

7.16 The “PrecipitationDetail” Package

7.16.1 Overview of the “PrecipitationDetail” Package

Details of precipitation (rain, snow etc.). The type, the intensity and the deposition depth can be given.

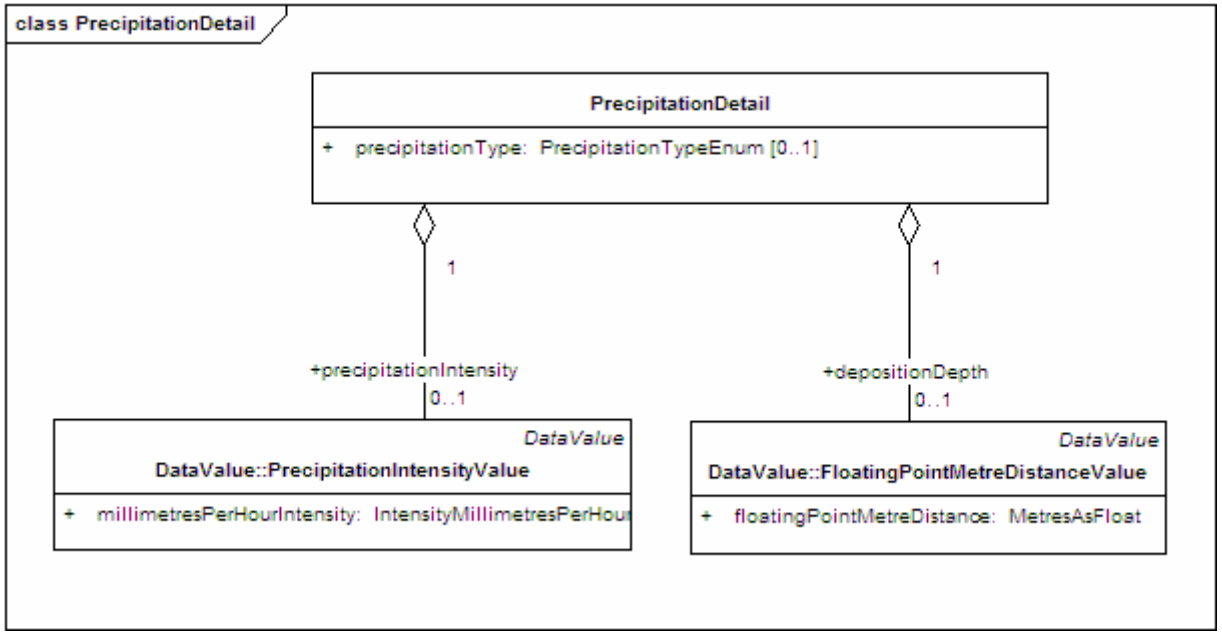

Figure 16 — The “PrecipitationDetail” package class model

7.16.2 Semantics of the “PrecipitationDetail” Package

7.16.2.1 “PrecipitationDetail” package semantics – general

The type of precipitation is given in the entry class. Intensity and deposition depth are given in separate classes from “DataValue” package within “ReusableClasses” package.

7.16.2.2 “PrecipitationDetail” Class

Gives the type of precipitation

7.16.2.3 “PrecipitationIntensityValue” Class

This class is already defined in CEN/TS 16157-3.

7.17 The “RoadsurfaceConditionMeasurements” Package

7.17.1 Overview of the “RoadsurfaceConditionMeasurements” Package

Measurements of the road surface condition which relate specifically to the weather. Different kinds of values can be given:

— road surface temperature;

— protection temperature;

— de-icing concentration;

— de-icing application rate;

— depth of snow;

— water film thickness.

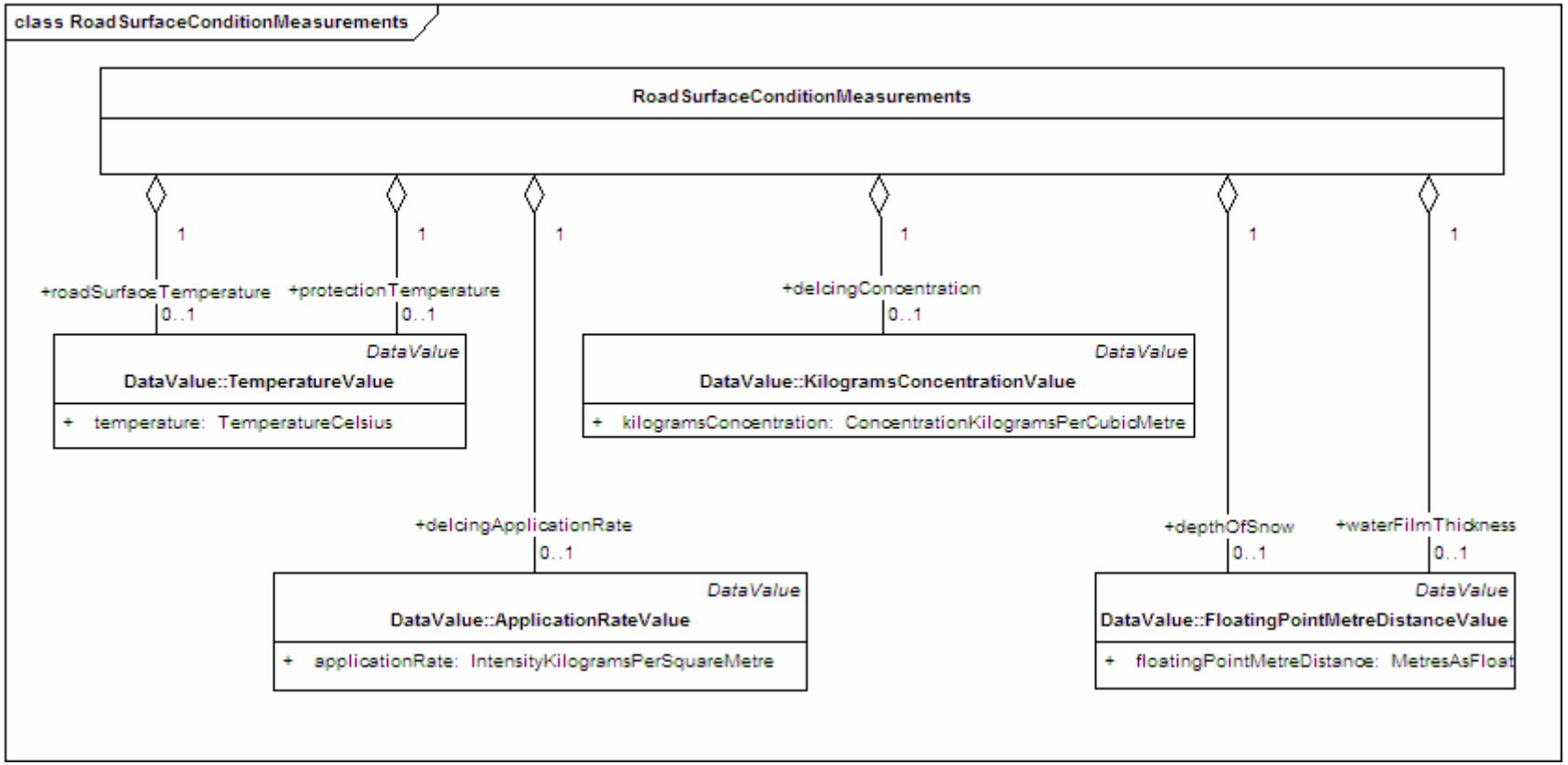

Figure 17 — The "RoadSurfaceConditionMeasurements" package class model

7.17.2 Semantics of the "RoadsurfaceConditionMeasurements" Package

7.17.2.1 "RoadsurfaceConditionMeasurements" package semantics – general

Each value is given with a class depending on the value type, from "DataValue" package within "ReusableClasses" package.

7.17.2.2 "RoadsurfaceConditionMeasurements" Class

Measurements of the road surface condition which relate specifically to the weather. This class has no attribute.

7.17.2.3 “TemperatureValue” Class

This class is already defined in CEN/TS 16157-3.

7.17.2.4 “ApplicationRateValue” Class

This class is already defined in CEN/TS 16157-3.

7.17.2.5 “KilogramsConcentrationValue” Class

This class is already defined in CEN/TS 16157-3.

7.18 The “Temperature” Package

7.18.1 Overview of the “Temperature” Package

Different temperature values can be given: air, dew point, maximum and minimum.

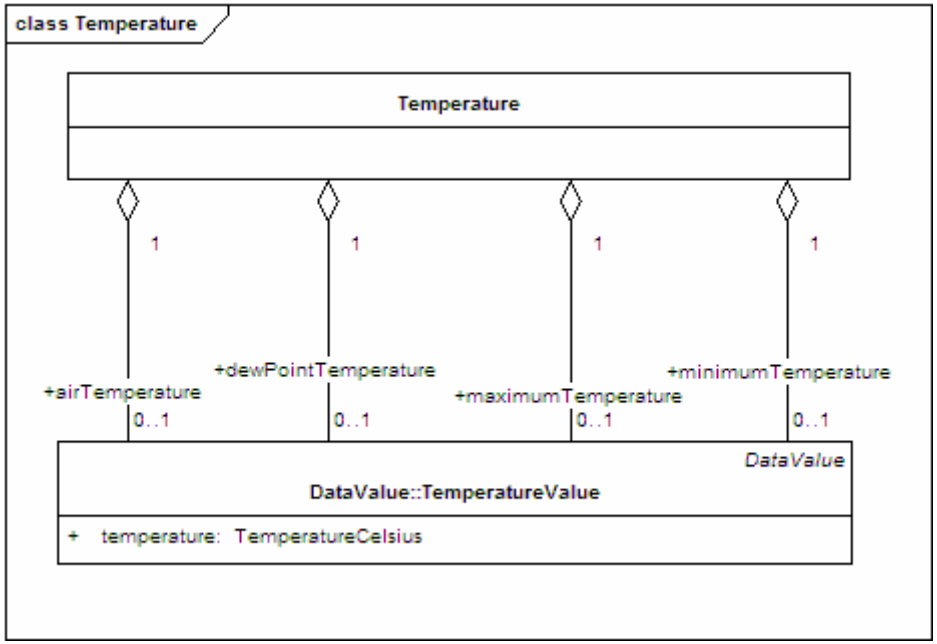

Figure 18 — The “Temperature” package class model

7.18.2 Semantics of the “Temperature” Package

7.18.2.1 “Temperature” package semantics – general

Values are given with “TemperatureValue” class from “DataValue” package within “ReusableClasses” package.

7.18.2.2 “Temperature” Class

Details of atmospheric temperature.

7.19 The “Wind” Package

7.19.1 Overview of the “Wind” Package

The measurement height can be given.

Different wind values can be given: speed, maximum speed, direction bearing and direction compass.

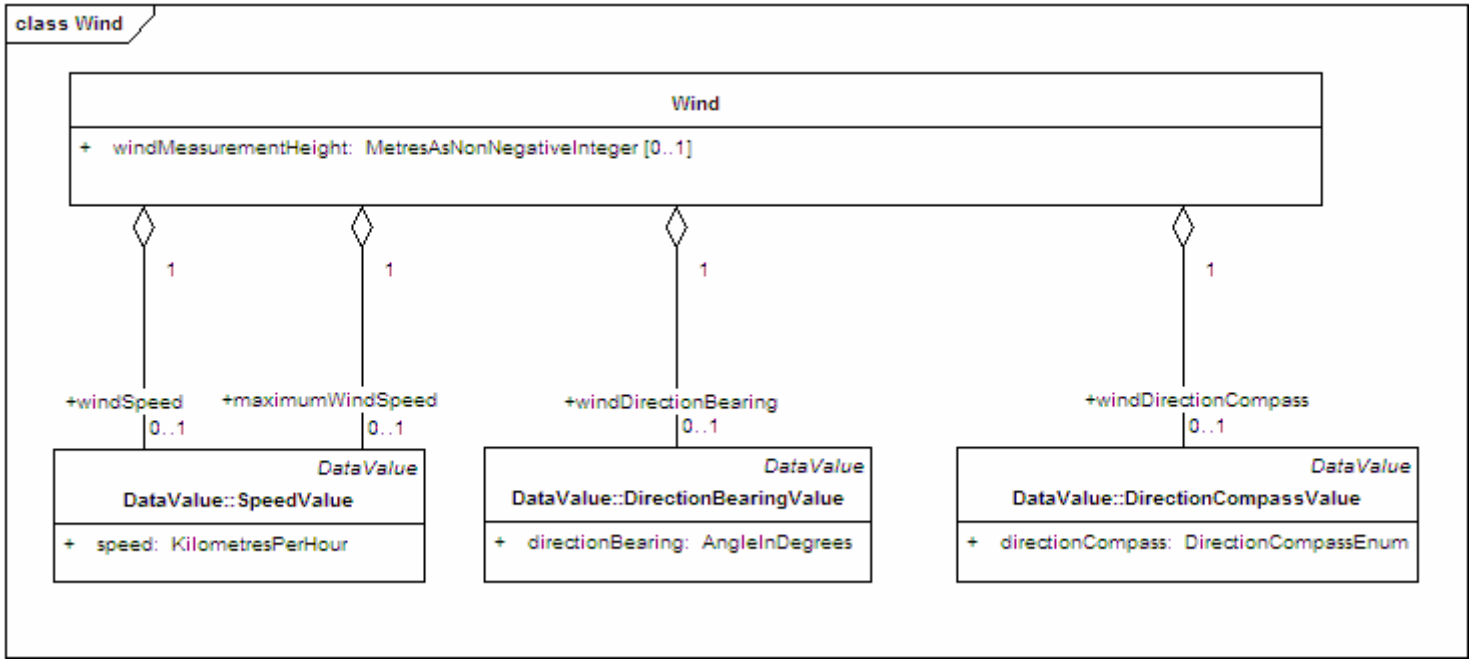

Figure 19 — The "Wind" package class model

7.19.2 Semantics of the "Wind" Package

7.19.2.1 "Wind" package semantics – general

Values are given with classes from "DataValue" package within "ReusableClasses" package.

7.19.2.2 "Wind" Class

This class can contain the wind measurement height.

7.19.2.3 "DirectionBearingValue" Class

This class is already defined in CEN/TS 16157-3.

7.19.2.4 “DirectionCompassValue” Class

This class is already defined in CEN/TS 16157-3.

8 The Elaborated Data Publication model

8.1 Overview of the Elaborated Data Publication model

The Elaborated Data Publication model shall comprise a top-level package, “Elaborated DataPublication” and one sub-package “ElaboratedData” from the “ReusableClasses” package. The “ElaboratedDataPublication” top-level package shall be one of a number which shall be immediately subordinate to the “PayloadPublication” package and hence shall form the top of the hierarchy in the Elaborated Data Publication model.

8.2 The “ElaboratedDataPublication” Package

8.2.1 Overview of the “ElaboratedDataPublication” Package

The “ElaboratedDataPublication” package shall comprise the sub-model for defining a publication containing one or more elaborated data sets.

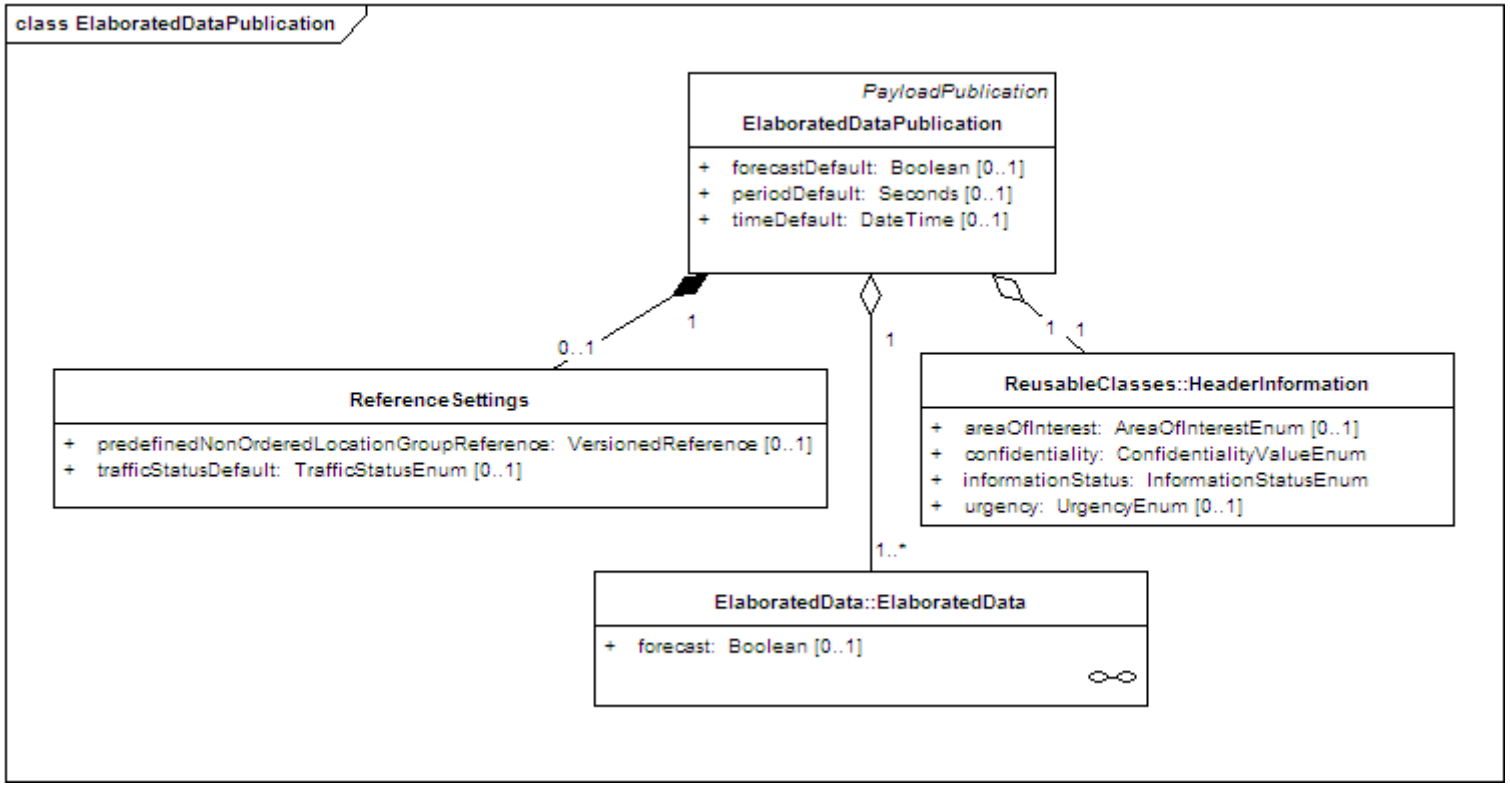

Figure 20 — The "ElaboratedDataPublication" package class model

8.2.2 Semantics of the "ElaboratedDataPublication" Package

8.2.2.1 "ElaboratedDataPublication" package semantics - general

The "ElaboratedDataPublication" class shall be the only entry point of the package and shall be a specific realizable case of a "PayloadPublication". Each "ElaboratedDataPublication" shall contain one or more elaborated data sets, each set being derived/computed from one or more measurements over a period of time.

8.2.2.2 "ElaboratedDataPublication" Class

The "ElaboratedDataPublication" class shall be the base class for containing the published elaborated data.

8.2.2.3 “HeaderInformation” Class

Each instance of an “ElaboratedDataPublication” shall have associated metadata contained in an instance of the “HeaderInformation” class which shall allow the supplier of the publication to specify how the recipient of the “ElaboratedDataPublication” should treat the information contained in it. This class is already defined in CEN/TS 16157-3.

8.2.2.4 “ReferenceSettings” Class

The “ReferenceSettings” class contains specification of the default value for traffic status on a group of predefined locations on the road network. Only when the traffic status differs from this value at a location in the group a value needs to be sent.

8.2.2.5 “ElaboratedData” Class

The “ElaboratedData” class contains data which is derived/computed from one or more measurements over a period of time. It may be a current value or a forecast value predicted like e.g. from historical measurements.

8.3 The “ElaboratedData” Package

8.3.1 Overview of the “ElaboratedData” Package

The “ElaboratedData” package shall be immediately subordinate to the “ElaboratedDataPublication” package and shall comprise the sub-model for defining an elaborated data set.

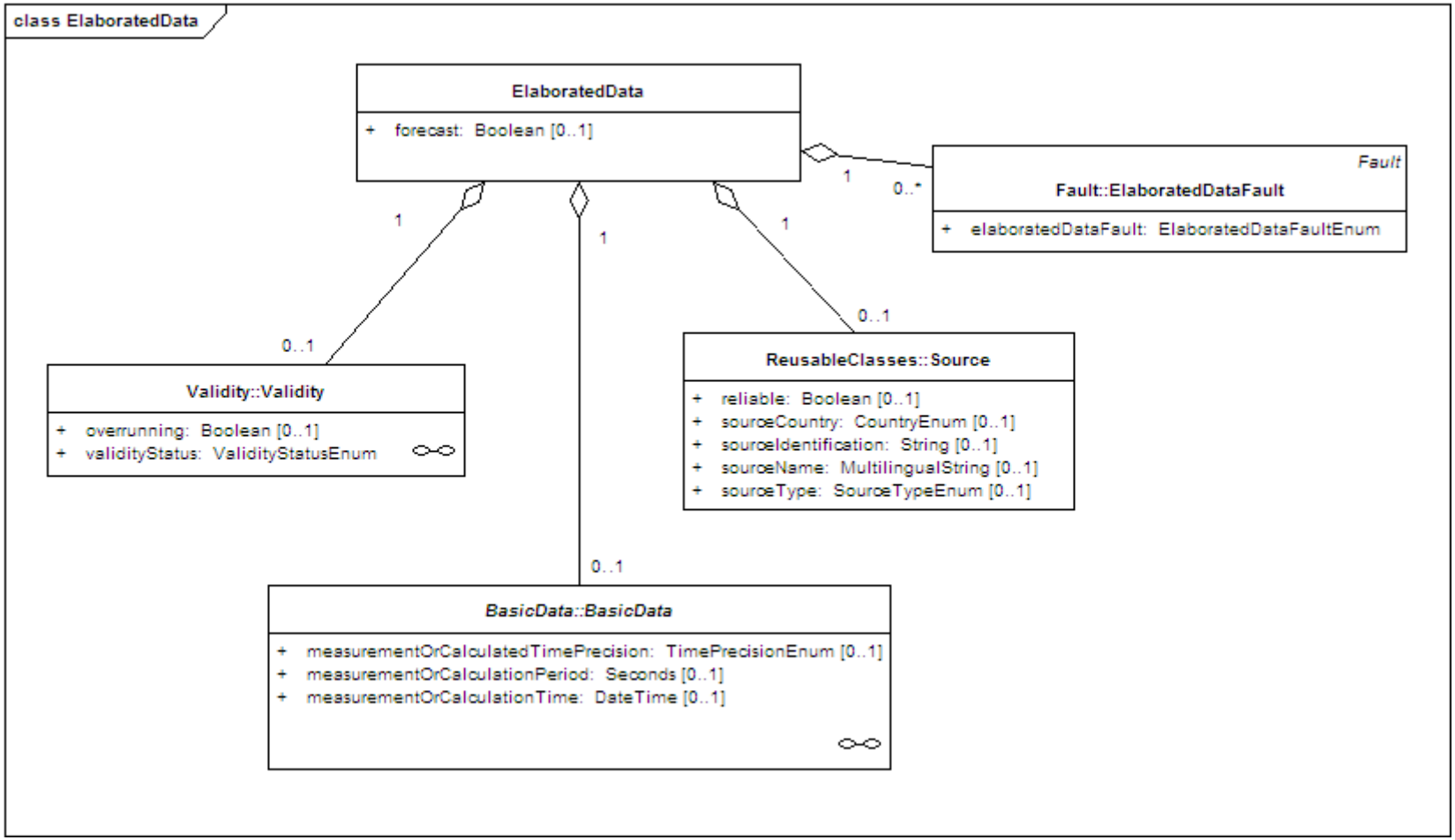

Figure 21 — The "ElaboratedDataPublication" package class model

8.3.2 Semantics of the "ElaboratedData" Package

8.3.2.1 "ElaboratedData" package semantics - general

The "ElaboratedData" class shall be the only entry point of the package. The "ElaboratedData" class contains data which is derived/computed from one or more measurements over a period of time. The time validity of the elaborated data are specified by the Validity package. Details of the source from which the information was obtained, is described by the "Source" class from the "ReusableClasses" package. Details of a fault which is being reported for the

related elaborated data, is described by the “ElaboratedDataFault” class form the “Fault” package within the “ReusableClasses” package. The elaborated values are given by the “BasicData” package.

