

# DATEX II profile for CAM Aggregation

## ECo-AT

Version 00-01-00

### A.1 Overview

This profile describes the message content for the CAM aggregation use case as described by the project ECo-AT. The profile is divided into three parts: CAM location, CAM content, and CAM single vehicle data. The CAM location part describes the location information for the general CAM aggregation scenario, whereas the CAM content part describes the content information for the general CAM aggregation scenario. The CAM single vehicle data describes the location as well as the content information for the CAM single vehicle data scenario. The profile also uses level b extensions, which are also described in this document. All the extension components are colored in yellow, and the enumeration components are colored in blue. The CAM location uses "MeasuredSiteTablePublication", the CAM content uses the "MeasuredDataPublication" and the CAM single vehicle data uses the "ElaboratedDataPublication".

### A.2 Data Dictionary for "CAM location"

#### A.2.1 "Exchange" package

##### A.2.1.1 "Exchange" package classes

Class name	Designation	Definition	Stereotype	Abstract
Exchange	Exchange	Details associated with the management of the exchange between the supplier and the client.		no
InternationalIdentifier	International identifier	An identifier/name whose range is specific to the particular country.		no

Table 1— Classes of the "Exchange" package

##### A.2.1.2 "Exchange" package association roles

Class name	Role name	Designation	Definition	Multiplicity	Target
Exchange	supplierIdentification	Supplier identification	An identifier/name whose range is specific to the particular country.	1..1	InternationalIdentifier

Table 2— Associations of the "Exchange" package

##### A.2.1.3 "Exchange" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
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Class name	Attribute name	Designation	Definition	Multiplicity	Type
Exchange	clientIdentification	Client identification	In a data exchange process, an identifier of the organisation or group of organisations which receives information from the DATEX II supplier system.	0..1	String

**Table 3— Attributes of the "Exchange" package**

## A.2.2 "D2LogicalModel" package

### A.2.2.1 "D2LogicalModel" package classes

Class name	Designation	Definition	Stereotype	Abstract
Exchange	Exchange	Details associated with the management of the exchange between the supplier and the client.		no
D2LogicalModel	D2 logical model	The DATEX II logical model comprising exchange, content payload and management sub-models.		no
PayloadPublication	Payload publication	A payload publication of traffic related information or associated management information created at a specific point in time that can be exchanged via a DATEX II interface.		yes

**Table 4— Classes of the "D2LogicalModel" package**

### A.2.2.2 " D2LogicalModel" package association roles

There are no (or not used) association roles in the "D2LogicalModel" package

### A.2.2.3 " D2LogicalModel" package attributes

There are no (or not used) package attributes in the "D2LogicalModel" package

## A.2.3 "GroupOfLocations " package

### A.2.3.1 "GroupOfLocations" package classes

Class name	Designation	Definition	Stereotype	Abstract
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Class name	Designation	Definition	Stereotype	Abstract
GroupOfLocations	Group of locations	One or more physically separate locations. Multiple locations may be related, as in an itinerary (or route), or may be unrelated. It is not for identifying the same physical location using different Location objects for different referencing systems.		yes
Location	Location	The specification of a location either on a network (as a point or a linear location) or as an area. This may be provided in one or more referencing systems.		yes
NetworkLocation	Network location	The specification of a location on a network (as a point or a linear location).		yes
Point	Point	A single geospatial point.		no
PointCoordinates	Point coordinates	A pair of coordinates defining the geodetic position of a single point using the European Terrestrial Reference System 1989 (ETRS89).		no

**Table 5— Classes of the "GroupOfLocations" package**

**A.2.3.2 "GroupOfLocations" package association roles**

Class name	Role name	Designation	Definition	Multiplicity	Target
Point	pointByCoordinates	Point by coordinates	A single point defined only by a coordinate set with an optional bearing direction.	0..1	PointByCoordinates