8.3.2.2 The “ElaboratedData” class

An instance of data which is derived/computed from one or more measurements over a period of time. It may be a current value or a forecast value predicted like e.g. from historical measurements.

8.3.2.3 The “Source” class

This class is already defined in CEN/TS 16157-3.

8.3.2.4 The “ElaboratedDataFault” class

The “ElaboratedEquipmentFault” class contains details of a fault which is being reported for the related elaborated data.

8.4 The “Validity” Package

The “Validity” package is already defined in CEN/TS 16157-3.

8.5 The “BasicData” Package

The “BasicData” package and the packages which it includes are already described in this document from subclause 7.3: The “BasicData” Package to subclause 7.11: The “IndividualDataValues” Package.

Annex A
(normative)

Data Dictionary

A.1 Overview

This data dictionary identifies the definitions and characteristics of the different classes, attributes, association roles, data types and enumerations appearing in the data model defined in Clauses 6, 7 and 7.19.2. The data dictionary is specified in three parts for each of the three publications, one for packages, one for < < datatypes > > and one for < < enumerations > > , each ordered alphabetically.

The generic data types which are used throughout all publications are defined in CEN/TS 16157-1, Annex E Clause E.5.

The first part of the data dictionary for each publication is partitioned into sub-clauses which relate to each of the UML model packages and each sub-clause defines the contained classes, their attributes and any roles defined for associations between the classes within that package.

The Data Dictionary tables use the following columns:

1) Column **Class name**: it provides the symbolic name (Upper Camel Case) given to the corresponding class.

2) Column **Role name**: it provides the symbolic name (Lower Camel Case) given to the corresponding role of an association.

3) Column **Attribute name**: it provides the symbolic name (Lower Camel Case) given to the corresponding attribute of a class.

4) Column **Enumerated value name**: It provides the symbolic name (Lower Camel Case) given to the corresponding enumerated value.

5) Column **Designation**: it provides the corresponding name in natural language of the corresponding class, attribute, role or enumeration value.

6) Column **Definition**: it provides a comprehensive definition detailing the class, attribute or role.

7) Column **Stereotype**: it provides a statement of the stereotype that is assigned to the class, if any - see CEN/TS 16157-1, Annex C Clause C3 for further details.

8) Column **Abstract**: it provides a statement as to whether the class is abstract (non realizable) or concrete (realizable).

9) Column **Multiplicity**: it provides a statement of the allowed multiplicity for the attribute or role.

10) Column **Target**: It provides the name of the class which is at the end of the association to which the role applies.

11) Column **Type**: it provides the name of the class used to define the data type relating to the attribute of the class.

A.2 Data Dictionary for "Measurement Site Table Publication"

A.2.1 "MeasurementSiteTablePublication" package

A.2.1.1 "MeasurementSiteTablePublication" package classes

Table A.1 — Classes of the "MeasurementSiteTable" package

Class name	Designation	Definition	Stereotype	Abstract
MeasurementSiteRecord	Measurement site record	An identifiable single measurement site entry/record in the Measurement Site table.	versionedIdentifiable	no
MeasurementSiteTable	Measurement site table	A Measurement Site Table comprising a number of sets of data, each describing the location from where a stream of measured data may be derived. Each location is known as a "measurement site" which can be a point, a linear road section or an area.	versionedIdentifiable	no
MeasurementSiteTablePublication	Measurement site table publication	A publication containing one or more Measurement Site Tables.		no
MeasurementSpecificCharacteristics	Measurement specific characteristics	Characteristics which are specific to an individual measurement type (specified in a known order) at the given measurement site.		no

A.2.1.2 " MeasurementSiteTable" package association roles

Table A.2— Associations of the "MeasurementSiteTable" package

Class name	Role name	Designation	Definition	Multiplicity	Target
MeasurementSiteRecord	measurementSiteLocation	Measurement site location		1..1	GroupOfLocations
MeasurementSpecificCharacteristics	specificVehicleCharacteristics	Specific vehicle characteristics		0..1	VehicleCharacteristics

A.2.1.3 “ MeasurementSiteTable ” package attributes

Table A.3— Attributes of the “MeasurementSiteTable” package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
MeasurementSiteRecord	computationMethod	Computation method	Method of computation which is used to compute the measured value(s) at the measurement site.	0..1	ComputationMethodEnum
	measurementEquipmentReference	Measurement equipment reference	The reference given to the measurement equipment at the site.	0..1	String
	measurementEquipmentTypeUsed	Measurement equipment type used	The type of equipment used to gather the raw information from which the data values are determined, e.g. 'loop', 'ANPR' (automatic number plate recognition) or 'urban traffic management system' (such as SCOOT).	0..1	MultilingualString
	measurementSide	Measurement side	Side of the road on which measurements are acquired, corresponding to the direction of the road.	0..1	DirectionEnum
	measurementSiteIdentification	Measurement site identification	Identification of a measurement site used by the supplier or consumer systems.	0..1	String
	measurementSiteName	Measurement site name	Name of a measurement site.	0..1	MultilingualString
	measurementSiteNumberOfLanes	Measurement site number of lanes	The number of lanes over which the measured value is determined.	0..1	NonNegativeInteger
	measurementSiteRecordVersionTime	Measurement site record version time	The date/time that this version of the measurement site record was defined. The identity and version of the measurement site record are defined by the class stereotype implementation.	0..1	DateTime
MeasurementSiteTable	measurementSiteTableIdentification	Measurement site table identification	An alphanumeric identification for the measurement site table, possibly human readable.	0..1	String

Class name	Attribute name	Designation	Definition	Multiplicity	Type
MeasurementSpecificCharacteristics	accuracy	Accuracy	The extent to which the value may be subject to error, measured as a percentage of the data value.	0..1	Percentage
	period	Period	The time elapsed between the beginning and the end of the sampling or measurement period. This item may differ from the unit attribute; e.g. an hourly flow can be estimated from a 5-min measurement period.	0..1	Seconds
	smoothingFactor	Smoothing factor	Coefficient required when a moving average is computed to give specific weights to the former average and the new data. A typical formula is, F being the smoothing factor: New average = (old average) F + (new data) (1 - F).	0..1	Float
	specificLane	Specific lane	The lane to which the specific measurement at the measurement site relates. This overrides any lane specified for the measurement site as a whole.	0..1	LaneEnum
	specificMeasurementValueType	Specific measurement value type	The type of this specific measurement at the measurement site.	1..1	MeasuredOrDerivedDataTypeEnum

A.3 Data Dictionary of < < datatypes > > for “Measurement Site Table Publication”

The definition of all data types which are used in the “Measurement Site Table Publication” is already contained in CEN/TS 16157-3.

A.4 Data Dictionary of < < enumerations > > for “Measurement Site Table Publication”

This clause contains the definitions of all enumerations which are used in the “Measurement Site Table Publication” and are not already in CEN/TS 16157-2.or CEN/TS 16157-3.

A.4.1 The < < enumeration > > “ComputationMethodEnum”

Types of computational methods used in deriving data values for data sets.

Table A.4 — Values contained in the enumeration “ComputationMethodEnum”

Enumerated value name	Designation	Definition
arithmeticAverageOfSamplesBasedOnAFixedNumberOfSamples	Arithmetic average of samples based on a fixed number of samples	Arithmetic average of sample values based on a fixed number of samples.
arithmeticAverageOfSamplesInATimePeriod	Arithmetic average of samples in a time period	Arithmetic average of sample values in a time period.
harmonicAverageOfSamplesInATimePeriod	Harmonic average of samples in a time period	Harmonic average of sample values in a time period.
medianOfSamplesInATimePeriod	Median of samples in a time period	Median of sample values taken over a time period.
movingAverageOfSamples	Moving average of samples	Moving average of sample values.

A.4.2 The < < enumeration > > “MeasuredOrDerivedDataTypeEnum”

Types of measured or derived data.

Table A.5 — Values contained in the enumeration “MeasuredOrDerivedDataTypeEnum”

Enumerated value name	Designation	Definition
humidityInformation	Humidity information	Measured or derived humidity information.
individualVehicleMeasurements	Individual vehicle measurements	Measured or derived individual vehicle measurements.
pollutionInformation	Pollution information	Measured or derived pollution information.
precipitationInformation	Precipitation information	Measured or derived precipitation information.
pressureInformation	Pressure information	Measured or derived pressure information.
radiationInformation	Radiation information	Measured or derived radiation information.
roadSurfaceConditionInformation	Road surface condition information	Measured or derived road surface conditions information.

Enumerated value name	Designation	Definition
temperatureInformation	Temperature information	Measured or derived temperature information.
trafficConcentration	Traffic concentration	Measured or derived traffic concentration information.
trafficFlow	Traffic flow	Measured or derived traffic flow information.
trafficHeadway	Traffic headway	Measured or derived traffic headway information.
trafficSpeed	Traffic speed	Measured or derived traffic speed information.
trafficStatusInformation	Traffic status information	Measured or derived traffic status information.
travelTimeInformation	Travel time information	Measured or derived travel time information.
visibilityInformation	Visibility information	Measured or derived visibility information.
windInformation	Wind information	Measured or derived wind information.

A.5 Data Dictionary for “Measured Data Publication”

A.5.1 “BasicData” package

A.5.1.1 “BasicData” package classes

Table A.6— Classes of the “BasicData” package

Class name	Designation	Definition	Stereotype	Abstract
BasicData	Basic data	Data that is either measured or calculated (elaborated) at the same time or over the same time period.		yes

A.5.1.2 “BasicData” package association roles

Table A.7— Associations of the “BasicData” package

Class name	Role name	Designation	Definition	Multiplicity	Target
BasicData	pertinentLocation	Pertinent location	The location (e.g. the stretch of road or area) to which the data value(s) is or are pertinent/relevant. This may be different from the location of the measurement equipment (i.e. the measurement site location).	0..1	GroupOfLocations

A.5.1.3 “BasicData” package attributes

Table A.8— Attributes of the “BasicData” package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
BasicData	measurementOrCalculatedTimePrecision	Measurement or calculated time precision	The precision to which the time of measurement or calculation is given.	0..1	TimePrecisionEnum
	measurementOrCalculationPeriod	Measurement or calculation period	The time elapsed between the beginning and the end of the sampling or measurement period. This item may differ from the unit attribute; e.g. an hourly flow can be estimated from a 5-min measurement period.	0..1	Seconds
	measurementOrCalculationTime	Measurement or calculation time	Point in time at which this specific value or set of values has been measured or calculated. It may also be a future time at which a data value is predicted.	0..1	DateTime

A.5.2 “Fault” package

A.5.2.1 “Fault” package classes

Table A.9— Classes of the “Fault” package

Class name	Designation	Definition	Stereotype	Abstract
ElaboratedDataFault	Elaborated data fault	Details of a fault which is being reported for the related elaborated data.		no
Fault	Fault	Information about a fault relating to a specific piece of equipment or process.		no
MeasurementEquipmentFault	Measurement equipment fault	Details of a fault which is being reported for the related measurement equipment.		no

A.5.2.2 “Fault” package association roles

There are no defined association roles in the “Fault” package.

A.5.2.3 “Fault” package attributes

Table A.10— Attributes of the “Fault” package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
ElaboratedDataFault	elaboratedDataFault	Elaborated data fault	The type of fault which is being reported for the specified elaborated data.	1..1	ElaboratedDataFaultEnum
Fault	faultCreationTime	Fault creation time	The date and time at which the fault was originally recorded/reported.	0..1	DateTime
	faultDescription	Fault description	Textual description of the fault.	0..1	String
	faultIdentifier	Fault identifier	Unique identifier of the fault.	0..1	String
	faultLastUpdateTime	Fault last update time	The date and time at which the fault information as specified in this instance was last updated.	1..1	DateTime

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	faultSeverity	Fault severity	The severity of the fault in terms of how it affects the usability of the equipment or the reliability of the data generated by the equipment.	0..1	FaultSeverityEnum
MeasurementEquipmentFault	measurementEquipmentFault	Measurement equipment fault	The type of fault which is being reported for the specified measurement equipment.	1..1	MeasurementEquipmentFaultEnum

A.5.3 "IndividualVehicleMeasurements" package

A.5.3.1 "IndividualVehicleMeasurements" package classes

Table A.11— Classes of the "IndividualVehicleMeasurements" package

Class name	Designation	Definition	Stereotype	Abstract
IndividualVehicleDataValues	Individual vehicle data values	Measured or calculated data values relating to individual vehicles derived from detectors at the specified measurement site.		no

A.5.3.2 "IndividualVehicleMeasurements" package association roles

Table A.12— Associations of the "IndividualVehicleMeasurements" package

Class name	Role name	Designation	Definition	Multiplicity	Target
IndividualVehicleDataValues	arrivalTime	Arrival time	The time of the arrival of an individual vehicle in a detection zone.	0..1	DateTimeValue
	distanceGap	Distance gap	The measured distance between the front of this vehicle and the rear of the preceding one, in metres at the specified measurement site.	0..1	FloatingPointMetreDistanceValue
	distanceHeadway	Distance headway	The measured distance between the front (respectively back) of this vehicle and the front (respectively back) of the preceding vehicle at the specified measurement site.	0..1	FloatingPointMetreDistanceValue
	exitTime	Exit time	The time when an individual vehicle leaves a detection zone.	0..1	DateTimeValue

Class name	Role name	Designation	Definition	Multiplicity	Target
	individualVehicleSpeed	Individual vehicle speed	The measured speed of the individual vehicle at the specified measurement site.	0..1	SpeedValue
	passageDurationTime	Passage duration time	The time elapsed between an individual vehicle entering a detection zone and exiting the same detection zone as detected by entry and exit sensors.	0..1	DurationValue
	presenceDurationTime	Presence duration time	The period of time during which a vehicle activates a presence sensor.	0..1	DurationValue
	timeGap	Time gap	The time interval between the arrival of this vehicle's front at a point on the roadway, and that of the departure of the rear of the preceding one.	0..1	DurationValue
	timeHeadway	Time headway	The measured time interval between this vehicle's arrival at (or departure from) a point on the roadway, and that of the preceding one.	0..1	DurationValue

A.5.3.3 “IndividualVehicleMeasurements” package attributes

There are no defined attributes in the “IndividualVehicleMeasurements” package.

A.5.4 “MeasuredDataPublication” package

A.5.4.1 “MeasuredDataPublication” package classes

Table A.13— Classes of the “MeasuredDataPublication” package

Class name	Designation	Definition	Stereotype	Abstract
LocationCharacteristicsOverride	Location characteristics override	Location characteristics which override values set in the referenced measurement point.		no
MeasuredDataPublication	Measured data publication	A publication containing one or more measurement data sets, each set being measured at a single measurement site.		no
MeasuredValue	Measured value	Contains optional characteristics for the specific measured value (indexed to correspond with the defined characteristics of the measurement at the referenced measurement site) which override the static characteristics defined in the MeasurementSiteTable.		no
SiteMeasurements	Site measurements	A measurement data set derived from a specific measurement site.		no

A.5.4.2 “MeasuredDataPublication” package association roles

There are no defined association roles in the “MeasuredDataPublication” package.

A.5.4.3 “MeasuredDataPublication” package attributes

Table A.14— Attributes of the “MeasuredDataPublication” package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
LocationCharacteristicsOverride	measurementLanesOverride	Measurement lanes override	Overrides for this single measured value instance the lane(s) defined for the set of measurements.	0..1	LaneEnum
	reversedFlow	Reversed flow	Indicates that the direction of flow for the measured lane(s) is the reverse of the normal direction of traffic flow. Default is “no”, which indicates traffic flow is in the normal sense as defined by the referenced measurement point.	0..1	Boolean
MeasuredDataPublication	measurementSiteTableReference	Measurement site table reference	A reference to a versioned Measurement Site table.	1..1	VersionedReference

Class name	Attribute name	Designation	Definition	Multiplicity	Type
MeasuredValue	measurementEquipmentTypeUsed	Measurement equipment type used	The type of equipment used to gather the raw information from which the data values are determined, e.g. 'loop', 'ANPR' (automatic number plate recognition) or 'urban traffic management system' (such as SCOOT).	0..1	MultilingualString
SiteMeasurements	measurementSiteReference	Measurement site reference	A reference to a versioned measurement site record defined in a Measurement Site table.	1..1	VersionedReference
	measurementTimeDefault	Measurement time default	The time associated with the set of measurements. It may be the time of the beginning, the end or the middle of the measurement period.	1..1	DateTime

A.5.5 “TrafficConcentration” package

A.5.5.1 “TrafficConcentration” package classes

Table A.15— Classes of the “TrafficConcentration” package

Class name	Designation	Definition	Stereotype	Abstract
TrafficConcentration	Traffic concentration	Averaged measurements or calculations of traffic concentration.		no

A.5.5.2 "TrafficConcentration" package association roles

Table A.16— Associations of the "TrafficConcentration" package

Class name	Role name	Designation	Definition	Multiplicity	Target
TrafficConcentration	concentration	Concentration	An averaged measurement or calculation of the concentration of vehicles at the specified measurement site.	0..1	ConcentrationOfVehiclesValue
	occupancy	Occupancy	An averaged measurement or calculation of the percentage of time that a section of road at the specified measurement site is occupied by vehicles.	0..1	PercentageValue

A.5.5.3 "TrafficConcentration" package attributes

There are no defined attributes in the "TrafficConcentration" package.

A.5.6 "TrafficData" package

A.5.6.1 "TrafficData" package classes

Table A.17— Classes of the "TrafficData" package

Class name	Designation	Definition	Stereotype	Abstract
TrafficData	Traffic data	Measured or derived values relating to traffic or individual vehicle movements on a specific section or at a specific point on the road network.		yes

A.5.6.2 “TrafficData” package association roles

Table A.18— Associations of the “TrafficData” package

Class name	Role name	Designation	Definition	Multiplicity	Target
TrafficData	forVehiclesWithCharacteristicsOf	For vehicles with characteristics of	Used to define the vehicle characteristics to which the TrafficValue is applicable primarily in Elaborated Data Publications, but may also be used in Measured Data Publications to override vehicle characteristics defined for the measurement site.	0..1	VehicleCharacteristics

A.5.6.3 “TrafficData” package attributes

There are no defined attributes in the “TrafficData” package.

A.5.7 “TrafficFlow” package

A.5.7.1 “TrafficFlow” package classes

Table A.19— Classes of the “TrafficFlow” package

Class name	Designation	Definition	Stereotype	Abstract
TrafficFlow	Traffic flow	Averaged measurements or calculations of traffic flow rates.		no

A.5.7.2 “TrafficFlow” package association roles

Table A.20— Associations of the “TrafficFlow” package

Class name	Role name	Designation	Definition	Multiplicity	Target
TrafficFlow	axleFlow	Axle flow	An averaged measurement or calculation of flow rate defined in terms of the number of vehicle axles passing the specified measurement site.	0..1	AxleFlowValue
	pcuFlow	PCU flow	An averaged measurement or calculation of flow rate defined in terms of the number of passenger car units passing the specified measurement site.	0..1	PcuFlowValue
	percentageLongVehicles	Percentage long vehicles	An averaged measurement or calculation of the percentage of long vehicles contained in the traffic flow at the specified measurement site.	0..1	PercentageValue
	vehicleFlow	Vehicle flow	An averaged measurement of flow rate defined in terms of the number of vehicles passing the specified measurement site.	0..1	VehicleFlowValue

A.5.7.3 “TrafficFlow” package attributes

There are no defined attributes in the “TrafficFlow” package.

A.5.8 “TrafficHeadway” package

A.5.8.1 “TrafficHeadway” package classes

Table A.21— Classes of the “TrafficHeadway” package

Class name	Designation	Definition	Stereotype	Abstract
TrafficHeadway	Traffic headway	Averaged measurements or calculations of traffic headway, i.e. the distance or time interval between the front of a vehicle and the front of the vehicle immediately following it.		no

A.5.8.2 "TrafficHeadway" package association roles

Table A.22— Associations of the "TrafficHeadway" package

Class name	Role name	Designation	Definition	Multiplicity	Target
TrafficHeadway	averageDistanceHeadway	Average distance headway	The average distance between the front of a vehicle and the front of the preceding vehicle immediately following it, averaged for all vehicles within a defined measurement period at the specified measurement site.	0..1	FloatingPointMetreDistanceValue
	averageTimeHeadway	Average time headway	The average time difference between the front of a vehicle and the front of the vehicle immediately following it, averaged for all vehicles within a defined measurement period at the specified measurement site.	0..1	DurationValue

A.5.8.3 "TrafficHeadway" package attributes

There are no defined attributes in the "TrafficHeadway" package.

A.5.9 "TrafficSpeed" package

A.5.9.1 "TrafficSpeed" package classes

Table A.23— Classes of the "TrafficSpeed" package

Class name	Designation	Definition	Stereotype	Abstract
SpeedPercentile	Speed percentile	Details of percentage (from an observation set) of vehicles whose speeds fall below a stated value.		no
TrafficSpeed	Traffic speed	Averaged measurements or calculations of traffic speed.		no

A.5.9.2 “TrafficSpeed” package association roles

Table A.24— Associations of the “TrafficSpeed” package

Class name	Role name	Designation	Definition	Multiplicity	Target
SpeedPercentile	speedPercentile	Speed percentile	The speed below which the associated percentage of vehicles in the measurement set are travelling at.	1..1	SpeedValue
	vehiclePercentage	Vehicle percentage	The percentage of vehicles from the observation set whose speeds fall below the stated speed (speedPercentile).	1..1	PercentageValue
TrafficSpeed	averageVehicleSpeed	Average vehicle speed	An averaged measurement or calculation of the speed of vehicles at the specified location.	0..1	SpeedValue

A.5.9.3 “TrafficSpeed” package attributes

There are no defined attributes in the “TrafficSpeed” package.

A.5.10 “TrafficStatus” package

A.5.10.1 “TrafficStatus” package classes

Table A.25— Classes of the “TrafficStatus” package

Class name	Designation	Definition	Stereotype	Abstract
TrafficStatus	Traffic status	The status of traffic conditions on a specific section or at a specific point on the road network.		no

A.5.10.2 “TrafficStatus” package association roles

Table A.26— Associations of the “TrafficStatus” package

Class name	Role name	Designation	Definition	Multiplicity	Target
TrafficStatus	trafficStatus	Traffic status	Status of traffic conditions on the identified section of road in the specified direction.	0..1	TrafficStatusValue

A.5.10.3 “TrafficStatus” package attributes

Table A.27— Attributes of the “TrafficStatus” package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
TrafficStatus	trafficTrendType	Traffic trend type	A characterization of the trend in the traffic conditions at the specified location and direction.	0..1	TrafficTrendType Enum

A.5.11 “TravelTimeData” package

A.5.11.1 “TravelTimeData” package classes

Table A.28— Classes of the “TravelTimeData” package

Class name	Designation	Definition	Stereotype	Abstract
TravelTimeData	Travel time data	Derived/computed travel time information relating to a linear section of the road network. When used within an ElaboratedData with the attribute 'forecast' set to 'true', the travel time is a forecast for a vehicle at the start of the specified location. When used within a MeasuredValue, or an ElaboratedData with the attribute 'forecast' set to 'false', the travel time is a calculation or measurement from vehicles at the end of the specified location		no

A.5.11.2 "TravelTimeData" package association roles

Table A.29— Associations of the "TravelTimeData" package

Class name	Role name	Designation	Definition	Multiplicity	Target
TravelTimeData	freeFlowSpeed	Free flow speed	The free flow speed expected under ideal conditions, corresponding to the freeFlowTravelTime.	0..1	SpeedValue
	freeFlowTravelTime	Free flow travel time	The travel time which would be expected under ideal free flow conditions.	0..1	DurationValue
	normallyExpectedTravelTime	Normally expected travel time	The travel time which is expected for the given period (e.g. date/time, holiday status etc.) and any known quasi-static conditions (e.g. long term roadworks). This value is derived from historical analysis.	0..1	DurationValue
	travelTime	Travel time	Derived/computed travel time information relating to a specific group of locations.	0..1	DurationValue

A.5.11.3 "TravelTimeData" package attributes

Table A.30— Attributes of the "TravelTimeData" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
TravelTimeData	travelTimeTrendType	Travel time trend type	The current trend in the travel time between the defined locations in the specified direction.	0..1	TravelTimeTrendTypeEnum
	travelTimeType	Travel time type	Indication of the way in which the travel time is derived.	0..1	TravelTimeTypeEnum
	vehicleType	Vehicle type	Vehicle type.	0..*	VehicleTypeEnum

A.5.12 “WeatherData” package

A.5.12.1 “WeatherData” package classes

Table A.31— Classes of the “WeatherData” package

Class name	Designation	Definition	Stereotype	Abstract
HumidityInformation	Humidity information	Measurements of atmospheric humidity.		no
PollutionInformation	Pollution information	Measurements of atmospheric pollution.		no
PrecipitationInformation	Precipitation information	Measurements of precipitation.		no
RoadSurfaceConditionInformation	Road surface condition information	Measurements of road surface conditions which are related to the weather.		no
TemperatureInformation	Temperature information	Measurements of atmospheric temperature.		no
VisibilityInformation	Visibility information	Measurements of atmospheric visibility.		no
WeatherData	Weather data	Measured or derived values relating to the weather at a specific location or locations.		yes
WindInformation	Wind information	Measurements of wind conditions.		no

A.5.12.2 “WeatherData” package association roles

There are no defined association roles in the “WeatherData” package.

A.5.12.3 “WeatherData” package attributes

Table A.32— Attributes of the “WeatherData” package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
PrecipitationInformation	noPrecipitation	No precipitation	Indication of whether precipitation is present or not. True indicates there is no precipitation.	0..1	Boolean
RoadSurfaceConditionInformation	weatherRelatedRoadConditionType	Weather related road condition type	The type of road surface condition that is related to the weather which is affecting the driving conditions.	0..*	WeatherRelatedRoadConditionTypeEnum

A.6 Data Dictionary of < < datatypes > > for “Measured Data Publication”

The definition of all data types which are used in the “Measured Data Publication” is already contained in CEN/TS 16157-3.

A.7 Data Dictionary of < < enumerations > > for “Measured Data Publication”

This clause contains the definitions of all enumerations which are used in the “Measured Data Publication”.

A.7.1 The < < enumeration > > “ElaboratedDataFaultEnum”

Types of elaborated data faults.

Table A.33— Values contained in the enumeration “ElaboratedDataFaultEnum”

Enumerated value name	Designation	Definition
intermittentDataValues	Intermittent data values	Data values are being produced at intermittent intervals which are not consistent with the expected reporting interval.
noDataValuesAvailable	No data values available	No elaborated data values are currently available.
other	Other	Other than as defined in this enumeration.
spuriousUnreliableDataValues	Spurious unreliable data values	Spurious or unreliable data values are being produced.
unspecifiedOrUnknownFault	Unspecified or unknown fault	An unspecified or unknown fault exists in the process which is generating elaborated data.

A.7.2 The < < enumeration > > “FaultSeverityEnum”

Classification of the severity of faults.

Table A.34— Values contained in the enumeration “FaultSeverityEnum”

Enumerated value name	Designation	Definition
high	High	The fault is of high severity which will render the equipment unusable or any data generated by the equipment to be of no value.
low	Low	The fault is of low severity and has only limited impact on the usability of the equipment or the value of the data generated by the equipment.
medium	Medium	The fault is of medium severity which will significantly limit the usability of the equipment or devalue the usefulness of the data generated by the equipment.
unknown	Unknown	The fault is of unknown severity and hence its effect on the usability of the equipment or the usefulness of the data generated by the equipment cannot be assessed.

A.7.3 The < < enumeration > > “MeasurementEquipmentFaultEnum”

Types of measurement equipment faults.

Table A.35— Values contained in the enumeration “MeasurementEquipmentFaultEnum”

Enumerated value name	Designation	Definition
intermittentDataValues	Intermittent data values	Data values are being produced at intermittent intervals which are not consistent with the expected reporting interval.
noDataValuesAvailable	No data values available	No measured data values are currently available.
other	Other	Other than as defined in this enumeration.
spuriousUnreliableDataValues	Spurious unreliable data values	Spurious or unreliable data values are being produced.
unspecifiedOrUnknownFault	Unspecified or unknown fault	An unspecified or unknown fault exists in the measurement equipment.

A.7.4 The < < enumeration > > “TimePrecisionEnum”

List of precisions to which times can be given.

Table A.36— Values contained in the enumeration “TimePrecisionEnum”

Enumerated value name	Designation	Definition
halfHour	Half hour	Time given to the nearest half hour.
hour	Hour	Time given to the nearest hour.
minute	Minute	Time given to the nearest minute.
quarterHour	Quarter hour	Time given to the nearest quarter hour.
second	Second	Time given to the nearest second.
tenthsOfSecond	Tenths of second	Time given to the nearest tenth of a second.

A.7.5 The < < enumeration > > “TravelTimeTrendTypeEnum”

List of terms used to describe the trend in travel times.

Table A.37— Values contained in the enumeration “TravelTimeTrendTypeEnum”

Enumerated value name	Designation	Definition
decreasing	Decreasing	Travel times are decreasing.
increasing	Increasing	Travel times are increasing.
stable	Stable	Travel times are stable.

A.7.6 The < < enumeration > > “TravelTimeTypeEnum”

List of ways in which travel times are derived.

Table A.38— Values contained in the enumeration “TravelTimeTypeEnum”

Enumerated value name	Designation	Definition
best	Best	Travel time is derived from the best out of a monitored sample.
estimated	Estimated	Travel time is based on a profile of past observations, or a model, without use of current measurements
instantaneous	Instantaneous	Travel time is the measured time for a journey just completed
reconstituted	Reconstituted	Travel time is based on a combination of current measurements and a historic profile or traffic model.

A.8 Data Dictionary for “Elaborated Data Publication”

A.8.1 “ElaboratedData” package

A.8.1.1 “ElaboratedData” package classes

Table A.39— Classes of the “ElaboratedData” package

Class name	Designation	Definition	Stereotype	Abstract
ElaboratedData	Elaborated data	An instance of data which is derived/computed from one or more measurements over a period of time. It may be a current value or a forecast value predicted from historical measurements.		no

A.8.1.2 “ElaboratedData” package association roles

There are no defined association roles in the “ElaboratedData” package.

A.8.1.3 “ElaboratedData” package attributes

Table A.40— Attributes of the “ElaboratedData” package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
ElaboratedData	forecast	Forecast	Indication of whether this elaborated data are a forecast (true = forecast).	0..1	Boolean

A.8.2 “ElaboratedDataPublication” package

A.8.2.1 “ElaboratedDataPublication” package classes

Table A.41— Classes of the “ElaboratedDataPublication” package

Class name	Designation	Definition	Stereotype	Abstract
ElaboratedDataPublication	Elaborated data publication	A publication containing one or more elaborated data sets.		no
ReferenceSettings	Reference settings	Specification of the default value for traffic status on a group of predefined locations on the road network. Only when traffic status differs from this value at a location in the group need a value be sent.		no

A.8.2.2 “ElaboratedDataPublication” package association roles

There are no defined association roles in the “ElaboratedDataPublication” package.

A.8.2.3 “ElaboratedDataPublication” package attributes

Table A.42— Attributes of the “ElaboratedDataPublication” package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
ElaboratedDataPublication	forecastDefault	Forecast default	The default value for the publication of whether the elaborated data are a forecast (true = forecast).	0..1	Boolean
	periodDefault	Period default	The default value for the publication of the time elapsed between the beginning and the end of the sampling or measurement period. This item may differ from the unit attribute; e.g. an hourly flow can be estimated from a 5-min measurement period.	0..1	Seconds
	timeDefault	Time default	The default for the publication of the time at which the values have been computed/derived.	0..1	DateTime
ReferenceSettings	predefinedNonOrderedLocationGroupReference	Predefined non ordered location group reference	A reference to a versioned instance of a predefined non ordered location group as specified in a PredefinedLocationsPublication.	0..1	VersionedReference
	trafficStatusDefault	Traffic status default	The default value of traffic status that can be assumed to apply to the locations defined by the associated predefined location set.	0..1	TrafficStatusEnum

A.8.3 “Fault” package

A.8.3.1 “Fault” package classes

Table A.43— Classes of the “Fault” package

Class name	Designation	Definition	Stereotype	Abstract
ElaboratedDataFault	Elaborated data fault	Details of a fault which is being reported for the related elaborated data.		no
Fault	Fault	Information about a fault relating to a specific piece of equipment or process.		no

A.8.3.2 “Fault” package association roles

There are no defined association roles in the “Fault” package.

A.8.3.3 “Fault” package attributes

Table A.44— Attributes of the “Fault” package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
ElaboratedDataFault	elaboratedDataFault	Elaborated data fault	The type of fault which is being reported for the specified elaborated data.	1..1	ElaboratedDataFaultEnum
Fault	faultCreationTime	Fault creation time	The date and time at which the fault was originally recorded/reported.	0..1	DateTime
	faultDescription	Fault description	Textual description of the fault.	0..1	String
	faultIdentifier	Fault identifier	Unique identifier of the fault.	0..1	String
	faultLastUpdateTime	Fault last update time	The date and time at which the fault information as specified in this instance was last updated.	1..1	DateTime
	faultSeverity	Fault severity	The severity of the fault in terms of how it affects the usability of the equipment or the reliability of the data generated by the equipment.	0..1	FaultSeverityEnum

A.9 Data Dictionary of < < datatypes > > for “Elaborated Data Publication”

The definition of all data types which are used in the “Elaborated Data Publication” is already contained in CEN/TS 16157-3.

Annex B
(normative)

Referenced XML Schema for “MeasurementSiteTablePublication”

B.1 Overview

This Annex shall be used when using an XML encoding.

As specified in CEN/TS 16157-1 this schema may be extended by use of Extensions. Such extensions shall be done in a manner conformant to the requirements specified in CEN/TS 16157-1 — Clause 8 and Annex D.

Supplied data claiming conformance to this Part and specifically this Annex shall positively validate against the schema specified in this Annex including any permissible Extensions.

B.2 Schema

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attributeFormDefault = ”unqualified” version = ”2.0” >
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        <xs:enumeration value="lane2"/ >
        <xs:enumeration value="lane3"/ >
        <xs:enumeration value="lane4"/ >
        <xs:enumeration value="lane5"/ >
        <xs:enumeration value="lane6"/ >
        <xs:enumeration value="lane7"/ >
        <xs:enumeration value="lane8"/ >
        <xs:enumeration value="lane9"/ >
        <xs:enumeration value="layBy"/ >
        <xs:enumeration value="leftHandTurningLane"/ >
        <xs:enumeration value="leftLane"/ >
        <xs:enumeration value="localTrafficLane"/ >
        <xs:enumeration value="middleLane"/ >
        <xs:enumeration value="opposingLanes"/ >
```

```
            <xs:enumeration value="overtakingLane"/ >
            <xs:enumeration value="rightHandTurningLane"/ >
            <xs:enumeration value="rightLane"/ >
            <xs:enumeration value="rushHourLane"/ >
            <xs:enumeration value="setDownArea"/ >
            <xs:enumeration value="slowVehicleLane"/ >
            <xs:enumeration value="throughTrafficLane"/ >
            <xs:enumeration value="tidalFlowLane"/ >
            <xs:enumeration value="turningLane"/ >
            <xs:enumeration value="verge"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="LengthCharacteristic" >
         <xs:sequence>
            <xs:element name="comparisonOperator" type = "D2LogicalModel:ComparisonOperatorEnum"/ >
            <xs:element name="vehicleLength" type = "D2LogicalModel:MetresAsFloat"/ >
            <xs:element name="lengthCharacteristicExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:simpleType name="LoadTypeEnum" >
         <xs:restriction base="xs:string" >
            <xs:enumeration value="abnormalLoad"/ >
            <xs:enumeration value="ammunition"/ >
            <xs:enumeration value="chemicals"/ >
            <xs:enumeration value="combustibleMaterials"/ >
            <xs:enumeration value="corrosiveMaterials"/ >
            <xs:enumeration value="debris"/ >
            <xs:enumeration value="empty"/ >
            <xs:enumeration value="explosiveMaterials"/ >
            <xs:enumeration value="extraHighLoad"/ >
            <xs:enumeration value="extraLongLoad"/ >
            <xs:enumeration value="extraWideLoad"/ >
            <xs:enumeration value="fuel"/ >
            <xs:enumeration value="glass"/ >
            <xs:enumeration value="goods"/ >
            <xs:enumeration value="hazardousMaterials"/ >
            <xs:enumeration value="liquid"/ >
            <xs:enumeration value="livestock"/ >
```

```
        <xs:enumeration value="materials"/ >
        <xs:enumeration value="materialsDangerousForPeople"/ >
        <xs:enumeration value="materialsDangerousForTheEnvironment"/ >
        <xs:enumeration value="materialsDangerousForWater"/ >
        <xs:enumeration value="oil"/ >
        <xs:enumeration value="ordinary"/ >
        <xs:enumeration value="perishableProducts"/ >
        <xs:enumeration value="petrol"/ >
        <xs:enumeration value="pharmaceuticalMaterials"/ >
        <xs:enumeration value="radioactiveMaterials"/ >
        <xs:enumeration value="refuse"/ >
        <xs:enumeration value="toxicMaterials"/ >
        <xs:enumeration value="vehicles"/ >
        <xs:enumeration value="other"/ >
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="MeasuredOrDerivedDataTypeEnum" >
    <xs:restriction base="xs:string" >
        <xs:enumeration value="humidityInformation"/ >
        <xs:enumeration value="individualVehicleMeasurements"/ >
        <xs:enumeration value="pollutionInformation"/ >
        <xs:enumeration value="precipitationInformation"/ >
        <xs:enumeration value="pressureInformation"/ >
        <xs:enumeration value="radiationInformation"/ >
        <xs:enumeration value="roadSurfaceConditionInformation"/ >
        <xs:enumeration value="temperatureInformation"/ >
        <xs:enumeration value="trafficConcentration"/ >
        <xs:enumeration value="trafficFlow"/ >
        <xs:enumeration value="trafficHeadway"/ >
        <xs:enumeration value="trafficSpeed"/ >
        <xs:enumeration value="trafficStatusInformation"/ >
        <xs:enumeration value="travelTimeInformation"/ >
        <xs:enumeration value="visibilityInformation"/ >
        <xs:enumeration value="windInformation"/ >
    </xs:restriction>
</xs:simpleType>
<xs:complexType name="MeasurementSiteRecord" >
    <xs:sequence>
```

```
          <xs:element name="measurementSiteRecordVersionTime" type = "D2LogicalModel:DateTime" minOccurs = "0"/ >
          <xs:element name="computationMethod" type = "D2LogicalModel:ComputationMethodEnum" minOccurs = "0"/ >
          <xs:element name="measurementEquipmentReference" type = "D2LogicalModel:String" minOccurs = "0"/ >
          <xs:element name="measurementEquipmentTypeUsed" type = "D2LogicalModel:MultilingualString"
minOccurs = "0"/ >
          <xs:element name="measurementSiteName" type = "D2LogicalModel:MultilingualString" minOccurs = "0"/ >
          <xs:element name="measurementSiteNumberOfLanes" type = "D2LogicalModel:NonNegativeInteger"
minOccurs = "0"/ >
          <xs:element name="measurementSiteIdentification" type = "D2LogicalModel:String" minOccurs = "0"/ >
          <xs:element name="measurementSide" type = "D2LogicalModel:DirectionEnum" minOccurs = "0"/ >
          <xs:element name="measurementSpecificCharacteristics"
type = "D2LogicalModel:_MeasurementSiteRecordIndexMeasurementSpecificCharacteristics" minOccurs = "0"
maxOccurs = "unbounded"/ >
          <xs:element name="measurementSiteLocation" type = "D2LogicalModel:GroupOfLocations"/ >
          <xs:element name="measurementSiteRecordExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
       </xs:sequence>
       <xs:attribute name="id" type = "xs:string" use = "required"/ >
       <xs:attribute name="version" type = "xs:string" use = "required"/ >
    </xs:complexType>
    <xs:complexType name="MeasurementSiteTable" >
       <xs:sequence>
          <xs:element name="measurementSiteTableIdentification" type = "D2LogicalModel:String" minOccurs = "0"/ >
          <xs:element name="measurementSiteRecord" type = "D2LogicalModel:MeasurementSiteRecord"
maxOccurs = "unbounded"/ >
          <xs:element name="measurementSiteTableExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
       </xs:sequence>
       <xs:attribute name="id" type = "xs:string" use = "required"/ >
       <xs:attribute name="version" type = "xs:string" use = "required"/ >
    </xs:complexType>
    <xs:complexType name="MeasurementSiteTablePublication" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:PayloadPublication" >
             <xs:sequence>
                <xs:element name="headerInformation" type = "D2LogicalModel:HeaderInformation"/ >
                <xs:element name="measurementSiteTable" type = "D2LogicalModel:MeasurementSiteTable"
maxOccurs = "unbounded"/ >
```

```
                <xs:element name="measurementSiteTablePublicationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="MeasurementSpecificCharacteristics" >
      <xs:sequence>
         <xs:element name="accuracy" type = "D2LogicalModel:Percentage" minOccurs = "0"/ >
         <xs:element name="period" type = "D2LogicalModel:Seconds" minOccurs = "0"/ >
         <xs:element name="smoothingFactor" type = "D2LogicalModel:Float" minOccurs = "0"/ >
         <xs:element name="specificLane" type = "D2LogicalModel:LaneEnum" minOccurs = "0"/ >
         <xs:element name="specificMeasurementValueType"
type = "D2LogicalModel:MeasuredOrDerivedDataTypeEnum"/ >
         <xs:element name="specificVehicleCharacteristics" type = "D2LogicalModel:VehicleCharacteristics"
minOccurs = "0"/ >
         <xs:element name="measurementSpecificCharacteristicsExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:simpleType name="MetresAsFloat" >
      <xs:restriction base="D2LogicalModel:Float"/ >
   </xs:simpleType>
   <xs:complexType name="MultilingualString" >
      <xs:sequence>
         <xs:element name="values" >
            <xs:complexType>
               <xs:sequence>
                  <xs:element name="value" type = "D2LogicalModel:MultilingualStringValue"
maxOccurs = "unbounded"/ >
               </xs:sequence>
            </xs:complexType>
         </xs:element>
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="MultilingualStringValue" >
      <xs:simpleContent>
         <xs:extension base="D2LogicalModel:MultilingualStringValueType" >
```

```
            <xs:attribute name="lang" type = "xs:language"/ >
         </xs:extension>
      </xs:simpleContent>
   </xs:complexType>
   <xs:simpleType name="MultilingualStringValueType" >
      <xs:restriction base="xs:string" >
         <xs:maxLength value="1024"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="NonNegativeInteger" >
      <xs:restriction base="xs:nonNegativeInteger"/ >
   </xs:simpleType>
   <xs:complexType name="NumberOfAxlesCharacteristic" >
      <xs:sequence>
         <xs:element name="comparisonOperator" type = "D2LogicalModel:ComparisonOperatorEnum"/ >
         <xs:element name="numberOfAxles" type = "D2LogicalModel:NonNegativeInteger"/ >
         <xs:element name="numberOfAxlesCharacteristicExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="PayloadPublication" abstract = "true" >
      <xs:sequence>
         <xs:element name="payloadPublicationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:simpleType name="Percentage" >
      <xs:restriction base="D2LogicalModel:Float"/ >
   </xs:simpleType>
   <xs:simpleType name="Seconds" >
      <xs:restriction base="D2LogicalModel:Float"/ >
   </xs:simpleType>
   <xs:simpleType name="String" >
      <xs:restriction base="xs:string" >
         <xs:maxLength value="1024"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="Tonnes" >
      <xs:restriction base="D2LogicalModel:Float"/ >
```