**Table 6— Associations of the "GroupOfLocations" package**

**A.2.3.3 "GroupOfLocations" package attributes**

Class name	Attribute name	Designation	Definition	Multiplicity	Type
PointByCoordinates	bearing	Bearing	A bearing at the point measured in degrees (0 - 359). Unless otherwise specified the reference direction corresponding to 0 degrees is North.	0..1	NonNegativeInteger
PointCoordinates	latitude	Latitude	Latitude in decimal degrees using the European Terrestrial Reference System 1989 (ETRS89).	1..1	Float
	longitude	Longitude	Longitude in decimal degrees using the European Terrestrial Reference System 1989 (ETRS89).	1..1	Float

**Table 7— Attributes of the "GroupOfLocations" package**

## A.2.4 "MeasurementSiteTablePublication" package

### A.2.4.1 "MeasurementSiteTablePublication" package classes

Class name	Designation	Definition	Stereotype	Abstract
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.		no

Table 8— Classes of the "MeasurementSiteTablePublication" package

### A.2.4.2 "MeasurementSiteTablePublication" package association roles

There are no defined association roles in the "MeasurementSiteTablePublication" package.

### A.2.4.3 "MeasurementSiteTablePublication" package attributes

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

## A.2.5 "MeasurementSiteTable" package

### A.2.5.1 "MeasurementSiteTable" package classes

Class name	Designation	Definition	Stereotype	Abstract
MeasurementSiteRecord	Measurement site record	An identifiable single measurement site entry/record in the Measurement Site table.	versionIdentifiable	no
MeasurementSiteRecordExtended	Measurement site record extended	Extension for MeasurementSiteRecord		no

Table 9— Classes of the "MeasurementSiteTable" package

### A.2.5.2 "MeasurementSiteTable" package association roles

Class name	Role name	Designation	Definition	Multiplicity	Target
MeasurementSiteRecord	measurementSiteLocation	Measurement site location	The location of a measurement site may be a point, a linear section of road 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.	1..1	GroupOfLocations

Table 10— Associations of the "MeasurementSiteTable" package

### A.2.5.3 "MeasurementSiteTable" package attributes

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
	measurementSide	Measurement side	Side of the road on which measurements are acquired, corresponding to the direction of the road.	0..1	DirectionEnum
	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
MeasurementSiteRecordExtended	selfConfigured	Self-configured	Indicates if the measurement site (detection zone in CAM) was configured by input from external component (eg. C-ITS-S) or self-configured.	0..1	Boolean

Table 11— Associations of the "MeasurementSiteTable" package

## A.2.6 "PayloadPublication" package

### A.2.6.1 "PayloadPublication" package classes

Class name	Designation	Definition	Stereotype	Abstract
PayloadPublication	Payload publication	A payload publication of traffic related information or associated management information created at a specific point in time that can be exchanged via a DATEX II interface.		yes

Table 12— Classes of the "PayloadPublication" package

### A.2.6.2 "PayloadPublication" package association roles

Class name	Role name	Designation	Definition	Multiplicity	Target
PayloadPublication	publicationCreator	Publication creator	An identifier/name whose range is specific to the particular country.	1..1	InternationalIdentifier

Table 13— Associations of the "PayloadPublication" package

### A.2.6.3 "PayloadPublication" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
PayloadPublication	publicationTime	Publication time	Date/time at which the payload publication was created.	1..1	DateTime
	lang	Language	The default language used throughout the payload publication.	1..1	Language

Table 14— Attributes of the "PayloadPublication" package

## A.3 Data Dictionary for “CAM content”

### A.3.1 "BasicData" package

#### A.3.1.1 "BasicData" package classes

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
CAMSpeedCharacteristics	CAM speed characteristics	Additional speed information such as min, max speeds provided via a processed CAM message		no
SpeedValue	Speed value	A measured or calculated value of speed.		no
TrafficConcentration	Traffic concentration	Averaged measurements or calculations of traffic concentration.		no
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
TrafficSpeed	Traffic speed	Averaged measurements or calculations of traffic speed.		no
TrafficSpeedExtended	Traffic speed extended	Extension for TrafficSpeed		no