```
    </xs:simpleType>
    <xs:simpleType name="UrgencyEnum" >
       <xs:restriction base="xs:string" >
          <xs:enumeration value="extremelyUrgent"/ >
          <xs:enumeration value="urgent"/ >
          <xs:enumeration value="normalUrgency"/ >
       </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="VehicleCharacteristics" >
       <xs:sequence>
          <xs:element name="fuelType" type = "D2LogicalModel:FuelTypeEnum" minOccurs = "0"/ >
          <xs:element name="loadType" type = "D2LogicalModel:LoadTypeEnum" minOccurs = "0"/ >
          <xs:element name="vehicleEquipment" type = "D2LogicalModel:VehicleEquipmentEnum" minOccurs = "0"/ >
          <xs:element name="vehicleType" type = "D2LogicalModel:VehicleTypeEnum" minOccurs = "0"
maxOccurs = "unbounded"/ >
          <xs:element name="vehicleUsage" type = "D2LogicalModel:VehicleUsageEnum" minOccurs = "0"/ >
          <xs:element name="grossWeightCharacteristic" type = "D2LogicalModel:GrossWeightCharacteristic"
minOccurs = "0" maxOccurs = "2"/ >
          <xs:element name="heightCharacteristic" type = "D2LogicalModel:HeightCharacteristic" minOccurs = "0"
maxOccurs = "2"/ >
          <xs:element name="lengthCharacteristic" type = "D2LogicalModel:LengthCharacteristic" minOccurs = "0"
maxOccurs = "2"/ >
          <xs:element name="widthCharacteristic" type = "D2LogicalModel:WidthCharacteristic" minOccurs = "0"
maxOccurs = "2"/ >
          <xs:element name="heaviestAxleWeightCharacteristic"
type = "D2LogicalModel:HeaviestAxleWeightCharacteristic" minOccurs = "0" maxOccurs = "2"/ >
          <xs:element name="numberOfAxlesCharacteristic" type = "D2LogicalModel:NumberOfAxlesCharacteristic"
minOccurs = "0" maxOccurs = "2"/ >
          <xs:element name="vehicleCharacteristicsExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
       </xs:sequence>
    </xs:complexType>
    <xs:simpleType name="VehicleEquipmentEnum" >
       <xs:restriction base="xs:string" >
          <xs:enumeration value="notUsingSnowChains"/ >
          <xs:enumeration value="notUsingSnowChainsOrTyres"/ >
          <xs:enumeration value="snowChainsInUse"/ >
          <xs:enumeration value="snowTyresInUse"/ >
```

```
            <xs:enumeration value="snowChainsOrTyresInUse"/ >
            <xs:enumeration value="withoutSnowTyresOrChainsOnBoard"/ >
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="VehicleTypeEnum" >
        <xs:restriction base="xs:string" >
            <xs:enumeration value="agriculturalVehicle"/ >
            <xs:enumeration value="anyVehicle"/ >
            <xs:enumeration value="articulatedVehicle"/ >
            <xs:enumeration value="bicycle"/ >
            <xs:enumeration value="bus"/ >
            <xs:enumeration value="car"/ >
            <xs:enumeration value="caravan"/ >
            <xs:enumeration value="carOrLightVehicle"/ >
            <xs:enumeration value="carWithCaravan"/ >
            <xs:enumeration value="carWithTrailer"/ >
            <xs:enumeration value="constructionOrMaintenanceVehicle"/ >
            <xs:enumeration value="fourWheelDrive"/ >
            <xs:enumeration value="highSidedVehicle"/ >
            <xs:enumeration value="lorry"/ >
            <xs:enumeration value="moped"/ >
            <xs:enumeration value="motorcycle"/ >
            <xs:enumeration value="motorcycleWithSideCar"/ >
            <xs:enumeration value="motorscooter"/ >
            <xs:enumeration value="tanker"/ >
            <xs:enumeration value="threeWheeledVehicle"/ >
            <xs:enumeration value="trailer"/ >
            <xs:enumeration value="tram"/ >
            <xs:enumeration value="twoWheeledVehicle"/ >
            <xs:enumeration value="van"/ >
            <xs:enumeration value="vehicleWithCatalyticConverter"/ >
            <xs:enumeration value="vehicleWithoutCatalyticConverter"/ >
            <xs:enumeration value="vehicleWithCaravan"/ >
            <xs:enumeration value="vehicleWithTrailer"/ >
            <xs:enumeration value="withEvenNumberedRegistrationPlates"/ >
            <xs:enumeration value="withOddNumberedRegistrationPlates"/ >
            <xs:enumeration value="other"/ >
        </xs:restriction>
    </xs:simpleType>
```

```
   <xs:simpleType name=”VehicleUsageEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”agricultural”/ >
         <xs:enumeration value=”commercial”/ >
         <xs:enumeration value=”emergencyServices”/ >
         <xs:enumeration value=”military”/ >
         <xs:enumeration value=”nonCommercial”/ >
         <xs:enumeration value=”patrol”/ >
         <xs:enumeration value=”recoveryServices”/ >
         <xs:enumeration value=”roadMaintenanceOrConstruction”/ >
         <xs:enumeration value=”roadOperator”/ >
         <xs:enumeration value=”taxi”/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name=”WidthCharacteristic” >
      <xs:sequence>
         <xs:element name=”comparisonOperator” type = ”D2LogicalModel:ComparisonOperatorEnum”/ >
         <xs:element name=”vehicleWidth” type = ”D2LogicalModel:MetresAsFloat”/ >
         <xs:element name=”widthCharacteristicExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
      </xs:sequence>
   </xs:complexType>
</xs:schema>
```

Annex C
(normative)

Referenced XML Schema for “MeasuredDataPublication”

C.1 Overview

This Annex shall be used when using an XML encoding.

As specified in CEN/TS 16157-1 this schema may be extended by use of Extensions. Such extensions shall be done in a manner conformant to the requirements specified in CEN/TS 16157-1, Clause 9 and Annex D.

Supplied data claiming conformance to this Part and specifically this Annex shall positively validate against the schema specified in this Annex including any permissible Extensions.

C.2 Schema

```
<?xml version=”1.0” encoding = ”utf-8” standalone = ”no”? >
<xs:schema xmlns:D2LogicalModel=”http://datex2.eu/schema/2/2_0” xmlns:xs = ”http://www.w3.org/2001/XMLSchema”
targetNamespace = ”http://datex2.eu/schema/2/2_0” elementFormDefault = ”qualified”
attributeFormDefault = ”unqualified” version = ”2.0” >
   <xs:complexType name=”_ExtensionType” >
      <xs:sequence>
         <xs:any namespace=”##any” processContents = ”lax” minOccurs = ”0” maxOccurs = ”unbounded”/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name=”_MeasurementSiteRecordVersionedReference” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:VersionedReference” >
            <xs:attribute name=”targetClass” use = ”required” fixed = ”MeasurementSiteRecord”/ >
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name=”_MeasurementSiteTableVersionedReference” >
      <xs:complexContent>
```

```
            <xs:extension base="D2LogicalModel:VersionedReference" >
               <xs:attribute name="targetClass" use = "required" fixed = "MeasurementSiteTable"/ >
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="_SiteMeasurementsIndexMeasuredValue" >
         <xs:sequence>
            <xs:element name="measuredValue" type = "D2LogicalModel:MeasuredValue"/ >
         </xs:sequence>
         <xs:attribute name="index" type = "xs:int" use = "required"/ >
      </xs:complexType>
      <xs:simpleType name="AngleInDegrees" >
         <xs:restriction base="D2LogicalModel:NonNegativeInteger"/ >
      </xs:simpleType>
      <xs:complexType name="ApplicationRateValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
                  <xs:element name="applicationRate" type = "D2LogicalModel:IntensityKilogramsPerSquareMetre"/ >
                  <xs:element name="applicationRateValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:simpleType name="AreaOfInterestEnum" >
         <xs:restriction base="xs:string" >
            <xs:enumeration value="continentWide"/ >
            <xs:enumeration value="national"/ >
            <xs:enumeration value="neighbouringCountries"/ >
            <xs:enumeration value="notSpecified"/ >
            <xs:enumeration value="regional"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="AxleFlowValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
```

```
                <xs:element name="axleFlowRate" type = "D2LogicalModel:AxlesPerHour"/ >
                <xs:element name="axleFlowValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="AxlesPerHour" >
       <xs:restriction base="D2LogicalModel:NonNegativeInteger"/ >
    </xs:simpleType>
    <xs:complexType name="BasicData" abstract = "true" >
       <xs:sequence>
          <xs:element name="measurementOrCalculationPeriod" type = "D2LogicalModel:Seconds" minOccurs = "0"/ >
          <xs:element name="measurementOrCalculationTime" type = "D2LogicalModel:DateTime" minOccurs = "0"/ >
          <xs:element name="pertinentLocation" type = "D2LogicalModel:GroupOfLocations" minOccurs = "0"/ >
          <xs:element name="basicDataExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
       </xs:sequence>
       <xs:attribute name="measurementOrCalculatedTimePrecision" type = "D2LogicalModel:TimePrecisionEnum"
use = "optional"/ >
    </xs:complexType>
    <xs:simpleType name="Boolean" >
       <xs:restriction base="xs:boolean"/ >
    </xs:simpleType>
    <xs:simpleType name="ComparisonOperatorEnum" >
       <xs:restriction base="xs:string" >
          <xs:enumeration value="equalTo"/ >
          <xs:enumeration value="greaterThan"/ >
          <xs:enumeration value="greaterThanOrEqualTo"/ >
          <xs:enumeration value="lessThan"/ >
          <xs:enumeration value="lessThanOrEqualTo"/ >
       </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="ConcentrationKilogramsPerCubicMetre" >
       <xs:restriction base="D2LogicalModel:Float"/ >
    </xs:simpleType>
    <xs:simpleType name="ConcentrationMicrogramsPerCubicMetre" >
       <xs:restriction base="D2LogicalModel:Float"/ >
    </xs:simpleType>
    <xs:complexType name="ConcentrationOfVehiclesValue" >
```

```
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:DataValue” >
            <xs:sequence>
               <xs:element name=”concentrationOfVehicles”
type = ”D2LogicalModel:ConcentrationVehiclesPerKilometre”/ >
               <xs:element name=”concentrationOfVehiclesValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”ConcentrationVehiclesPerKilometre” >
      <xs:restriction base=”D2LogicalModel:NonNegativeInteger”/ >
   </xs:simpleType>
   <xs:simpleType name=”ConfidentialityValueEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”internalUse”/ >
         <xs:enumeration value=”noRestriction”/ >
         <xs:enumeration value=”restrictedToAuthorities”/ >
         <xs:enumeration value=”restrictedToAuthoritiesAndTrafficOperators”/ >
         <xs:enumeration value=”restrictedToAuthoritiesTrafficOperatorsAndPublishers”/ >
         <xs:enumeration value=”restrictedToAuthoritiesTrafficOperatorsAndVms”/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name=”DataValue” abstract = ”true” >
      <xs:sequence>
         <xs:element name=”dataValueExtension” type = ”D2LogicalModel:_ExtensionType” minOccurs = ”0”/ >
      </xs:sequence>
   </xs:complexType>
   <xs:simpleType name=”DateTime” >
      <xs:restriction base=”xs:dateTime”/ >
   </xs:simpleType>
   <xs:complexType name=”DateTimeValue” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:DataValue” >
            <xs:sequence>
               <xs:element name=”dateTime” type = ”D2LogicalModel:DateTime”/ >
```

```
                <xs:element name="dateTimeValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="DirectionBearingValue" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:DataValue" >
             <xs:sequence>
                <xs:element name="directionBearing" type = "D2LogicalModel:AngleInDegrees"/ >
                <xs:element name="directionBearingValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="DirectionCompassEnum" >
       <xs:restriction base="xs:string" >
          <xs:enumeration value="east"/ >
          <xs:enumeration value="eastNorthEast"/ >
          <xs:enumeration value="eastSouthEast"/ >
          <xs:enumeration value="north"/ >
          <xs:enumeration value="northEast"/ >
          <xs:enumeration value="northNorthEast"/ >
          <xs:enumeration value="northNorthWest"/ >
          <xs:enumeration value="northWest"/ >
          <xs:enumeration value="south"/ >
          <xs:enumeration value="southEast"/ >
          <xs:enumeration value="southSouthEast"/ >
          <xs:enumeration value="southSouthWest"/ >
          <xs:enumeration value="southWest"/ >
          <xs:enumeration value="west"/ >
          <xs:enumeration value="westNorthWest"/ >
          <xs:enumeration value="westSouthWest"/ >
       </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="DirectionCompassValue" >
       <xs:complexContent>
```

```
          <xs:extension base="D2LogicalModel:DataValue" >
             <xs:sequence>
                <xs:element name="directionCompass" type = "D2LogicalModel:DirectionCompassEnum"/ >
                <xs:element name="directionCompassValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="DurationValue" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:DataValue" >
             <xs:sequence>
                <xs:element name="duration" type = "D2LogicalModel:Seconds"/ >
                <xs:element name="durationValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="ElaboratedDataFault" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:Fault" >
             <xs:sequence>
                <xs:element name="elaboratedDataFault" type = "D2LogicalModel:ElaboratedDataFaultEnum"/ >
                <xs:element name="elaboratedDataFaultExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="ElaboratedDataFaultEnum" >
       <xs:restriction base="xs:string" >
          <xs:enumeration value="intermittentDataValues"/ >
          <xs:enumeration value="noDataValuesAvailable"/ >
          <xs:enumeration value="spuriousUnreliableDataValues"/ >
          <xs:enumeration value="unspecifiedOrUnknownFault"/ >
          <xs:enumeration value="other"/ >
```

```
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name=”Fault” >
      <xs:sequence>
         <xs:element name=”faultIdentifier” type = ”D2LogicalModel:String” minOccurs = ”0”/ >
         <xs:element name=”faultDescription” type = ”D2LogicalModel:String” minOccurs = ”0”/ >
         <xs:element name=”faultCreationTime” type = ”D2LogicalModel:DateTime” minOccurs = ”0”/ >
         <xs:element name=”faultLastUpdateTime” type = ”D2LogicalModel:DateTime”/ >
         <xs:element name=”faultSeverity” type = ”D2LogicalModel:FaultSeverityEnum” minOccurs = ”0”/ >
         <xs:element name=”faultExtension” type = ”D2LogicalModel:_ExtensionType” minOccurs = ”0”/ >
      </xs:sequence>
   </xs:complexType>
   <xs:simpleType name=”FaultSeverityEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”low”/ >
         <xs:enumeration value=”medium”/ >
         <xs:enumeration value=”high”/ >
         <xs:enumeration value=”unknown”/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name=”Float” >
      <xs:restriction base=”xs:float”/ >
   </xs:simpleType>
   <xs:complexType name=”FloatingPointMetreDistanceValue” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:DataValue” >
            <xs:sequence>
               <xs:element name=”floatingPointMetreDistance” type = ”D2LogicalModel:MetresAsFloat”/ >
               <xs:element name=”floatingPointMetreDistanceValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”FuelTypeEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”battery”/ >
         <xs:enumeration value=”biodiesel”/ >
         <xs:enumeration value=”diesel”/ >
```

```
            <xs:enumeration value="dieselBatteryHybrid"/ >
            <xs:enumeration value="ethanol"/ >
            <xs:enumeration value="hydrogen"/ >
            <xs:enumeration value="liquidGas"/ >
            <xs:enumeration value="lpg"/ >
            <xs:enumeration value="methane"/ >
            <xs:enumeration value="petrol"/ >
            <xs:enumeration value="petrolBatteryHybrid"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="GrossWeightCharacteristic" >
         <xs:sequence>
            <xs:element name="comparisonOperator" type = "D2LogicalModel:ComparisonOperatorEnum"/ >
            <xs:element name="grossVehicleWeight" type = "D2LogicalModel:Tonnes"/ >
            <xs:element name="grossWeightCharacteristicExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:complexType name="GroupOfLocations" abstract = "true" >
         <xs:sequence>
            <xs:element name="groupOfLocationsExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:complexType name="HeaderInformation" >
         <xs:sequence>
            <xs:element name="areaOfInterest" type = "D2LogicalModel:AreaOfInterestEnum" minOccurs = "0"/ >
            <xs:element name="confidentiality" type = "D2LogicalModel:ConfidentialityValueEnum"/ >
            <xs:element name="informationStatus" type = "D2LogicalModel:InformationStatusEnum"/ >
            <xs:element name="urgency" type = "D2LogicalModel:UrgencyEnum" minOccurs = "0"/ >
            <xs:element name="headerInformationExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:complexType name="HeaviestAxleWeightCharacteristic" >
         <xs:sequence>
            <xs:element name="comparisonOperator" type = "D2LogicalModel:ComparisonOperatorEnum"/ >
            <xs:element name="heaviestAxleWeight" type = "D2LogicalModel:Tonnes"/ >
            <xs:element name="heaviestAxleWeightCharacteristicExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
```

```
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="HeightCharacteristic" >
      <xs:sequence>
         <xs:element name="comparisonOperator" type = "D2LogicalModel:ComparisonOperatorEnum"/ >
         <xs:element name="vehicleHeight" type = "D2LogicalModel:MetresAsFloat"/ >
         <xs:element name="heightCharacteristicExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="Humidity" >
      <xs:sequence>
         <xs:element name="relativeHumidity" type = "D2LogicalModel:PercentageValue"/ >
         <xs:element name="humidityExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="HumidityInformation" >
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:WeatherData" >
            <xs:sequence>
               <xs:element name="humidity" type = "D2LogicalModel:Humidity"/ >
               <xs:element name="humidityInformationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IndividualVehicleDataValues" >
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:TrafficData" >
            <xs:sequence>
               <xs:element name="individualVehicleSpeed" type = "D2LogicalModel:SpeedValue" minOccurs = "0"/ >
               <xs:element name="arrivalTime" type = "D2LogicalModel:DateTimeValue" minOccurs = "0"/ >
               <xs:element name="exitTime" type = "D2LogicalModel:DateTimeValue" minOccurs = "0"/ >
               <xs:element name="passageDurationTime" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
               <xs:element name="presenceDurationTime" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
               <xs:element name="timeGap" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
               <xs:element name="timeHeadway" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
```

```
                <xs:element name="distanceGap" type = "D2LogicalModel:FloatingPointMetreDistanceValue"
minOccurs = "0"/ >
                <xs:element name="distanceHeadway" type = "D2LogicalModel:FloatingPointMetreDistanceValue"
minOccurs = "0"/ >
                <xs:element name="individualVehicleDataValuesExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="InformationStatusEnum" >
       <xs:restriction base="xs:string" >
          <xs:enumeration value="real"/ >
          <xs:enumeration value="securityExercise"/ >
          <xs:enumeration value="technicalExercise"/ >
          <xs:enumeration value="test"/ >
       </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="IntegerMetreDistanceValue" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:DataValue" >
             <xs:sequence>
                <xs:element name="integerMetreDistance" type = "D2LogicalModel:MetresAsNonNegativeInteger"/ >
                <xs:element name="integerMetreDistanceValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="IntensityKilogramsPerSquareMetre" >
       <xs:restriction base="D2LogicalModel:Float"/ >
    </xs:simpleType>
    <xs:simpleType name="IntensityMillimetresPerHour" >
       <xs:restriction base="D2LogicalModel:Float"/ >
    </xs:simpleType>
    <xs:complexType name="KilogramsConcentrationValue" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:DataValue" >
```

```
            <xs:sequence>
               <xs:element name=”kilogramsConcentration”
type = ”D2LogicalModel:ConcentrationKilogramsPerCubicMetre”/ >
               <xs:element name=”kilogramsConcentrationValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”KilometresPerHour” >
      <xs:restriction base=”D2LogicalModel:Float”/ >
   </xs:simpleType>
   <xs:simpleType name=”LaneEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”allLanesCompleteCarriageway”/ >
         <xs:enumeration value=”busLane”/ >
         <xs:enumeration value=”busStop”/ >
         <xs:enumeration value=”carPoolLane”/ >
         <xs:enumeration value=”centralReservation”/ >
         <xs:enumeration value=”crawlerLane”/ >
         <xs:enumeration value=”emergencyLane”/ >
         <xs:enumeration value=”escapeLane”/ >
         <xs:enumeration value=”expressLane”/ >
         <xs:enumeration value=”hardShoulder”/ >
         <xs:enumeration value=”heavyVehicleLane”/ >
         <xs:enumeration value=”lane1”/ >
         <xs:enumeration value=”lane2”/ >
         <xs:enumeration value=”lane3”/ >
         <xs:enumeration value=”lane4”/ >
         <xs:enumeration value=”lane5”/ >
         <xs:enumeration value=”lane6”/ >
         <xs:enumeration value=”lane7”/ >
         <xs:enumeration value=”lane8”/ >
         <xs:enumeration value=”lane9”/ >
         <xs:enumeration value=”layBy”/ >
         <xs:enumeration value=”leftHandTurningLane”/ >
         <xs:enumeration value=”leftLane”/ >
         <xs:enumeration value=”localTrafficLane”/ >
         <xs:enumeration value=”middleLane”/ >
```

```
            <xs:enumeration value="opposingLanes"/ >
            <xs:enumeration value="overtakingLane"/ >
            <xs:enumeration value="rightHandTurningLane"/ >
            <xs:enumeration value="rightLane"/ >
            <xs:enumeration value="rushHourLane"/ >
            <xs:enumeration value="setDownArea"/ >
            <xs:enumeration value="slowVehicleLane"/ >
            <xs:enumeration value="throughTrafficLane"/ >
            <xs:enumeration value="tidalFlowLane"/ >
            <xs:enumeration value="turningLane"/ >
            <xs:enumeration value="verge"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="LengthCharacteristic" >
         <xs:sequence>
            <xs:element name="comparisonOperator" type = "D2LogicalModel:ComparisonOperatorEnum"/ >
            <xs:element name="vehicleLength" type = "D2LogicalModel:MetresAsFloat"/ >
            <xs:element name="lengthCharacteristicExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:simpleType name="LoadTypeEnum" >
         <xs:restriction base="xs:string" >
            <xs:enumeration value="abnormalLoad"/ >
            <xs:enumeration value="ammunition"/ >
            <xs:enumeration value="chemicals"/ >
            <xs:enumeration value="combustibleMaterials"/ >
            <xs:enumeration value="corrosiveMaterials"/ >
            <xs:enumeration value="debris"/ >
            <xs:enumeration value="empty"/ >
            <xs:enumeration value="explosiveMaterials"/ >
            <xs:enumeration value="extraHighLoad"/ >
            <xs:enumeration value="extraLongLoad"/ >
            <xs:enumeration value="extraWideLoad"/ >
            <xs:enumeration value="fuel"/ >
            <xs:enumeration value="glass"/ >
            <xs:enumeration value="goods"/ >
            <xs:enumeration value="hazardousMaterials"/ >
```

```
            <xs:enumeration value="liquid"/ >
            <xs:enumeration value="livestock"/ >
            <xs:enumeration value="materials"/ >
            <xs:enumeration value="materialsDangerousForPeople"/ >
            <xs:enumeration value="materialsDangerousForTheEnvironment"/ >
            <xs:enumeration value="materialsDangerousForWater"/ >
            <xs:enumeration value="oil"/ >
            <xs:enumeration value="ordinary"/ >
            <xs:enumeration value="perishableProducts"/ >
            <xs:enumeration value="petrol"/ >
            <xs:enumeration value="pharmaceuticalMaterials"/ >
            <xs:enumeration value="radioactiveMaterials"/ >
            <xs:enumeration value="refuse"/ >
            <xs:enumeration value="toxicMaterials"/ >
            <xs:enumeration value="vehicles"/ >
            <xs:enumeration value="other"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="LocationCharacteristicsOverride" >
         <xs:sequence>
            <xs:element name="measurementLanesOverride" type = "D2LogicalModel:LaneEnum" minOccurs = "0"/ >
            <xs:element name="reversedFlow" type = "D2LogicalModel:Boolean" minOccurs = "0"/ >
            <xs:element name="locationCharacteristicsOverrideExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:complexType name="MeasuredDataPublication" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:PayloadPublication" >
               <xs:sequence>
                  <xs:element name="measurementSiteTableReference"
type = "D2LogicalModel:_MeasurementSiteTableVersionedReference"/ >
                  <xs:element name="headerInformation" type = "D2LogicalModel:HeaderInformation"/ >
                  <xs:element name="siteMeasurements" type = "D2LogicalModel:SiteMeasurements"
maxOccurs = "unbounded"/ >
                  <xs:element name="measuredDataPublicationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
```

```
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name=”MeasuredValue” >
      <xs:sequence>
         <xs:element name=”measurementEquipmentTypeUsed” type = ”D2LogicalModel:MultilingualString”
minOccurs = ”0”/ >
         <xs:element name=”locationCharacteristicsOverride”
type = ”D2LogicalModel:LocationCharacteristicsOverride” minOccurs = ”0”/ >
         <xs:element name=”measurementEquipmentFault” type = ”D2LogicalModel:MeasurementEquipmentFault”
minOccurs = ”0” maxOccurs = ”unbounded”/ >
         <xs:element name=”basicData” type = ”D2LogicalModel:BasicData” minOccurs = ”0”/ >
         <xs:element name=”measuredValueExtension” type = ”D2LogicalModel:_ExtensionType” minOccurs = ”0”/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name=”MeasurementEquipmentFault” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:Fault” >
            <xs:sequence>
               <xs:element name=”measurementEquipmentFault”
type = ”D2LogicalModel:MeasurementEquipmentFaultEnum”/ >
               <xs:element name=”measurementEquipmentFaultExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”MeasurementEquipmentFaultEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”intermittentDataValues”/ >
         <xs:enumeration value=”noDataValuesAvailable”/ >
         <xs:enumeration value=”spuriousUnreliableDataValues”/ >
         <xs:enumeration value=”unspecifiedOrUnknownFault”/ >
         <xs:enumeration value=”other”/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name=”MetresAsFloat” >
      <xs:restriction base=”D2LogicalModel:Float”/ >
   </xs:simpleType>
```

```
   <xs:simpleType name=”MetresAsNonNegativeInteger” >
      <xs:restriction base=”D2LogicalModel:NonNegativeInteger”/ >
   </xs:simpleType>
   <xs:complexType name=”MicrogramsConcentrationValue” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:DataValue” >
            <xs:sequence>
               <xs:element name=”microgramsConcentration”
type = ”D2LogicalModel:ConcentrationMicrogramsPerCubicMetre”/ >
               <xs:element name=”microgramsConcentrationValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name=”MultilingualString” >
      <xs:sequence>
         <xs:element name=”values” >
            <xs:complexType>
               <xs:sequence>
                  <xs:element name=”value” type = ”D2LogicalModel:MultilingualStringValue”
maxOccurs = ”unbounded”/ >
               </xs:sequence>
            </xs:complexType>
         </xs:element>
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name=”MultilingualStringValue” >
      <xs:simpleContent>
         <xs:extension base=”D2LogicalModel:MultilingualStringValueType” >
            <xs:attribute name=”lang” type = ”xs:language”/ >
         </xs:extension>
      </xs:simpleContent>
   </xs:complexType>
   <xs:simpleType name=”MultilingualStringValueType” >
      <xs:restriction base=”xs:string” >
         <xs:maxLength value=”1024”/ >
      </xs:restriction>
   </xs:simpleType>
```

```
    <xs:simpleType name=”NonNegativeInteger” >
       <xs:restriction base=”xs:nonNegativeInteger”/ >
    </xs:simpleType>
    <xs:complexType name=”NumberOfAxlesCharacteristic” >
       <xs:sequence>
          <xs:element name=”comparisonOperator” type = ”D2LogicalModel:ComparisonOperatorEnum”/ >
          <xs:element name=”numberOfAxles” type = ”D2LogicalModel:NonNegativeInteger”/ >
          <xs:element name=”numberOfAxlesCharacteristicExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
       </xs:sequence>
    </xs:complexType>
    <xs:simpleType name=”PassengerCarUnitsPerHour” >
       <xs:restriction base=”D2LogicalModel:NonNegativeInteger”/ >
    </xs:simpleType>
    <xs:complexType name=”PayloadPublication” abstract = ”true” >
       <xs:sequence>
          <xs:element name=”payloadPublicationExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
       </xs:sequence>
    </xs:complexType>
    <xs:complexType name=”PcuFlowValue” >
       <xs:complexContent>
          <xs:extension base=”D2LogicalModel:DataValue” >
             <xs:sequence>
                <xs:element name=”pcuFlowRate” type = ”D2LogicalModel:PassengerCarUnitsPerHour”/ >
                <xs:element name=”pcuFlowValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name=”Percentage” >
       <xs:restriction base=”D2LogicalModel:Float”/ >
    </xs:simpleType>
    <xs:complexType name=”PercentageValue” >
       <xs:complexContent>
          <xs:extension base=”D2LogicalModel:DataValue” >
             <xs:sequence>
```

```
                <xs:element name="percentage" type = "D2LogicalModel:Percentage"/ >
                <xs:element name="percentageValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="PollutantTypeEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="benzeneTolueneXylene"/ >
         <xs:enumeration value="carbonMonoxide"/ >
         <xs:enumeration value="lead"/ >
         <xs:enumeration value="methane"/ >
         <xs:enumeration value="nitricOxide"/ >
         <xs:enumeration value="nitrogenDioxide"/ >
         <xs:enumeration value="nitrogenMonoxide"/ >
         <xs:enumeration value="nitrogenOxides"/ >
         <xs:enumeration value="nonMethaneHydrocarbons"/ >
         <xs:enumeration value="ozone"/ >
         <xs:enumeration value="particulates10"/ >
         <xs:enumeration value="polycyclicAromaticHydrocarbons"/ >
         <xs:enumeration value="primaryParticulate"/ >
         <xs:enumeration value="sulphurDioxide"/ >
         <xs:enumeration value="totalHydrocarbons"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="Pollution" >
      <xs:sequence>
         <xs:element name="pollutantType" type = "D2LogicalModel:PollutantTypeEnum"/ >
         <xs:element name="pollutantConcentration" type = "D2LogicalModel:MicrogramsConcentrationValue"
minOccurs = "0"/ >
         <xs:element name="pollutionExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="PollutionInformation" >
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:WeatherData" >
            <xs:sequence>
               <xs:element name="pollution" type = "D2LogicalModel:Pollution" maxOccurs = "unbounded"/ >
```

```
                <xs:element name="pollutionInformationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="PrecipitationDetail" >
       <xs:sequence>
          <xs:element name="precipitationType" type = "D2LogicalModel:PrecipitationTypeEnum" minOccurs = "0"/ >
          <xs:element name="precipitationIntensity" type = "D2LogicalModel:PrecipitationIntensityValue"
minOccurs = "0"/ >
          <xs:element name="depositionDepth" type = "D2LogicalModel:FloatingPointMetreDistanceValue"
minOccurs = "0"/ >
          <xs:element name="precipitationDetailExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
       </xs:sequence>
    </xs:complexType>
    <xs:complexType name="PrecipitationInformation" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:WeatherData" >
             <xs:sequence>
                <xs:element name="noPrecipitation" type = "D2LogicalModel:Boolean" minOccurs = "0"/ >
                <xs:element name="precipitationDetail" type = "D2LogicalModel:PrecipitationDetail"
minOccurs = "0"/ >
                <xs:element name="precipitationInformationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="PrecipitationIntensityValue" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:DataValue" >
             <xs:sequence>
                <xs:element name="millimetresPerHourIntensity"
type = "D2LogicalModel:IntensityMillimetresPerHour"/ >
                <xs:element name="precipitationIntensityValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
```

```
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="PrecipitationTypeEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="drizzle"/ >
         <xs:enumeration value="freezingRain"/ >
         <xs:enumeration value="hail"/ >
         <xs:enumeration value="rain"/ >
         <xs:enumeration value="sleet"/ >
         <xs:enumeration value="snow"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="RoadSurfaceConditionInformation" >
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:WeatherData" >
            <xs:sequence>
               <xs:element name="weatherRelatedRoadConditionType"
type = "D2LogicalModel:WeatherRelatedRoadConditionTypeEnum" minOccurs = "0" maxOccurs = "unbounded"/ >
               <xs:element name="roadSurfaceConditionMeasurements"
type = "D2LogicalModel:RoadSurfaceConditionMeasurements"/ >
               <xs:element name="roadSurfaceConditionInformationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="RoadSurfaceConditionMeasurements" >
      <xs:sequence>
         <xs:element name="roadSurfaceTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
         <xs:element name="protectionTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
         <xs:element name="deIcingApplicationRate" type = "D2LogicalModel:ApplicationRateValue"
minOccurs = "0"/ >
         <xs:element name="deIcingConcentration" type = "D2LogicalModel:KilogramsConcentrationValue"
minOccurs = "0"/ >
         <xs:element name="depthOfSnow" type = "D2LogicalModel:FloatingPointMetreDistanceValue"
minOccurs = "0"/ >
```

```
          <xs:element name="waterFilmThickness" type = "D2LogicalModel:FloatingPointMetreDistanceValue"
minOccurs = "0"/ >
          <xs:element name="roadSurfaceConditionMeasurementsExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
       </xs:sequence>
    </xs:complexType>
    <xs:simpleType name="Seconds" >
       <xs:restriction base="D2LogicalModel:Float"/ >
    </xs:simpleType>
    <xs:complexType name="SiteMeasurements" >
       <xs:sequence>
          <xs:element name="measurementSiteReference"
type = "D2LogicalModel:_MeasurementSiteRecordVersionedReference"/ >
          <xs:element name="measurementTimeDefault" type = "D2LogicalModel:DateTime"/ >
          <xs:element name="measuredValue" type = "D2LogicalModel:_SiteMeasurementsIndexMeasuredValue"
minOccurs = "0" maxOccurs = "unbounded"/ >
          <xs:element name="siteMeasurementsExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
       </xs:sequence>
    </xs:complexType>
    <xs:complexType name="SpeedPercentile" >
       <xs:sequence>
          <xs:element name="vehiclePercentage" type = "D2LogicalModel:PercentageValue"/ >
          <xs:element name="speedPercentile" type = "D2LogicalModel:SpeedValue"/ >
          <xs:element name="speedPercentileExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
       </xs:sequence>
    </xs:complexType>
    <xs:complexType name="SpeedValue" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:DataValue" >
             <xs:sequence>
                <xs:element name="speed" type = "D2LogicalModel:KilometresPerHour"/ >
                <xs:element name="speedValueExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="String" >
       <xs:restriction base="xs:string" >
```

```
            <xs:maxLength value="1024"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="Temperature" >
         <xs:sequence>
            <xs:element name="airTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
            <xs:element name="dewPointTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
            <xs:element name="maximumTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
            <xs:element name="minimumTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
            <xs:element name="temperatureExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:simpleType name="TemperatureCelsius" >
         <xs:restriction base="D2LogicalModel:Float"/ >
      </xs:simpleType>
      <xs:complexType name="TemperatureInformation" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:WeatherData" >
               <xs:sequence>
                  <xs:element name="temperature" type = "D2LogicalModel:Temperature"/ >
                  <xs:element name="temperatureInformationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="TemperatureValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
                  <xs:element name="temperature" type = "D2LogicalModel:TemperatureCelsius"/ >
                  <xs:element name="temperatureValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:simpleType name="TimePrecisionEnum" >
         <xs:restriction base="xs:string" >
```

```
            <xs:enumeration value="tenthsOfSecond"/ >
            <xs:enumeration value="second"/ >
            <xs:enumeration value="minute"/ >
            <xs:enumeration value="quarterHour"/ >
            <xs:enumeration value="halfHour"/ >
            <xs:enumeration value="hour"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:simpleType name="Tonnes" >
         <xs:restriction base="D2LogicalModel:Float"/ >
      </xs:simpleType>
      <xs:complexType name="TrafficConcentration" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:TrafficData" >
               <xs:sequence>
                  <xs:element name="concentration" type = "D2LogicalModel:ConcentrationOfVehiclesValue"
minOccurs = "0"/ >
                  <xs:element name="occupancy" type = "D2LogicalModel:PercentageValue" minOccurs = "0"/ >
                  <xs:element name="trafficConcentrationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="TrafficData" abstract = "true" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:BasicData" >
               <xs:sequence>
                  <xs:element name="forVehiclesWithCharacteristicsOf" type = "D2LogicalModel:VehicleCharacteristics"
minOccurs = "0"/ >
                  <xs:element name="trafficDataExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="TrafficFlow" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:TrafficData" >
```

```
            <xs:sequence>
               <xs:element name=”axleFlow” type = ”D2LogicalModel:AxleFlowValue” minOccurs = ”0”/ >
               <xs:element name=”pcuFlow” type = ”D2LogicalModel:PcuFlowValue” minOccurs = ”0”/ >
               <xs:element name=”percentageLongVehicles” type = ”D2LogicalModel:PercentageValue”
minOccurs = ”0”/ >
               <xs:element name=”vehicleFlow” type = ”D2LogicalModel:VehicleFlowValue” minOccurs = ”0”/ >
               <xs:element name=”trafficFlowExtension” type = ”D2LogicalModel:_ExtensionType” minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name=”TrafficHeadway” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:TrafficData” >
            <xs:sequence>
               <xs:element name=”averageDistanceHeadway” type = ”D2LogicalModel:FloatingPointMetreDistanceValue”
minOccurs = ”0”/ >
               <xs:element name=”averageTimeHeadway” type = ”D2LogicalModel:DurationValue” minOccurs = ”0”/ >
               <xs:element name=”trafficHeadwayExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name=”TrafficSpeed” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:TrafficData” >
            <xs:sequence>
               <xs:element name=”averageVehicleSpeed” type = ”D2LogicalModel:SpeedValue” minOccurs = ”0”/ >
               <xs:element name=”speedPercentile” type = ”D2LogicalModel:SpeedPercentile” minOccurs = ”0”/ >
               <xs:element name=”trafficSpeedExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name=”TrafficStatus” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:BasicData” >
```

```
            <xs:sequence>
               <xs:element name=”trafficTrendType” type = ”D2LogicalModel:TrafficTrendTypeEnum”
minOccurs = ”0”/ >
               <xs:element name=”trafficStatus” type = ”D2LogicalModel:TrafficStatusValue” minOccurs = ”0”/ >
               <xs:element name=”trafficStatusExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”TrafficStatusEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”impossible”/ >
         <xs:enumeration value=”congested”/ >
         <xs:enumeration value=”heavy”/ >
         <xs:enumeration value=”freeFlow”/ >
         <xs:enumeration value=”unknown”/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name=”TrafficStatusValue” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:DataValue” >
            <xs:sequence>
               <xs:element name=”trafficStatusValue” type = ”D2LogicalModel:TrafficStatusEnum”/ >
               <xs:element name=”trafficStatusValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”TrafficTrendTypeEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”trafficBuildingUp”/ >
         <xs:enumeration value=”trafficEasing”/ >
         <xs:enumeration value=”trafficStable”/ >
         <xs:enumeration value=”unknown”/ >
      </xs:restriction>
   </xs:simpleType>
```

```
   <xs:complexType name=”TravelTimeData” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:BasicData” >
            <xs:sequence>
               <xs:element name=”travelTimeTrendType” type = ”D2LogicalModel:TravelTimeTrendTypeEnum”
minOccurs = ”0”/ >
               <xs:element name=”travelTimeType” type = ”D2LogicalModel:TravelTimeTypeEnum” minOccurs = ”0”/ >
               <xs:element name=”vehicleType” type = ”D2LogicalModel:VehicleTypeEnum” minOccurs = ”0”
maxOccurs = ”unbounded”/ >
               <xs:element name=”travelTime” type = ”D2LogicalModel:DurationValue” minOccurs = ”0”/ >
               <xs:element name=”freeFlowTravelTime” type = ”D2LogicalModel:DurationValue” minOccurs = ”0”/ >
               <xs:element name=”normallyExpectedTravelTime” type = ”D2LogicalModel:DurationValue”
minOccurs = ”0”/ >
               <xs:element name=”freeFlowSpeed” type = ”D2LogicalModel:SpeedValue” minOccurs = ”0”/ >
               <xs:element name=”travelTimeDataExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”TravelTimeTrendTypeEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”decreasing”/ >
         <xs:enumeration value=”increasing”/ >
         <xs:enumeration value=”stable”/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name=”TravelTimeTypeEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”best”/ >
         <xs:enumeration value=”estimated”/ >
         <xs:enumeration value=”instantaneous”/ >
         <xs:enumeration value=”reconstituted”/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name=”UrgencyEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”extremelyUrgent”/ >
         <xs:enumeration value=”urgent”/ >
```

```
            <xs:enumeration value="normalUrgency"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="VehicleCharacteristics" >
         <xs:sequence>
            <xs:element name="fuelType" type = "D2LogicalModel:FuelTypeEnum" minOccurs = "0"/ >
            <xs:element name="loadType" type = "D2LogicalModel:LoadTypeEnum" minOccurs = "0"/ >
            <xs:element name="vehicleEquipment" type = "D2LogicalModel:VehicleEquipmentEnum" minOccurs = "0"/ >
            <xs:element name="vehicleType" type = "D2LogicalModel:VehicleTypeEnum" minOccurs = "0"
maxOccurs = "unbounded"/ >
            <xs:element name="vehicleUsage" type = "D2LogicalModel:VehicleUsageEnum" minOccurs = "0"/ >
            <xs:element name="grossWeightCharacteristic" type = "D2LogicalModel:GrossWeightCharacteristic"
minOccurs = "0" maxOccurs = "2"/ >
            <xs:element name="heightCharacteristic" type = "D2LogicalModel:HeightCharacteristic" minOccurs = "0"
maxOccurs = "2"/ >
            <xs:element name="lengthCharacteristic" type = "D2LogicalModel:LengthCharacteristic" minOccurs = "0"
maxOccurs = "2"/ >
            <xs:element name="widthCharacteristic" type = "D2LogicalModel:WidthCharacteristic" minOccurs = "0"
maxOccurs = "2"/ >
            <xs:element name="heaviestAxleWeightCharacteristic"
type = "D2LogicalModel:HeaviestAxleWeightCharacteristic" minOccurs = "0" maxOccurs = "2"/ >
            <xs:element name="numberOfAxlesCharacteristic" type = "D2LogicalModel:NumberOfAxlesCharacteristic"
minOccurs = "0" maxOccurs = "2"/ >
            <xs:element name="vehicleCharacteristicsExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:simpleType name="VehicleEquipmentEnum" >
         <xs:restriction base="xs:string" >
            <xs:enumeration value="notUsingSnowChains"/ >
            <xs:enumeration value="notUsingSnowChainsOrTyres"/ >
            <xs:enumeration value="snowChainsInUse"/ >
            <xs:enumeration value="snowTyresInUse"/ >
            <xs:enumeration value="snowChainsOrTyresInUse"/ >
            <xs:enumeration value="withoutSnowTyresOrChainsOnBoard"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="VehicleFlowValue" >
```

```
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:DataValue” >
            <xs:sequence>
               <xs:element name=”vehicleFlowRate” type = ”D2LogicalModel:VehiclesPerHour”/ >
               <xs:element name=”vehicleFlowValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”VehiclesPerHour” >
      <xs:restriction base=”D2LogicalModel:NonNegativeInteger”/ >
   </xs:simpleType>
   <xs:simpleType name=”VehicleTypeEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”agriculturalVehicle”/ >
         <xs:enumeration value=”anyVehicle”/ >
         <xs:enumeration value=”articulatedVehicle”/ >
         <xs:enumeration value=”bicycle”/ >
         <xs:enumeration value=”bus”/ >
         <xs:enumeration value=”car”/ >
         <xs:enumeration value=”caravan”/ >
         <xs:enumeration value=”carOrLightVehicle”/ >
         <xs:enumeration value=”carWithCaravan”/ >
         <xs:enumeration value=”carWithTrailer”/ >
         <xs:enumeration value=”constructionOrMaintenanceVehicle”/ >
         <xs:enumeration value=”fourWheelDrive”/ >
         <xs:enumeration value=”highSidedVehicle”/ >
         <xs:enumeration value=”lorry”/ >
         <xs:enumeration value=”moped”/ >
         <xs:enumeration value=”motorcycle”/ >
         <xs:enumeration value=”motorcycleWithSideCar”/ >
         <xs:enumeration value=”motorscooter”/ >
         <xs:enumeration value=”tanker”/ >
         <xs:enumeration value=”threeWheeledVehicle”/ >
         <xs:enumeration value=”trailer”/ >
         <xs:enumeration value=”tram”/ >
         <xs:enumeration value=”twoWheeledVehicle”/ >
         <xs:enumeration value=”van”/ >
```

```
      <xs:enumeration value="vehicleWithCatalyticConverter"/ >
      <xs:enumeration value="vehicleWithoutCatalyticConverter"/ >
      <xs:enumeration value="vehicleWithCaravan"/ >
      <xs:enumeration value="vehicleWithTrailer"/ >
      <xs:enumeration value="withEvenNumberedRegistrationPlates"/ >
      <xs:enumeration value="withOddNumberedRegistrationPlates"/ >
      <xs:enumeration value="other"/ >
   </xs:restriction>
</xs:simpleType>
<xs:simpleType name="VehicleUsageEnum" >
   <xs:restriction base="xs:string" >
      <xs:enumeration value="agricultural"/ >
      <xs:enumeration value="commercial"/ >
      <xs:enumeration value="emergencyServices"/ >
      <xs:enumeration value="military"/ >
      <xs:enumeration value="nonCommercial"/ >
      <xs:enumeration value="patrol"/ >
      <xs:enumeration value="recoveryServices"/ >
      <xs:enumeration value="roadMaintenanceOrConstruction"/ >
      <xs:enumeration value="roadOperator"/ >
      <xs:enumeration value="taxi"/ >
   </xs:restriction>
</xs:simpleType>
<xs:complexType name="VersionedReference" >
   <xs:attribute name="id" type = "xs:string" use = "required"/ >
   <xs:attribute name="version" type = "xs:string" use = "required"/ >
</xs:complexType>
<xs:complexType name="Visibility" >
   <xs:sequence>
      <xs:element name="minimumVisibilityDistance" type = "D2LogicalModel:IntegerMetreDistanceValue"/ >
      <xs:element name="visibilityExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
   </xs:sequence>
</xs:complexType>
<xs:complexType name="VisibilityInformation" >
   <xs:complexContent>
      <xs:extension base="D2LogicalModel:WeatherData" >
         <xs:sequence>
            <xs:element name="visibility" type = "D2LogicalModel:Visibility"/ >
```