**Table 15— Classes of the "BasicData" package**

**A.3.1.2 "BasicData" package association roles**

<b>Class name</b>	<b>Role name</b>	<b>Designation</b>	<b>Definition</b>	<b>Multiplicity</b>	<b>Target</b>
CAMSpeedCharacteristics	maxSpeed	Max speed	Max speed for the measured site (detectionZoneId and stationTypeGroupID) during the time period (or collection interval)	0..1	SpeedValue
	minSpeed	Min speed	Min speed for the measured site (detectionZoneId and stationTypeGroupID) during the time period (or collection interval)	0..1	SpeedValue
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
TrafficConcentration	concentration	Concentration	An averaged measurement or calculation of the concentration of vehicles at the specified measurement site.	0..1	ConcentrationOfVehiclesValue
TrafficSpeed	averageVehicleSpeed	Average vehicle speed	An averaged measurement or calculation of the speed of vehicles at the specified location.	0..1	SpeedValue
TrafficSpeedExtended	additionalSpeedValues	Additional speed values	Additional speed values	0..1	CAMSpeedCharacteristics

**Table 16— Associations of the "BasicData" package**



### A.3.1.3 "BasicData" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
BasicData	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-minute 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

Table 17— Attributes of the "BasicData" package

### A.3.2 "MeasuredDataPublication" package

#### A.3.2.1 "MeasuredDataPublication" package classes

Class name	Designation	Definition	Stereotype	Abstract
HeaderInformation	Header information	Management information relating to the data contained within a publication.		no
MeasuredDataPublication	Measured data publication	A publication containing one or more measurement data sets, each set being measured at a single measurement site.		no
_MeasurementSiteTableVersionedReference	Measurement site table versioned reference	A reference to a versioned Measurement Site table.		no
_MeasurementSiteRecordVersionedReference	Measurement site record versioned reference	A reference to a versioned measurement site record defined in a Measurement Site table.		no
MeasuredValue	Measured value	Composition to the indexed measured value associated with the measurement site. The index uniquely associates the measurement value with the corresponding indexed measurement characteristics defined for the measurement site.		no
SiteMeasurements	Site measurements	Additional speed information such as min, max speeds provided via a processed CAM message		no

Table 18— Classes of the "MeasuredDataPublication" package

### A.3.2.2 "MeasuredDataPublication" package association roles

There are no defined association roles in the "MeasuredDataPublication" package.

### A.3.2.3 "MeasuredDataPublication" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
HeaderInformation	confidentiality	Confidentiality	The extent to which the related information may be circulated, according to the recipient type. Recipients must comply with this confidentiality statement.	1..1	ConfidentialityValueEnum
	informationStatus	Information status	The status of the related information (real, test, exercise ...).	1..1	InformationStatusEnum
MeasuredDataPublication	headerInformation	Header information	Management information relating to the data contained within a publication.	0..1	HeaderInformation
	siteMeasurements	Site measurements	A measurement data set derived from a specific measurement site.	1..*	SiteMeasurements
MeasuredValue	basicData	Basic data	Data that is either measured or calculated (elaborated) at the same time or over the same time period.	0..1	BasicData
SiteMeasurements	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
	measuredValue	Measured value	Composition to the indexed measured value associated with the measurement site. The index uniquely associates the measurement value with the corresponding indexed measurement characteristics defined for the measurement site.	0..*	_SiteMeasurementsIndexedMeasuredValue

**Table 19— Attributes of the "MeasuredDataPublication" package**

### A.3.3 "VehicleCharacteristics" package

#### A.3.3.1 "VehicleCharacteristics" package classes

Class name	Designation	Definition	Stereotype	Abstract
VehicleCharacteristics	Vehicle characteristics	The characteristics of a vehicle, e.g. lorry of gross weight greater than 30 tonnes.		no
VehicleCharacteristicExtended4CAM	Vehicle characteristic extended for CAM	Extension for Vehicle Characteristic specific to a processed CAM message		no

Table 20— Classes of the "VehicleCharacteristics" package

#### A.3.3.2 "VehicleCharacteristics" package association roles

There are no defined association roles in the "VehicleCharacteristics" package.