```
                <xs:element name="visibilityInformationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="WeatherData" abstract = "true" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:BasicData" >
             <xs:sequence>
                <xs:element name="weatherDataExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="WeatherRelatedRoadConditionTypeEnum" >
       <xs:restriction base="xs:string" >
          <xs:enumeration value="blackIce"/ >
          <xs:enumeration value="deepSnow"/ >
          <xs:enumeration value="dry"/ >
          <xs:enumeration value="freezingOfWetRoads"/ >
          <xs:enumeration value="freezingPavements"/ >
          <xs:enumeration value="freezingRain"/ >
          <xs:enumeration value="freshSnow"/ >
          <xs:enumeration value="ice"/ >
          <xs:enumeration value="iceBuildUp"/ >
          <xs:enumeration value="iceWithWheelBarTracks"/ >
          <xs:enumeration value="icyPatches"/ >
          <xs:enumeration value="looseSnow"/ >
          <xs:enumeration value="normalWinterConditionsForPedestrians"/ >
          <xs:enumeration value="packedSnow"/ >
          <xs:enumeration value="roadSurfaceMelting"/ >
          <xs:enumeration value="slipperyRoad"/ >
          <xs:enumeration value="slushOnRoad"/ >
          <xs:enumeration value="slushStrings"/ >
          <xs:enumeration value="snowDrifts"/ >
          <xs:enumeration value="snowOnPavement"/ >
          <xs:enumeration value="snowOnTheRoad"/ >
          <xs:enumeration value="surfaceWater"/ >
```

```
            <xs:enumeration value="wet"/ >
            <xs:enumeration value="wetAndIcyRoad"/ >
            <xs:enumeration value="wetIcyPavement"/ >
            <xs:enumeration value="other"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="WidthCharacteristic" >
         <xs:sequence>
            <xs:element name="comparisonOperator" type = "D2LogicalModel:ComparisonOperatorEnum"/ >
            <xs:element name="vehicleWidth" type = "D2LogicalModel:MetresAsFloat"/ >
            <xs:element name="widthCharacteristicExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:complexType name="Wind" >
         <xs:sequence>
            <xs:element name="windMeasurementHeight" type = "D2LogicalModel:MetresAsNonNegativeInteger"
minOccurs = "0"/ >
            <xs:element name="windSpeed" type = "D2LogicalModel:SpeedValue" minOccurs = "0"/ >
            <xs:element name="maximumWindSpeed" type = "D2LogicalModel:SpeedValue" minOccurs = "0"/ >
            <xs:element name="windDirectionBearing" type = "D2LogicalModel:DirectionBearingValue"
minOccurs = "0"/ >
            <xs:element name="windDirectionCompass" type = "D2LogicalModel:DirectionCompassValue"
minOccurs = "0"/ >
            <xs:element name="windExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:complexType name="WindInformation" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:WeatherData" >
               <xs:sequence>
                  <xs:element name="wind" type = "D2LogicalModel:Wind"/ >
                  <xs:element name="windInformationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
</xs:schema>
```

Annex D
(normative)

Referenced XML Schema for “ElaboratedDataPublication”

D.1 Overview

This Annex shall be used when using an XML encoding.

As specified in CEN/TS 16157-1 this schema may be extended by use of Extensions. Such extensions shall be done in a manner conformant to the requirements specified in CEN/TS 16157-1, Clause 9 and Annex D.

Supplied data claiming conformance to this Part and specifically this Annex shall positively validate against the schema specified in this Annex including any permissible Extensions.

D.2 Schema

```
<?xml version=”1.0” encoding = ”utf-8” standalone = ”no”? >
<xs:schema xmlns:D2LogicalModel=”http://datex2.eu/schema/2/2_0” xmlns:xs = ”http://www.w3.org/2001/XMLSchema”
targetNamespace = ”http://datex2.eu/schema/2/2_0” elementFormDefault = ”qualified”
attributeFormDefault = ”unqualified” version = ”2.0” >
   <xs:complexType name=”_ExtensionType” >
      <xs:sequence>
         <xs:any namespace=”##any” processContents = ”lax” minOccurs = ”0” maxOccurs = ”unbounded”/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name=”_PredefinedNonOrderedLocationGroupVersionedReference” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:VersionedReference” >
            <xs:attribute name=”targetClass” use = ”required” fixed = ”PredefinedNonOrderedLocationGroup”/ >
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”AngleInDegrees” >
      <xs:restriction base=”D2LogicalModel:NonNegativeInteger”/ >
```

```
   </xs:simpleType>
   <xs:complexType name=”ApplicationRateValue” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:DataValue” >
            <xs:sequence>
               <xs:element name=”applicationRate” type = ”D2LogicalModel:IntensityKilogramsPerSquareMetre”/ >
               <xs:element name=”applicationRateValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”AreaOfInterestEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”continentWide”/ >
         <xs:enumeration value=”national”/ >
         <xs:enumeration value=”neighbouringCountries”/ >
         <xs:enumeration value=”notSpecified”/ >
         <xs:enumeration value=”regional”/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name=”AxleFlowValue” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:DataValue” >
            <xs:sequence>
               <xs:element name=”axleFlowRate” type = ”D2LogicalModel:AxlesPerHour”/ >
               <xs:element name=”axleFlowValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”AxlesPerHour” >
      <xs:restriction base=”D2LogicalModel:NonNegativeInteger”/ >
   </xs:simpleType>
   <xs:complexType name=”BasicData” abstract = ”true” >
      <xs:sequence>
         <xs:element name=”measurementOrCalculationPeriod” type = ”D2LogicalModel:Seconds” minOccurs = ”0”/ >
```

```
            <xs:element name="measurementOrCalculationTime" type = "D2LogicalModel:DateTime" minOccurs = "0"/ >
            <xs:element name="pertinentLocation" type = "D2LogicalModel:GroupOfLocations" minOccurs = "0"/ >
            <xs:element name="basicDataExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
         </xs:sequence>
         <xs:attribute name="measurementOrCalculatedTimePrecision" type = "D2LogicalModel:TimePrecisionEnum"
use = "optional"/ >
      </xs:complexType>
      <xs:simpleType name="Boolean" >
         <xs:restriction base="xs:boolean"/ >
      </xs:simpleType>
      <xs:simpleType name="ComparisonOperatorEnum" >
         <xs:restriction base="xs:string" >
            <xs:enumeration value="equalTo"/ >
            <xs:enumeration value="greaterThan"/ >
            <xs:enumeration value="greaterThanOrEqualTo"/ >
            <xs:enumeration value="lessThan"/ >
            <xs:enumeration value="lessThanOrEqualTo"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:simpleType name="ConcentrationKilogramsPerCubicMetre" >
         <xs:restriction base="D2LogicalModel:Float"/ >
      </xs:simpleType>
      <xs:simpleType name="ConcentrationMicrogramsPerCubicMetre" >
         <xs:restriction base="D2LogicalModel:Float"/ >
      </xs:simpleType>
      <xs:complexType name="ConcentrationOfVehiclesValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
                  <xs:element name="concentrationOfVehicles"
type = "D2LogicalModel:ConcentrationVehiclesPerKilometre"/ >
                  <xs:element name="concentrationOfVehiclesValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:simpleType name="ConcentrationVehiclesPerKilometre" >
         <xs:restriction base="D2LogicalModel:NonNegativeInteger"/ >
```

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   <xs:restriction base=”xs:string” >
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      <xs:enumeration value=”noRestriction”/ >
      <xs:enumeration value=”restrictedToAuthorities”/ >
      <xs:enumeration value=”restrictedToAuthoritiesAndTrafficOperators”/ >
      <xs:enumeration value=”restrictedToAuthoritiesTrafficOperatorsAndPublishers”/ >
      <xs:enumeration value=”restrictedToAuthoritiesTrafficOperatorsAndVms”/ >
   </xs:restriction>
</xs:simpleType>
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   <xs:restriction base=”xs:string” >
      <xs:enumeration value=”at”/ >
      <xs:enumeration value=”be”/ >
      <xs:enumeration value=”bg”/ >
      <xs:enumeration value=”ch”/ >
      <xs:enumeration value=”cs”/ >
      <xs:enumeration value=”cy”/ >
      <xs:enumeration value=”cz”/ >
      <xs:enumeration value=”de”/ >
      <xs:enumeration value=”dk”/ >
      <xs:enumeration value=”ee”/ >
      <xs:enumeration value=”es”/ >
      <xs:enumeration value=”fi”/ >
      <xs:enumeration value=”fo”/ >
      <xs:enumeration value=”fr”/ >
      <xs:enumeration value=”gb”/ >
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      <xs:enumeration value=”gi”/ >
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      <xs:enumeration value=”hu”/ >
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      <xs:enumeration value=”im”/ >
      <xs:enumeration value=”is”/ >
      <xs:enumeration value=”it”/ >
      <xs:enumeration value=”je”/ >
```

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            <xs:enumeration value="lt"/ >
            <xs:enumeration value="lu"/ >
            <xs:enumeration value="lv"/ >
            <xs:enumeration value="ma"/ >
            <xs:enumeration value="mc"/ >
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            <xs:enumeration value="nl"/ >
            <xs:enumeration value="no"/ >
            <xs:enumeration value="pl"/ >
            <xs:enumeration value="pt"/ >
            <xs:enumeration value="ro"/ >
            <xs:enumeration value="se"/ >
            <xs:enumeration value="si"/ >
            <xs:enumeration value="sk"/ >
            <xs:enumeration value="sm"/ >
            <xs:enumeration value="tr"/ >
            <xs:enumeration value="va"/ >
            <xs:enumeration value="other"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="DataValue" abstract = "true" >
         <xs:sequence>
            <xs:element name="dataValueExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
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         <xs:restriction base="xs:dateTime"/ >
      </xs:simpleType>
      <xs:complexType name="DateTimeValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
                  <xs:element name="dateTime" type = "D2LogicalModel:DateTime"/ >
                  <xs:element name="dateTimeValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
```

```
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="DayEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="monday"/ >
         <xs:enumeration value="tuesday"/ >
         <xs:enumeration value="wednesday"/ >
         <xs:enumeration value="thursday"/ >
         <xs:enumeration value="friday"/ >
         <xs:enumeration value="saturday"/ >
         <xs:enumeration value="sunday"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="DayWeekMonth" >
      <xs:sequence>
         <xs:element name="applicableDay" type = "D2LogicalModel:DayEnum" minOccurs = "0" maxOccurs = "7"/ >
         <xs:element name="applicableWeek" type = "D2LogicalModel:WeekOfMonthEnum" minOccurs = "0"
maxOccurs = "5"/ >
         <xs:element name="applicableMonth" type = "D2LogicalModel:MonthOfYearEnum" minOccurs = "0"
maxOccurs = "12"/ >
         <xs:element name="dayWeekMonthExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="DirectionBearingValue" >
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:DataValue" >
            <xs:sequence>
               <xs:element name="directionBearing" type = "D2LogicalModel:AngleInDegrees"/ >
               <xs:element name="directionBearingValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="DirectionCompassEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="east"/ >
         <xs:enumeration value="eastNorthEast"/ >
```

```
            <xs:enumeration value="eastSouthEast"/ >
            <xs:enumeration value="north"/ >
            <xs:enumeration value="northEast"/ >
            <xs:enumeration value="northNorthEast"/ >
            <xs:enumeration value="northNorthWest"/ >
            <xs:enumeration value="northWest"/ >
            <xs:enumeration value="south"/ >
            <xs:enumeration value="southEast"/ >
            <xs:enumeration value="southSouthEast"/ >
            <xs:enumeration value="southSouthWest"/ >
            <xs:enumeration value="southWest"/ >
            <xs:enumeration value="west"/ >
            <xs:enumeration value="westNorthWest"/ >
            <xs:enumeration value="westSouthWest"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="DirectionCompassValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
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                  <xs:element name="directionCompassValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="DurationValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
                  <xs:element name="duration" type = "D2LogicalModel:Seconds"/ >
                  <xs:element name="durationValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="ElaboratedData" >
```

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      <xs:sequence>
         <xs:element name=”forecast” type = ”D2LogicalModel:Boolean” minOccurs = ”0”/ >
         <xs:element name=”source” type = ”D2LogicalModel:Source” minOccurs = ”0”/ >
         <xs:element name=”validity” type = ”D2LogicalModel:Validity” minOccurs = ”0”/ >
         <xs:element name=”elaboratedDataFault” type = ”D2LogicalModel:ElaboratedDataFault” minOccurs = ”0”
maxOccurs = ”unbounded”/ >
         <xs:element name=”basicData” type = ”D2LogicalModel:BasicData” minOccurs = ”0”/ >
         <xs:element name=”elaboratedDataExtension” type = ”D2LogicalModel:_ExtensionType” minOccurs = ”0”/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name=”ElaboratedDataFault” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:Fault” >
            <xs:sequence>
               <xs:element name=”elaboratedDataFault” type = ”D2LogicalModel:ElaboratedDataFaultEnum”/ >
               <xs:element name=”elaboratedDataFaultExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”ElaboratedDataFaultEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”intermittentDataValues”/ >
         <xs:enumeration value=”noDataValuesAvailable”/ >
         <xs:enumeration value=”spuriousUnreliableDataValues”/ >
         <xs:enumeration value=”unspecifiedOrUnknownFault”/ >
         <xs:enumeration value=”other”/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name=”ElaboratedDataPublication” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:PayloadPublication” >
            <xs:sequence>
               <xs:element name=”forecastDefault” type = ”D2LogicalModel:Boolean” minOccurs = ”0”/ >
               <xs:element name=”periodDefault” type = ”D2LogicalModel:Seconds” minOccurs = ”0”/ >
               <xs:element name=”timeDefault” type = ”D2LogicalModel:DateTime” minOccurs = ”0”/ >
               <xs:element name=”headerInformation” type = ”D2LogicalModel:HeaderInformation”/ >
```

```
                <xs:element name="referenceSettings" type = "D2LogicalModel:ReferenceSettings" minOccurs = "0"/ >
                <xs:element name="elaboratedData" type = "D2LogicalModel:ElaboratedData"
maxOccurs = "unbounded"/ >
                <xs:element name="elaboratedDataPublicationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="Fault" >
      <xs:sequence>
         <xs:element name="faultIdentifier" type = "D2LogicalModel:String" minOccurs = "0"/ >
         <xs:element name="faultDescription" type = "D2LogicalModel:String" minOccurs = "0"/ >
         <xs:element name="faultCreationTime" type = "D2LogicalModel:DateTime" minOccurs = "0"/ >
         <xs:element name="faultLastUpdateTime" type = "D2LogicalModel:DateTime"/ >
         <xs:element name="faultSeverity" type = "D2LogicalModel:FaultSeverityEnum" minOccurs = "0"/ >
         <xs:element name="faultExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:simpleType name="FaultSeverityEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="low"/ >
         <xs:enumeration value="medium"/ >
         <xs:enumeration value="high"/ >
         <xs:enumeration value="unknown"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="Float" >
      <xs:restriction base="xs:float"/ >
   </xs:simpleType>
   <xs:complexType name="FloatingPointMetreDistanceValue" >
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:DataValue" >
            <xs:sequence>
               <xs:element name="floatingPointMetreDistance" type = "D2LogicalModel:MetresAsFloat"/ >
               <xs:element name="floatingPointMetreDistanceValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
```

```
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="FuelTypeEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="battery"/ >
         <xs:enumeration value="biodiesel"/ >
         <xs:enumeration value="diesel"/ >
         <xs:enumeration value="dieselBatteryHybrid"/ >
         <xs:enumeration value="ethanol"/ >
         <xs:enumeration value="hydrogen"/ >
         <xs:enumeration value="liquidGas"/ >
         <xs:enumeration value="lpg"/ >
         <xs:enumeration value="methane"/ >
         <xs:enumeration value="petrol"/ >
         <xs:enumeration value="petrolBatteryHybrid"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="GrossWeightCharacteristic" >
      <xs:sequence>
         <xs:element name="comparisonOperator" type = "D2LogicalModel:ComparisonOperatorEnum"/ >
         <xs:element name="grossVehicleWeight" type = "D2LogicalModel:Tonnes"/ >
         <xs:element name="grossWeightCharacteristicExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="GroupOfLocations" abstract = "true" >
      <xs:sequence>
         <xs:element name="groupOfLocationsExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="HeaderInformation" >
      <xs:sequence>
         <xs:element name="areaOfInterest" type = "D2LogicalModel:AreaOfInterestEnum" minOccurs = "0"/ >
         <xs:element name="confidentiality" type = "D2LogicalModel:ConfidentialityValueEnum"/ >
         <xs:element name="informationStatus" type = "D2LogicalModel:InformationStatusEnum"/ >
         <xs:element name="urgency" type = "D2LogicalModel:UrgencyEnum" minOccurs = "0"/ >
         <xs:element name="headerInformationExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
      </xs:sequence>
```

```
    </xs:complexType>
    <xs:complexType name=”HeaviestAxleWeightCharacteristic” >
       <xs:sequence>
          <xs:element name=”comparisonOperator” type = ”D2LogicalModel:ComparisonOperatorEnum”/ >
          <xs:element name=”heaviestAxleWeight” type = ”D2LogicalModel:Tonnes”/ >
          <xs:element name=”heaviestAxleWeightCharacteristicExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
       </xs:sequence>
    </xs:complexType>
    <xs:complexType name=”HeightCharacteristic” >
       <xs:sequence>
          <xs:element name=”comparisonOperator” type = ”D2LogicalModel:ComparisonOperatorEnum”/ >
          <xs:element name=”vehicleHeight” type = ”D2LogicalModel:MetresAsFloat”/ >
          <xs:element name=”heightCharacteristicExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
       </xs:sequence>
    </xs:complexType>
    <xs:complexType name=”Humidity” >
       <xs:sequence>
          <xs:element name=”relativeHumidity” type = ”D2LogicalModel:PercentageValue”/ >
          <xs:element name=”humidityExtension” type = ”D2LogicalModel:_ExtensionType” minOccurs = ”0”/ >
       </xs:sequence>
    </xs:complexType>
    <xs:complexType name=”HumidityInformation” >
       <xs:complexContent>
          <xs:extension base=”D2LogicalModel:WeatherData” >
             <xs:sequence>
                <xs:element name=”humidity” type = ”D2LogicalModel:Humidity”/ >
                <xs:element name=”humidityInformationExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:complexType name=”IndividualVehicleDataValues” >
       <xs:complexContent>
          <xs:extension base=”D2LogicalModel:TrafficData” >
             <xs:sequence>
                <xs:element name=”individualVehicleSpeed” type = ”D2LogicalModel:SpeedValue” minOccurs = ”0”/ >
```

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                <xs:element name="arrivalTime" type = "D2LogicalModel:DateTimeValue" minOccurs = "0"/ >
                <xs:element name="exitTime" type = "D2LogicalModel:DateTimeValue" minOccurs = "0"/ >
                <xs:element name="passageDurationTime" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
                <xs:element name="presenceDurationTime" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
                <xs:element name="timeGap" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
                <xs:element name="timeHeadway" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
                <xs:element name="distanceGap" type = "D2LogicalModel:FloatingPointMetreDistanceValue"
minOccurs = "0"/ >
                <xs:element name="distanceHeadway" type = "D2LogicalModel:FloatingPointMetreDistanceValue"
minOccurs = "0"/ >
                <xs:element name="individualVehicleDataValuesExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="InformationStatusEnum" >
       <xs:restriction base="xs:string" >
          <xs:enumeration value="real"/ >
          <xs:enumeration value="securityExercise"/ >
          <xs:enumeration value="technicalExercise"/ >
          <xs:enumeration value="test"/ >
       </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="IntegerMetreDistanceValue" >
       <xs:complexContent>
          <xs:extension base="D2LogicalModel:DataValue" >
             <xs:sequence>
                <xs:element name="integerMetreDistance" type = "D2LogicalModel:MetresAsNonNegativeInteger"/ >
                <xs:element name="integerMetreDistanceValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="IntensityKilogramsPerSquareMetre" >
       <xs:restriction base="D2LogicalModel:Float"/ >
    </xs:simpleType>
```

```
   <xs:simpleType name=”IntensityMillimetresPerHour” >
      <xs:restriction base=”D2LogicalModel:Float”/ >
   </xs:simpleType>
   <xs:complexType name=”KilogramsConcentrationValue” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:DataValue” >
            <xs:sequence>
               <xs:element name=”kilogramsConcentration”
type = ”D2LogicalModel:ConcentrationKilogramsPerCubicMetre”/ >
               <xs:element name=”kilogramsConcentrationValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”KilometresPerHour” >
      <xs:restriction base=”D2LogicalModel:Float”/ >
   </xs:simpleType>
   <xs:complexType name=”LengthCharacteristic” >
      <xs:sequence>
         <xs:element name=”comparisonOperator” type = ”D2LogicalModel:ComparisonOperatorEnum”/ >
         <xs:element name=”vehicleLength” type = ”D2LogicalModel:MetresAsFloat”/ >
         <xs:element name=”lengthCharacteristicExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
      </xs:sequence>
   </xs:complexType>
   <xs:simpleType name=”LoadTypeEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”abnormalLoad”/ >
         <xs:enumeration value=”ammunition”/ >
         <xs:enumeration value=”chemicals”/ >
         <xs:enumeration value=”combustibleMaterials”/ >
         <xs:enumeration value=”corrosiveMaterials”/ >
         <xs:enumeration value=”debris”/ >
         <xs:enumeration value=”empty”/ >
         <xs:enumeration value=”explosiveMaterials”/ >
         <xs:enumeration value=”extraHighLoad”/ >
         <xs:enumeration value=”extraLongLoad”/ >
         <xs:enumeration value=”extraWideLoad”/ >
```

```
            <xs:enumeration value="fuel"/ >
            <xs:enumeration value="glass"/ >
            <xs:enumeration value="goods"/ >
            <xs:enumeration value="hazardousMaterials"/ >
            <xs:enumeration value="liquid"/ >
            <xs:enumeration value="livestock"/ >
            <xs:enumeration value="materials"/ >
            <xs:enumeration value="materialsDangerousForPeople"/ >
            <xs:enumeration value="materialsDangerousForTheEnvironment"/ >
            <xs:enumeration value="materialsDangerousForWater"/ >
            <xs:enumeration value="oil"/ >
            <xs:enumeration value="ordinary"/ >
            <xs:enumeration value="perishableProducts"/ >
            <xs:enumeration value="petrol"/ >
            <xs:enumeration value="pharmaceuticalMaterials"/ >
            <xs:enumeration value="radioactiveMaterials"/ >
            <xs:enumeration value="refuse"/ >
            <xs:enumeration value="toxicMaterials"/ >
            <xs:enumeration value="vehicles"/ >
            <xs:enumeration value="other"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:simpleType name="MetresAsFloat" >
         <xs:restriction base="D2LogicalModel:Float"/ >
      </xs:simpleType>
      <xs:simpleType name="MetresAsNonNegativeInteger" >
         <xs:restriction base="D2LogicalModel:NonNegativeInteger"/ >
      </xs:simpleType>
      <xs:complexType name="MicrogramsConcentrationValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
                  <xs:element name="microgramsConcentration"
type = "D2LogicalModel:ConcentrationMicrogramsPerCubicMetre"/ >
                  <xs:element name="microgramsConcentrationValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
```

```
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="MonthOfYearEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="january"/ >
         <xs:enumeration value="february"/ >
         <xs:enumeration value="march"/ >
         <xs:enumeration value="april"/ >
         <xs:enumeration value="may"/ >
         <xs:enumeration value="june"/ >
         <xs:enumeration value="july"/ >
         <xs:enumeration value="august"/ >
         <xs:enumeration value="september"/ >
         <xs:enumeration value="october"/ >
         <xs:enumeration value="november"/ >
         <xs:enumeration value="december"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="MultilingualString" >
      <xs:sequence>
         <xs:element name="values" >
            <xs:complexType>
               <xs:sequence>
                  <xs:element name="value" type = "D2LogicalModel:MultilingualStringValue"
maxOccurs = "unbounded"/ >
               </xs:sequence>
            </xs:complexType>
         </xs:element>
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="MultilingualStringValue" >
      <xs:simpleContent>
         <xs:extension base="D2LogicalModel:MultilingualStringValueType" >
            <xs:attribute name="lang" type = "xs:language"/ >
         </xs:extension>
      </xs:simpleContent>
   </xs:complexType>
   <xs:simpleType name="MultilingualStringValueType" >
      <xs:restriction base="xs:string" >
```

```
            <xs:maxLength value="1024"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:simpleType name="NonNegativeInteger" >
         <xs:restriction base="xs:nonNegativeInteger"/ >
      </xs:simpleType>
      <xs:complexType name="NumberOfAxlesCharacteristic" >
         <xs:sequence>
            <xs:element name="comparisonOperator" type = "D2LogicalModel:ComparisonOperatorEnum"/ >
            <xs:element name="numberOfAxles" type = "D2LogicalModel:NonNegativeInteger"/ >
            <xs:element name="numberOfAxlesCharacteristicExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:complexType name="OverallPeriod" >
         <xs:sequence>
            <xs:element name="overallStartTime" type = "D2LogicalModel:DateTime"/ >
            <xs:element name="overallEndTime" type = "D2LogicalModel:DateTime" minOccurs = "0"/ >
            <xs:element name="validPeriod" type = "D2LogicalModel:Period" minOccurs = "0"
maxOccurs = "unbounded"/ >
            <xs:element name="exceptionPeriod" type = "D2LogicalModel:Period" minOccurs = "0"
maxOccurs = "unbounded"/ >
            <xs:element name="overallPeriodExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:simpleType name="PassengerCarUnitsPerHour" >
         <xs:restriction base="D2LogicalModel:NonNegativeInteger"/ >
      </xs:simpleType>
      <xs:complexType name="PayloadPublication" abstract = "true" >
         <xs:sequence>
            <xs:element name="payloadPublicationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:complexType name="PcuFlowValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
```

```
                <xs:element name="pcuFlowRate" type = "D2LogicalModel:PassengerCarUnitsPerHour"/ >
                <xs:element name="pcuFlowValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="Percentage" >
      <xs:restriction base="D2LogicalModel:Float"/ >
   </xs:simpleType>
   <xs:complexType name="PercentageValue" >
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:DataValue" >
            <xs:sequence>
               <xs:element name="percentage" type = "D2LogicalModel:Percentage"/ >
               <xs:element name="percentageValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="Period" >
      <xs:sequence>
         <xs:element name="startOfPeriod" type = "D2LogicalModel:DateTime" minOccurs = "0"/ >
         <xs:element name="endOfPeriod" type = "D2LogicalModel:DateTime" minOccurs = "0"/ >
         <xs:element name="periodName" type = "D2LogicalModel:MultilingualString" minOccurs = "0"/ >
         <xs:element name="recurringTimePeriodOfDay" type = "D2LogicalModel:TimePeriodOfDay" minOccurs = "0"
maxOccurs = "unbounded"/ >
         <xs:element name="recurringDayWeekMonthPeriod" type = "D2LogicalModel:DayWeekMonth" minOccurs = "0"
maxOccurs = "unbounded"/ >
         <xs:element name="periodExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:simpleType name="PollutantTypeEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="benzeneTolueneXylene"/ >
         <xs:enumeration value="carbonMonoxide"/ >
         <xs:enumeration value="lead"/ >
         <xs:enumeration value="methane"/ >
```

```
            <xs:enumeration value="nitricOxide"/ >
            <xs:enumeration value="nitrogenDioxide"/ >
            <xs:enumeration value="nitrogenMonoxide"/ >
            <xs:enumeration value="nitrogenOxides"/ >
            <xs:enumeration value="nonMethaneHydrocarbons"/ >
            <xs:enumeration value="ozone"/ >
            <xs:enumeration value="particulates10"/ >
            <xs:enumeration value="polycyclicAromaticHydrocarbons"/ >
            <xs:enumeration value="primaryParticulate"/ >
            <xs:enumeration value="sulphurDioxide"/ >
            <xs:enumeration value="totalHydrocarbons"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="Pollution" >
         <xs:sequence>
            <xs:element name="pollutantType" type = "D2LogicalModel:PollutantTypeEnum"/ >
            <xs:element name="pollutantConcentration" type = "D2LogicalModel:MicrogramsConcentrationValue"
minOccurs = "0"/ >
            <xs:element name="pollutionExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:complexType name="PollutionInformation" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:WeatherData" >
               <xs:sequence>
                  <xs:element name="pollution" type = "D2LogicalModel:Pollution" maxOccurs = "unbounded"/ >
                  <xs:element name="pollutionInformationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="PrecipitationDetail" >
         <xs:sequence>
            <xs:element name="precipitationType" type = "D2LogicalModel:PrecipitationTypeEnum" minOccurs = "0"/ >
            <xs:element name="precipitationIntensity" type = "D2LogicalModel:PrecipitationIntensityValue"
minOccurs = "0"/ >
```

```
          <xs:element name=”depositionDepth” type = ”D2LogicalModel:FloatingPointMetreDistanceValue”
minOccurs = ”0”/ >
          <xs:element name=”precipitationDetailExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
       </xs:sequence>
    </xs:complexType>
    <xs:complexType name=”PrecipitationInformation” >
       <xs:complexContent>
          <xs:extension base=”D2LogicalModel:WeatherData” >
             <xs:sequence>
                <xs:element name=”noPrecipitation” type = ”D2LogicalModel:Boolean” minOccurs = ”0”/ >
                <xs:element name=”precipitationDetail” type = ”D2LogicalModel:PrecipitationDetail”
minOccurs = ”0”/ >
                <xs:element name=”precipitationInformationExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:complexType name=”PrecipitationIntensityValue” >
       <xs:complexContent>
          <xs:extension base=”D2LogicalModel:DataValue” >
             <xs:sequence>
                <xs:element name=”millimetresPerHourIntensity”
type = ”D2LogicalModel:IntensityMillimetresPerHour”/ >
                <xs:element name=”precipitationIntensityValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name=”PrecipitationTypeEnum” >
       <xs:restriction base=”xs:string” >
          <xs:enumeration value=”drizzle”/ >
          <xs:enumeration value=”freezingRain”/ >
          <xs:enumeration value=”hail”/ >
          <xs:enumeration value=”rain”/ >
          <xs:enumeration value=”sleet”/ >
          <xs:enumeration value=”snow”/ >
```

```
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   </xs:simpleType>
   <xs:complexType name="ReferenceSettings" >
      <xs:sequence>
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type = "D2LogicalModel:_PredefinedNonOrderedLocationGroupVersionedReference" minOccurs = "0"/ >
         <xs:element name="trafficStatusDefault" type = "D2LogicalModel:TrafficStatusEnum" minOccurs = "0"/ >
         <xs:element name="referenceSettingsExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name="RoadSurfaceConditionInformation" >
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:WeatherData" >
            <xs:sequence>
               <xs:element name="weatherRelatedRoadConditionType"
type = "D2LogicalModel:WeatherRelatedRoadConditionTypeEnum" minOccurs = "0" maxOccurs = "unbounded"/ >
               <xs:element name="roadSurfaceConditionMeasurements"
type = "D2LogicalModel:RoadSurfaceConditionMeasurements"/ >
               <xs:element name="roadSurfaceConditionInformationExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="RoadSurfaceConditionMeasurements" >
      <xs:sequence>
         <xs:element name="roadSurfaceTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
         <xs:element name="protectionTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
         <xs:element name="deIcingApplicationRate" type = "D2LogicalModel:ApplicationRateValue"
minOccurs = "0"/ >
         <xs:element name="deIcingConcentration" type = "D2LogicalModel:KilogramsConcentrationValue"
minOccurs = "0"/ >
         <xs:element name="depthOfSnow" type = "D2LogicalModel:FloatingPointMetreDistanceValue"
minOccurs = "0"/ >
         <xs:element name="waterFilmThickness" type = "D2LogicalModel:FloatingPointMetreDistanceValue"
minOccurs = "0"/ >
         <xs:element name="roadSurfaceConditionMeasurementsExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
```

```
      </xs:sequence>
   </xs:complexType>
   <xs:simpleType name="Seconds" >
      <xs:restriction base="D2LogicalModel:Float"/ >
   </xs:simpleType>
   <xs:complexType name="Source" >
      <xs:sequence>
         <xs:element name="sourceCountry" type = "D2LogicalModel:CountryEnum" minOccurs = "0"/ >
         <xs:element name="sourceIdentification" type = "D2LogicalModel:String" minOccurs = "0"/ >
         <xs:element name="sourceName" type = "D2LogicalModel:MultilingualString" minOccurs = "0"/ >
         <xs:element name="sourceType" type = "D2LogicalModel:SourceTypeEnum" minOccurs = "0"/ >
         <xs:element name="reliable" type = "D2LogicalModel:Boolean" minOccurs = "0"/ >
         <xs:element name="sourceExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:simpleType name="SourceTypeEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="automobileClubPatrol"/ >
         <xs:enumeration value="cameraObservation"/ >
         <xs:enumeration value="freightVehicleOperator"/ >
         <xs:enumeration value="inductionLoopMonitoringStation"/ >
         <xs:enumeration value="infraredMonitoringStation"/ >
         <xs:enumeration value="microwaveMonitoringStation"/ >
         <xs:enumeration value="mobileTelephoneCaller"/ >
         <xs:enumeration value="nonPoliceEmergencyServicePatrol"/ >
         <xs:enumeration value="otherInformation"/ >
         <xs:enumeration value="otherOfficialVehicle"/ >
         <xs:enumeration value="policePatrol"/ >
         <xs:enumeration value="privateBreakdownService"/ >
         <xs:enumeration value="publicAndPrivateUtilities"/ >
         <xs:enumeration value="registeredMotoristObserver"/ >
         <xs:enumeration value="roadAuthorities"/ >
         <xs:enumeration value="roadOperatorPatrol"/ >
         <xs:enumeration value="roadsideTelephoneCaller"/ >
         <xs:enumeration value="spotterAircraft"/ >
         <xs:enumeration value="trafficMonitoringStation"/ >
         <xs:enumeration value="transitOperator"/ >
         <xs:enumeration value="vehicleProbeMeasurement"/ >
         <xs:enumeration value="videoProcessingMonitoringStation"/ >
```

```
    </xs:restriction>
</xs:simpleType>
<xs:complexType name="SpeedPercentile" >
    <xs:sequence>
        <xs:element name="vehiclePercentage" type = "D2LogicalModel:PercentageValue"/ >
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        <xs:element name="speedPercentileExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
    </xs:sequence>
</xs:complexType>
<xs:complexType name="SpeedValue" >
    <xs:complexContent>
        <xs:extension base="D2LogicalModel:DataValue" >
            <xs:sequence>
                <xs:element name="speed" type = "D2LogicalModel:KilometresPerHour"/ >
                <xs:element name="speedValueExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
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    <xs:restriction base="xs:string" >
        <xs:maxLength value="1024"/ >
    </xs:restriction>
</xs:simpleType>
<xs:complexType name="Temperature" >
    <xs:sequence>
        <xs:element name="airTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
        <xs:element name="dewPointTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
        <xs:element name="maximumTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
        <xs:element name="minimumTemperature" type = "D2LogicalModel:TemperatureValue" minOccurs = "0"/ >
        <xs:element name="temperatureExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
    </xs:sequence>
</xs:complexType>
<xs:simpleType name="TemperatureCelsius" >
    <xs:restriction base="D2LogicalModel:Float"/ >
</xs:simpleType>
<xs:complexType name="TemperatureInformation" >
    <xs:complexContent>
```

```
          <xs:extension base=”D2LogicalModel:WeatherData” >
             <xs:sequence>
                <xs:element name=”temperature” type = ”D2LogicalModel:Temperature”/ >
                <xs:element name=”temperatureInformationExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:complexType name=”TemperatureValue” >
       <xs:complexContent>
          <xs:extension base=”D2LogicalModel:DataValue” >
             <xs:sequence>
                <xs:element name=”temperature” type = ”D2LogicalModel:TemperatureCelsius”/ >
                <xs:element name=”temperatureValueExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
             </xs:sequence>
          </xs:extension>
       </xs:complexContent>
    </xs:complexType>
    <xs:complexType name=”TimePeriodOfDay” abstract = ”true” >
       <xs:sequence>
          <xs:element name=”timePeriodOfDayExtension” type = ”D2LogicalModel:_ExtensionType” minOccurs = ”0”/ >
       </xs:sequence>
    </xs:complexType>
    <xs:simpleType name=”TimePrecisionEnum” >
       <xs:restriction base=”xs:string” >
          <xs:enumeration value=”tenthsOfSecond”/ >
          <xs:enumeration value=”second”/ >
          <xs:enumeration value=”minute”/ >
          <xs:enumeration value=”quarterHour”/ >
          <xs:enumeration value=”halfHour”/ >
          <xs:enumeration value=”hour”/ >
       </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name=”Tonnes” >
       <xs:restriction base=”D2LogicalModel:Float”/ >
    </xs:simpleType>
    <xs:complexType name=”TrafficConcentration” >
```

```
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:TrafficData” >
            <xs:sequence>
               <xs:element name=”concentration” type = ”D2LogicalModel:ConcentrationOfVehiclesValue”
minOccurs = ”0”/ >
               <xs:element name=”occupancy” type = ”D2LogicalModel:PercentageValue” minOccurs = ”0”/ >
               <xs:element name=”trafficConcentrationExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name=”TrafficData” abstract = ”true” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:BasicData” >
            <xs:sequence>
               <xs:element name=”forVehiclesWithCharacteristicsOf” type = ”D2LogicalModel:VehicleCharacteristics”
minOccurs = ”0”/ >
               <xs:element name=”trafficDataExtension” type = ”D2LogicalModel:_ExtensionType” minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name=”TrafficFlow” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:TrafficData” >
            <xs:sequence>
               <xs:element name=”axleFlow” type = ”D2LogicalModel:AxleFlowValue” minOccurs = ”0”/ >
               <xs:element name=”pcuFlow” type = ”D2LogicalModel:PcuFlowValue” minOccurs = ”0”/ >
               <xs:element name=”percentageLongVehicles” type = ”D2LogicalModel:PercentageValue”
minOccurs = ”0”/ >
               <xs:element name=”vehicleFlow” type = ”D2LogicalModel:VehicleFlowValue” minOccurs = ”0”/ >
               <xs:element name=”trafficFlowExtension” type = ”D2LogicalModel:_ExtensionType” minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name=”TrafficHeadway” >
```

```
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:TrafficData" >
            <xs:sequence>
               <xs:element name="averageDistanceHeadway" type = "D2LogicalModel:FloatingPointMetreDistanceValue"
minOccurs = "0"/ >
               <xs:element name="averageTimeHeadway" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
               <xs:element name="trafficHeadwayExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="TrafficSpeed" >
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:TrafficData" >
            <xs:sequence>
               <xs:element name="averageVehicleSpeed" type = "D2LogicalModel:SpeedValue" minOccurs = "0"/ >
               <xs:element name="speedPercentile" type = "D2LogicalModel:SpeedPercentile" minOccurs = "0"/ >
               <xs:element name="trafficSpeedExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="TrafficStatus" >
      <xs:complexContent>
         <xs:extension base="D2LogicalModel:BasicData" >
            <xs:sequence>
               <xs:element name="trafficTrendType" type = "D2LogicalModel:TrafficTrendTypeEnum"
minOccurs = "0"/ >
               <xs:element name="trafficStatus" type = "D2LogicalModel:TrafficStatusValue" minOccurs = "0"/ >
               <xs:element name="trafficStatusExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="TrafficStatusEnum" >
      <xs:restriction base="xs:string" >
```

```
            <xs:enumeration value="impossible"/ >
            <xs:enumeration value="congested"/ >
            <xs:enumeration value="heavy"/ >
            <xs:enumeration value="freeFlow"/ >
            <xs:enumeration value="unknown"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="TrafficStatusValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
                  <xs:element name="trafficStatusValue" type = "D2LogicalModel:TrafficStatusEnum"/ >
                  <xs:element name="trafficStatusValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:simpleType name="TrafficTrendTypeEnum" >
         <xs:restriction base="xs:string" >
            <xs:enumeration value="trafficBuildingUp"/ >
            <xs:enumeration value="trafficEasing"/ >
            <xs:enumeration value="trafficStable"/ >
            <xs:enumeration value="unknown"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="TravelTimeData" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:BasicData" >
               <xs:sequence>
                  <xs:element name="travelTimeTrendType" type = "D2LogicalModel:TravelTimeTrendTypeEnum"
minOccurs = "0"/ >
                  <xs:element name="travelTimeType" type = "D2LogicalModel:TravelTimeTypeEnum" minOccurs = "0"/ >
                  <xs:element name="vehicleType" type = "D2LogicalModel:VehicleTypeEnum" minOccurs = "0"
maxOccurs = "unbounded"/ >
                  <xs:element name="travelTime" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
                  <xs:element name="freeFlowTravelTime" type = "D2LogicalModel:DurationValue" minOccurs = "0"/ >
```

```
                <xs:element name="normallyExpectedTravelTime" type = "D2LogicalModel:DurationValue"
minOccurs = "0"/ >
                <xs:element name="freeFlowSpeed" type = "D2LogicalModel:SpeedValue" minOccurs = "0"/ >
                <xs:element name="travelTimeDataExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="TravelTimeTrendTypeEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="decreasing"/ >
         <xs:enumeration value="increasing"/ >
         <xs:enumeration value="stable"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="TravelTimeTypeEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="best"/ >
         <xs:enumeration value="estimated"/ >
         <xs:enumeration value="instantaneous"/ >
         <xs:enumeration value="reconstituted"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="UrgencyEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="extremelyUrgent"/ >
         <xs:enumeration value="urgent"/ >
         <xs:enumeration value="normalUrgency"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="Validity" >
      <xs:sequence>
         <xs:element name="validityStatus" type = "D2LogicalModel:ValidityStatusEnum"/ >
         <xs:element name="overrunning" type = "D2LogicalModel:Boolean" minOccurs = "0"/ >
         <xs:element name="validityTimeSpecification" type = "D2LogicalModel:OverallPeriod"/ >
         <xs:element name="validityExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
```

```
   <xs:simpleType name="ValidityStatusEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="active"/ >
         <xs:enumeration value="suspended"/ >
         <xs:enumeration value="definedByValidityTimeSpec"/ >
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="VehicleCharacteristics" >
      <xs:sequence>
         <xs:element name="fuelType" type = "D2LogicalModel:FuelTypeEnum" minOccurs = "0"/ >
         <xs:element name="loadType" type = "D2LogicalModel:LoadTypeEnum" minOccurs = "0"/ >
         <xs:element name="vehicleEquipment" type = "D2LogicalModel:VehicleEquipmentEnum" minOccurs = "0"/ >
         <xs:element name="vehicleType" type = "D2LogicalModel:VehicleTypeEnum" minOccurs = "0"
maxOccurs = "unbounded"/ >
         <xs:element name="vehicleUsage" type = "D2LogicalModel:VehicleUsageEnum" minOccurs = "0"/ >
         <xs:element name="grossWeightCharacteristic" type = "D2LogicalModel:GrossWeightCharacteristic"
minOccurs = "0" maxOccurs = "2"/ >
         <xs:element name="heightCharacteristic" type = "D2LogicalModel:HeightCharacteristic" minOccurs = "0"
maxOccurs = "2"/ >
         <xs:element name="lengthCharacteristic" type = "D2LogicalModel:LengthCharacteristic" minOccurs = "0"
maxOccurs = "2"/ >
         <xs:element name="widthCharacteristic" type = "D2LogicalModel:WidthCharacteristic" minOccurs = "0"
maxOccurs = "2"/ >
         <xs:element name="heaviestAxleWeightCharacteristic"
type = "D2LogicalModel:HeaviestAxleWeightCharacteristic" minOccurs = "0" maxOccurs = "2"/ >
         <xs:element name="numberOfAxlesCharacteristic" type = "D2LogicalModel:NumberOfAxlesCharacteristic"
minOccurs = "0" maxOccurs = "2"/ >
         <xs:element name="vehicleCharacteristicsExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
      </xs:sequence>
   </xs:complexType>
   <xs:simpleType name="VehicleEquipmentEnum" >
      <xs:restriction base="xs:string" >
         <xs:enumeration value="notUsingSnowChains"/ >
         <xs:enumeration value="notUsingSnowChainsOrTyres"/ >
         <xs:enumeration value="snowChainsInUse"/ >
         <xs:enumeration value="snowTyresInUse"/ >
         <xs:enumeration value="snowChainsOrTyresInUse"/ >
```

```
            <xs:enumeration value="withoutSnowTyresOrChainsOnBoard"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="VehicleFlowValue" >
         <xs:complexContent>
            <xs:extension base="D2LogicalModel:DataValue" >
               <xs:sequence>
                  <xs:element name="vehicleFlowRate" type = "D2LogicalModel:VehiclesPerHour"/ >
                  <xs:element name="vehicleFlowValueExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
               </xs:sequence>
            </xs:extension>
         </xs:complexContent>
      </xs:complexType>
      <xs:simpleType name="VehiclesPerHour" >
         <xs:restriction base="D2LogicalModel:NonNegativeInteger"/ >
      </xs:simpleType>
      <xs:simpleType name="VehicleTypeEnum" >
         <xs:restriction base="xs:string" >
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            <xs:enumeration value="anyVehicle"/ >
            <xs:enumeration value="articulatedVehicle"/ >
            <xs:enumeration value="bicycle"/ >
            <xs:enumeration value="bus"/ >
            <xs:enumeration value="car"/ >
            <xs:enumeration value="caravan"/ >
            <xs:enumeration value="carOrLightVehicle"/ >
            <xs:enumeration value="carWithCaravan"/ >
            <xs:enumeration value="carWithTrailer"/ >
            <xs:enumeration value="constructionOrMaintenanceVehicle"/ >
            <xs:enumeration value="fourWheelDrive"/ >
            <xs:enumeration value="highSidedVehicle"/ >
            <xs:enumeration value="lorry"/ >
            <xs:enumeration value="moped"/ >
            <xs:enumeration value="motorcycle"/ >
            <xs:enumeration value="motorcycleWithSideCar"/ >
            <xs:enumeration value="motorscooter"/ >
            <xs:enumeration value="tanker"/ >
            <xs:enumeration value="threeWheeledVehicle"/ >
```

```
      <xs:enumeration value="trailer"/ >
      <xs:enumeration value="tram"/ >
      <xs:enumeration value="twoWheeledVehicle"/ >
      <xs:enumeration value="van"/ >
      <xs:enumeration value="vehicleWithCatalyticConverter"/ >
      <xs:enumeration value="vehicleWithoutCatalyticConverter"/ >
      <xs:enumeration value="vehicleWithCaravan"/ >
      <xs:enumeration value="vehicleWithTrailer"/ >
      <xs:enumeration value="withEvenNumberedRegistrationPlates"/ >
      <xs:enumeration value="withOddNumberedRegistrationPlates"/ >
      <xs:enumeration value="other"/ >
   </xs:restriction>
</xs:simpleType>
<xs:simpleType name="VehicleUsageEnum" >
   <xs:restriction base="xs:string" >
      <xs:enumeration value="agricultural"/ >
      <xs:enumeration value="commercial"/ >
      <xs:enumeration value="emergencyServices"/ >
      <xs:enumeration value="military"/ >
      <xs:enumeration value="nonCommercial"/ >
      <xs:enumeration value="patrol"/ >
      <xs:enumeration value="recoveryServices"/ >
      <xs:enumeration value="roadMaintenanceOrConstruction"/ >
      <xs:enumeration value="roadOperator"/ >
      <xs:enumeration value="taxi"/ >
   </xs:restriction>
</xs:simpleType>
<xs:complexType name="VersionedReference" >
   <xs:attribute name="id" type = "xs:string" use = "required"/ >
   <xs:attribute name="version" type = "xs:string" use = "required"/ >
</xs:complexType>
<xs:complexType name="Visibility" >
   <xs:sequence>
      <xs:element name="minimumVisibilityDistance" type = "D2LogicalModel:IntegerMetreDistanceValue"/ >
      <xs:element name="visibilityExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
   </xs:sequence>
</xs:complexType>
<xs:complexType name="VisibilityInformation" >
```

```
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:WeatherData” >
            <xs:sequence>
               <xs:element name=”visibility” type = ”D2LogicalModel:Visibility”/ >
               <xs:element name=”visibilityInformationExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name=”WeatherData” abstract = ”true” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:BasicData” >
            <xs:sequence>
               <xs:element name=”weatherDataExtension” type = ”D2LogicalModel:_ExtensionType” minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name=”WeatherRelatedRoadConditionTypeEnum” >
      <xs:restriction base=”xs:string” >
         <xs:enumeration value=”blackIce”/ >
         <xs:enumeration value=”deepSnow”/ >
         <xs:enumeration value=”dry”/ >
         <xs:enumeration value=”freezingOfWetRoads”/ >
         <xs:enumeration value=”freezingPavements”/ >
         <xs:enumeration value=”freezingRain”/ >
         <xs:enumeration value=”freshSnow”/ >
         <xs:enumeration value=”ice”/ >
         <xs:enumeration value=”iceBuildUp”/ >
         <xs:enumeration value=”iceWithWheelBarTracks”/ >
         <xs:enumeration value=”icyPatches”/ >
         <xs:enumeration value=”looseSnow”/ >
         <xs:enumeration value=”normalWinterConditionsForPedestrians”/ >
         <xs:enumeration value=”packedSnow”/ >
         <xs:enumeration value=”roadSurfaceMelting”/ >
         <xs:enumeration value=”slipperyRoad”/ >
         <xs:enumeration value=”slushOnRoad”/ >
         <xs:enumeration value=”slushStrings”/ >
```

```
            <xs:enumeration value="snowDrifts"/ >
            <xs:enumeration value="snowOnPavement"/ >
            <xs:enumeration value="snowOnTheRoad"/ >
            <xs:enumeration value="surfaceWater"/ >
            <xs:enumeration value="wet"/ >
            <xs:enumeration value="wetAndIcyRoad"/ >
            <xs:enumeration value="wetIcyPavement"/ >
            <xs:enumeration value="other"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:simpleType name="WeekOfMonthEnum" >
         <xs:restriction base="xs:string" >
            <xs:enumeration value="firstWeekOfMonth"/ >
            <xs:enumeration value="secondWeekOfMonth"/ >
            <xs:enumeration value="thirdWeekOfMonth"/ >
            <xs:enumeration value="fourthWeekOfMonth"/ >
            <xs:enumeration value="fifthWeekOfMonth"/ >
         </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="WidthCharacteristic" >
         <xs:sequence>
            <xs:element name="comparisonOperator" type = "D2LogicalModel:ComparisonOperatorEnum"/ >
            <xs:element name="vehicleWidth" type = "D2LogicalModel:MetresAsFloat"/ >
            <xs:element name="widthCharacteristicExtension" type = "D2LogicalModel:_ExtensionType"
minOccurs = "0"/ >
         </xs:sequence>
      </xs:complexType>
      <xs:complexType name="Wind" >
         <xs:sequence>
            <xs:element name="windMeasurementHeight" type = "D2LogicalModel:MetresAsNonNegativeInteger"
minOccurs = "0"/ >
            <xs:element name="windSpeed" type = "D2LogicalModel:SpeedValue" minOccurs = "0"/ >
            <xs:element name="maximumWindSpeed" type = "D2LogicalModel:SpeedValue" minOccurs = "0"/ >
            <xs:element name="windDirectionBearing" type = "D2LogicalModel:DirectionBearingValue"
minOccurs = "0"/ >
            <xs:element name="windDirectionCompass" type = "D2LogicalModel:DirectionCompassValue"
minOccurs = "0"/ >
            <xs:element name="windExtension" type = "D2LogicalModel:_ExtensionType" minOccurs = "0"/ >
```

```
      </xs:sequence>
   </xs:complexType>
   <xs:complexType name=”WindInformation” >
      <xs:complexContent>
         <xs:extension base=”D2LogicalModel:WeatherData” >
            <xs:sequence>
               <xs:element name=”wind” type = ”D2LogicalModel:Wind”/ >
               <xs:element name=”windInformationExtension” type = ”D2LogicalModel:_ExtensionType”
minOccurs = ”0”/ >
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
</xs:schema>
```

Annex E
(informative)

Examples of Measurement Site Table Publications, Measured Data Publications and Elaborated Data Publications in XML

E.1 Example of Measurement Site Table Publication

```
<?xml version=”1.0” encoding = ”utf-8”? >
<d2LogicalModel xmlns:xsi=”http://www.w3.org/2001/XMLSchema-instance”
xmlns:xsd = ”http://www.w3.org/2001/XMLSchema” modelBaseVersion = ”2” xmlns = ”http://datex2.eu/schema/2/2_0” >
   <exchange>
      <supplierIdentification>
         <country>se</country>
         <nationalIdentifier>STA</nationalIdentifier>
      </supplierIdentification>
   </exchange>
   <payloadPublication xsi:type=”MeasurementSiteTablePublication” lang = ”sv” >
      <feedType>WEATHERMEASUREMETADATA</feedType>
      <publicationTime>2011-09-20T16:20:08.3503864+02:00</publicationTime>
      <publicationCreator>
         <country>se</country>
         <nationalIdentifier>STA</nationalIdentifier>
      </publicationCreator>
      <headerInformation>
         <confidentiality>noRestriction</confidentiality>
         <informationStatus>real</informationStatus>
      </headerInformation>
      <measurementSiteTable id=”SE_SRA_VVIS_Measurementspoints” version = ”VVIS_2009_11_9_10_33_32” >
         <measurementSiteRecord id=”SE_SRA_VVIS202” >
            <measurementSiteName>
               <values>
                  <value lang=”sv” > Mölnbo < /value >
               </values>
```

```
</measurementSiteName>
<measurementSpecificCharacteristics index=”1” >
   <measurementSpecificCharacteristics>
      <specificMeasurementValueType>windInformation</specificMeasurementValueType>
   </measurementSpecificCharacteristics>
</measurementSpecificCharacteristics>
<measurementSpecificCharacteristics index=”2” >
   <measurementSpecificCharacteristics>
      <specificMeasurementValueType>windInformation</specificMeasurementValueType>
   </measurementSpecificCharacteristics>
</measurementSpecificCharacteristics>
<measurementSpecificCharacteristics index=”3” >
   <measurementSpecificCharacteristics>
      <specificMeasurementValueType>temperatureInformation</specificMeasurementValueType>
   </measurementSpecificCharacteristics>
</measurementSpecificCharacteristics>
<measurementSpecificCharacteristics index=”4” >
   <measurementSpecificCharacteristics>
      <specificMeasurementValueType>roadSurfaceConditionInformation</specificMeasurementValueType>
   </measurementSpecificCharacteristics>
</measurementSpecificCharacteristics>
<measurementSpecificCharacteristics index=”5” >
   <measurementSpecificCharacteristics>
      <specificMeasurementValueType>precipitationInformation</specificMeasurementValueType>
   </measurementSpecificCharacteristics>
</measurementSpecificCharacteristics>
<measurementSpecificCharacteristics index=”6” >
   <measurementSpecificCharacteristics>
      <specificMeasurementValueType>precipitationInformation</specificMeasurementValueType>
   </measurementSpecificCharacteristics>
</measurementSpecificCharacteristics>
<measurementSpecificCharacteristics index=”7” >
   <measurementSpecificCharacteristics>
      <specificMeasurementValueType>windInformation</specificMeasurementValueType>
   </measurementSpecificCharacteristics>
</measurementSpecificCharacteristics>
<measurementSpecificCharacteristics index=”8” >
   <measurementSpecificCharacteristics>
      <specificMeasurementValueType>precipitationInformation</specificMeasurementValueType>
```

```
      </measurementSpecificCharacteristics>
   </measurementSpecificCharacteristics>
</measurementSiteRecord>
<measurementSiteRecord id=”SE_SRA_VVIS203” >
   <measurementSiteName>
      <values>
         <value lang=”sv” > Södertälje < /value >
      </values>
   </measurementSiteName>
   <measurementSpecificCharacteristics index=”1” >
      <measurementSpecificCharacteristics>
         <specificMeasurementValueType>windInformation</specificMeasurementValueType>
      </measurementSpecificCharacteristics>
   </measurementSpecificCharacteristics>
   <measurementSpecificCharacteristics index=”2” >
      <measurementSpecificCharacteristics>
         <specificMeasurementValueType>windInformation</specificMeasurementValueType>
      </measurementSpecificCharacteristics>
   </measurementSpecificCharacteristics>
   <measurementSpecificCharacteristics index=”3” >
      <measurementSpecificCharacteristics>
         <specificMeasurementValueType>temperatureInformation</specificMeasurementValueType>
      </measurementSpecificCharacteristics>
   </measurementSpecificCharacteristics>
   <measurementSpecificCharacteristics index=”4” >
      <measurementSpecificCharacteristics>
         <specificMeasurementValueType>roadSurfaceConditionInformation</specificMeasurementValueType>
      </measurementSpecificCharacteristics>
   </measurementSpecificCharacteristics>
   <measurementSpecificCharacteristics index=”5” >
      <measurementSpecificCharacteristics>
         <specificMeasurementValueType>precipitationInformation</specificMeasurementValueType>
      </measurementSpecificCharacteristics>
   </measurementSpecificCharacteristics>
   <measurementSpecificCharacteristics index=”6” >
      <measurementSpecificCharacteristics>
         <specificMeasurementValueType>precipitationInformation</specificMeasurementValueType>
      </measurementSpecificCharacteristics>
```

```
            </measurementSpecificCharacteristics>
            <measurementSpecificCharacteristics index="7" >
               <measurementSpecificCharacteristics>
                  <specificMeasurementValueType>windInformation</specificMeasurementValueType>
               </measurementSpecificCharacteristics>
            </measurementSpecificCharacteristics>
            <measurementSpecificCharacteristics index="8" >
               <measurementSpecificCharacteristics>
                  <specificMeasurementValueType>precipitationInformation</specificMeasurementValueType>
               </measurementSpecificCharacteristics>
            </measurementSpecificCharacteristics>
         </measurementSiteRecord>
      </measurementSiteTable>
   </payloadPublication>
</d2LogicalModel>
```

E.2 Example of Measured Data Publication

```
<?xml version="1.0" encoding = "utf-8"? >
<d2LogicalModel xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd = "http://www.w3.org/2001/XMLSchema" modelBaseVersion = "2" xmlns = "http://datex2.eu/schema/2/2_0" >
   <exchange>
      <supplierIdentification>
         <country>se</country>
         <nationalIdentifier>STA</nationalIdentifier>
      </supplierIdentification>
   </exchange>
   <payloadPublication xsi:type="MeasuredDataPublication" lang = "sv" >
      <feedType>WEATHERMEASUREDATA2</feedType>
      <publicationTime>2011-09-21T15:59:20.8612151+02:00</publicationTime>
      <publicationCreator>
         <country>se</country>
         <nationalIdentifier>STA</nationalIdentifier>
      </publicationCreator>
      <measurementSiteTableReference id="SE_STA_VVIS" version = "0" targetClass = "MeasurementSiteTable"/ >
      <headerInformation>
         <confidentiality>noRestriction</confidentiality>
         <informationStatus>real</informationStatus>
      </headerInformation>
```

```
<siteMeasurements>
    <measurementSiteReference id=”SE_STA_VVIS202” version = ”0” targetClass = ”MeasurementSiteRecord”/ >
    <measurementTimeDefault>2011-09-21T15:30:00+02:00</measurementTimeDefault>
    <measuredValue index=”1” >
        <measuredValue>
            <measurementEquipmentFault>
                <faultLastUpdateTime>2011-09-21T15:59:21.0192309+02:00</faultLastUpdateTime>
                <measurementEquipmentFault>noDataValuesAvailable</measurementEquipmentFault>
            </measurementEquipmentFault>
        </measuredValue>
    </measuredValue>
    <measuredValue index=”2” >
        <measuredValue>
            <measurementEquipmentFault>
                <faultLastUpdateTime>2011-09-21T15:59:21.0192309+02:00</faultLastUpdateTime>
                <measurementEquipmentFault>noDataValuesAvailable</measurementEquipmentFault>
            </measurementEquipmentFault>
        </measuredValue>
    </measuredValue>
    <measuredValue index=”3” >
        <measuredValue>
            <basicData xsi:type=”TemperatureInformation” >
                <temperature>
                    <airTemperature>
                        <temperature>13.4</temperature>
                    </airTemperature>
                </temperature>
            </basicData>
        </measuredValue>
    </measuredValue>
    <measuredValue index=”4” >
        <measuredValue>
            <basicData xsi:type=”RoadSurfaceConditionInformation” >
                <roadSurfaceConditionMeasurements>
                    <roadSurfaceTemperature>
                        <temperature>13.6</temperature>
                    </roadSurfaceTemperature>
                </roadSurfaceConditionMeasurements>
```

```
        </basicData>
    </measuredValue>
</measuredValue>
<measuredValue index=”5” >
    <measuredValue>
        <basicData xsi:type=”PrecipitationInformation” >
            <precipitationDetail>
                <precipitationType>rain</precipitationType>
            </precipitationDetail>
        </basicData>
    </measuredValue>
</measuredValue>
<measuredValue index=”6” >
    <measuredValue>
        <basicData xsi:type=”PrecipitationInformation” >
            <precipitationDetail>
                <precipitationIntensity>
                    <millimetresPerHourIntensity>0</millimetresPerHourIntensity>
                </precipitationIntensity>
            </precipitationDetail>
        </basicData>
    </measuredValue>
</measuredValue>
<measuredValue index=”7” >
    <measuredValue>
        <measurementEquipmentFault>
            <faultLastUpdateTime>2011-09-21T15:59:21.0192309+02:00</faultLastUpdateTime>
            <measurementEquipmentFault>noDataValuesAvailable</measurementEquipmentFault>
        </measurementEquipmentFault>
    </measuredValue>
</measuredValue>
<measuredValue index=”8” >
    <measuredValue>
        <basicData xsi:type=”HumidityInformation” >
            <humidity>
                <relativeHumidity>
                    <percentage>89</percentage>
                </relativeHumidity>
            </humidity>
```

```
            </basicData>
         </measuredValue>
      </measuredValue>
   </siteMeasurements>
   <siteMeasurements>
      <measurementSiteReference id="SE_STA_VVIS203" version = "0" targetClass = "MeasurementSiteRecord"/ >
      <measurementTimeDefault>2011-09-21T15:35:00+02:00</measurementTimeDefault>
      <measuredValue index="1" >
         <measuredValue>
            <measurementEquipmentFault>
               <faultLastUpdateTime>2011-09-21T15:59:21.0192309+02:00</faultLastUpdateTime>
               <measurementEquipmentFault>noDataValuesAvailable</measurementEquipmentFault>
            </measurementEquipmentFault>
         </measuredValue>
      </measuredValue>
      <measuredValue index="2" >
         <measuredValue>
            <measurementEquipmentFault>
               <faultLastUpdateTime>2011-09-21T15:59:21.0192309+02:00</faultLastUpdateTime>
               <measurementEquipmentFault>noDataValuesAvailable</measurementEquipmentFault>
            </measurementEquipmentFault>
         </measuredValue>
      </measuredValue>
      <measuredValue index="3" >
         <measuredValue>
            <measurementEquipmentFault>
               <faultLastUpdateTime>2011-09-21T15:59:21.0192309+02:00</faultLastUpdateTime>
               <measurementEquipmentFault>noDataValuesAvailable</measurementEquipmentFault>
            </measurementEquipmentFault>
         </measuredValue>
      </measuredValue>
      <measuredValue index="4" >
         <measuredValue>
            <measurementEquipmentFault>
               <faultLastUpdateTime>2011-09-21T15:59:21.0192309+02:00</faultLastUpdateTime>
               <measurementEquipmentFault>noDataValuesAvailable</measurementEquipmentFault>
            </measurementEquipmentFault>
         </measuredValue>
```

```
            </measuredValue>
            <measuredValue index=”5” >
               <measuredValue>
                  <basicData xsi:type=”PrecipitationInformation” >
                     <noPrecipitation>true</noPrecipitation>
                     <precipitationDetail/>
                  </basicData>
               </measuredValue>
            </measuredValue>
            <measuredValue index=”6” >
               <measuredValue>
                  <basicData xsi:type=”PrecipitationInformation” >
                     <noPrecipitation>true</noPrecipitation>
                     <precipitationDetail/>
                  </basicData>
               </measuredValue>
            </measuredValue>
            <measuredValue index=”7” >
               <measuredValue>
                  <measurementEquipmentFault>
                     <faultLastUpdateTime>2011-09-21T15:59:21.0192309+02:00</faultLastUpdateTime>
                     <measurementEquipmentFault>noDataValuesAvailable</measurementEquipmentFault>
                  </measurementEquipmentFault>
               </measuredValue>
            </measuredValue>
            <measuredValue index=”8” >
               <measuredValue>
                  <measurementEquipmentFault>
                     <faultLastUpdateTime>2011-09-21T15:59:21.0192309+02:00</faultLastUpdateTime>
                     <measurementEquipmentFault>noDataValuesAvailable</measurementEquipmentFault>
                  </measurementEquipmentFault>
               </measuredValue>
            </measuredValue>
         </siteMeasurements>
      </payloadPublication>
</d2LogicalModel>
```

E.3 Example of Elaborated Data Publication

```
<?xml version=”1.0” encoding = ”UTF-8”? >
<d2LogicalModel modelBaseVersion=”2” xmlns = ”http://datex2.eu/schema/2/2_0”
xmlns:xsi = ”http://www.w3.org/2001/XMLSchema-instance” xsi:schemaLocation = ”http://datex2.eu/schema/2/2_0
..\..\Schema\DATEXIISchema_2_2_0.xsd” >
   <exchange>
      <supplierIdentification>
         <country>fr</country>
         <nationalIdentifier>X</nationalIdentifier>
      </supplierIdentification>
   </exchange>
   <payloadPublication xsi:type=”ElaboratedDataPublication” lang = ”fr” >
      <publicationTime>2011-08-01T18:06:00+02:00</publicationTime>
      <publicationCreator>
         <country>fr</country>
         <nationalIdentifier>X2</nationalIdentifier>
      </publicationCreator>
      <headerInformation>
         <confidentiality>noRestriction</confidentiality>
         <informationStatus>real</informationStatus>
      </headerInformation>
      <elaboratedData>
         <basicData xsi:type=”TravelTimeData” >
            <measurementOrCalculationTime>2011-08-01T18:03:54+02:00</measurementOrCalculationTime>
            <pertinentLocation xsi:type=”Linear” >
               <alertCLinear xsi:type=”AlertCMethod2Linear” >
                  <alertCLocationCountryCode>F</alertCLocationCountryCode>
                  <alertCLocationTableNumber>32</alertCLocationTableNumber>
                  <alertCLocationTableVersion>9</alertCLocationTableVersion>
                  <alertCDirection>
                     <alertCDirectionCoded>positive</alertCDirectionCoded>
                  </alertCDirection>
                  <alertCMethod2PrimaryPointLocation>
                     <alertCLocation>
                        <specificLocation>1243</specificLocation>
                     </alertCLocation>
                  </alertCMethod2PrimaryPointLocation>
```

```
                    <alertCMethod2SecondaryPointLocation>
                        <alertCLocation>
                            <specificLocation>1244</specificLocation>
                        </alertCLocation>
                    </alertCMethod2SecondaryPointLocation>
                </alertCLinear>
            </pertinentLocation>
            <travelTimeTrendType>increasing</travelTimeTrendType>
            <travelTime>
                <duration>271</duration>
            </travelTime>
            <freeFlowTravelTime>
                <duration>250</duration>
            </freeFlowTravelTime>
            <freeFlowSpeed>
                <speed>72</speed>
            </freeFlowSpeed>
        </basicData>
    </elaboratedData>
    <elaboratedData>
        <basicData xsi:type="TravelTimeData" >
            <pertinentLocation xsi:type="LocationByReference" >
                <predefinedLocationReference targetClass="PredefinedLocation" id = "GUID1234277721992"
version = "0"/ >
            </pertinentLocation>
            <travelTimeTrendType>increasing</travelTimeTrendType>
            <travelTime>
                <duration>271</duration>
            </travelTime>
            <freeFlowTravelTime>
                <duration>250</duration>
            </freeFlowTravelTime>
            <freeFlowSpeed>
                <speed>72</speed>
            </freeFlowSpeed>
        </basicData>
    </elaboratedData>
  </payloadPublication>
</d2LogicalModel>
```

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