#### A.3.3.3 "VehicleCharacteristics" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
VehicleCharacteristics	vehicleType	Vehicle type	Vehicle type.	0..*	VehicleTypeEnum
VehicleCharacteristicExtended4CAM	vehicleTypeCAM	Vehicle type CAM	Vehicle types (or station types)	1..*	VehicleTypeCAMEnum

Table 21— Attributes of the "VehicleCharacteristics" package

## A.4 Data Dictionary for “CAM single vehicle data”

### A.4.1 "BasicData" package

#### A.4.1.1 "BasicData" package classes

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
IndividualVehicleData Values	Individual vehicle data values	Measured or calculated data values relating to individual vehicles derived from detectors at the specified measurement site.		no
SpeedValue	Speed value	A measured or calculated value of speed.		no
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

**Table 22— Classes of the "BasicData" package**

#### A.4.1.2 "BasicData" package association roles

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
IndividualVehicleData Values	individualVehicleSpeed	Individual vehicle speed	The measured speed of the individual vehicle at the specified measurement site.	0..1	SpeedValue
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

**Table 23— Associations of the "BasicData" package**

### A.4.1.3 "BasicData" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
BasicData	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-minute 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

Table 24— Attributes of the "BasicData" package

### A.4.2 "ElaboratedDataPublication" package

#### A.4.2.1 "ElaboratedDataPublication" package classes

Class name	Designation	Definition	Stereotype	Abstract
HeaderInformation	Header information	Management information relating to the data contained within a publication.		no
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
ElaboratedDataPublication	Elaborated data publication	A publication containing one or more elaborated data sets.		no

Table 25— Classes of the "ElaboratedDataPublication" package

#### A.4.2.2 "ElaboratedDataPublication" package association roles

There are no defined association roles in the "ElaboratedDataPublication" package.

### A.4.2.3 "ElaboratedDataPublication" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
HeaderInformation	confidentiality	Confidentiality	The extent to which the related information may be circulated, according to the recipient type. Recipients must comply with this confidentiality statement.	1..1	ConfidentialityValueEnum
	informationStatus	Information status	The status of the related information (real, test, exercise ...).	1..1	InformationStatusEnum
ElaboratedDataPublication	headerInformation	Header information	Management information relating to the data contained within a publication.	0..1	HeaderInformation
	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.	0..*	ElaboratedData
ElaboratedData	basicData	Basic data	Data that is either measured or calculated (elaborated) at the same time or over the same time period.	0..1	BasicData

Table 26— Attributes of the "ElaboratedDataPublication" package

### A.4.3 "GroupOfLocations" package

#### A.4.3.1 "GroupOfLocations" package classes

Class name	Designation	Definition	Stereotype	Abstract
GroupOfLocations	Group of locations	One or more physically separate locations. Multiple locations may be related, as in an itinerary (or route), or may be unrelated. It is not for identifying the same physical location using different Location objects for different referencing systems.		yes
Location	Location	The specification of a location either on a network (as a point or a linear location) or as an area. This may be provided in one or more referencing systems.		yes
NetworkLocation	Network location	The specification of a location on a network (as a point or a linear location).		yes
Point	Point	A single geospatial point.		no

Class name	Designation	Definition	Stereotype	Abstract
PointCoordinates	Point coordinates	A pair of coordinates defining the geodetic position of a single point using the European Terrestrial Reference System 1989 (ETRS89).		no
PointCoordinatesExtended	Point coordinates extended	Extension for point coordinates.		no

**Table 27— Classes of the "GroupOfLocations" package**

**A.4.3.2 "GroupOfLocations" package association roles**

Class name	Role name	Designation	Definition	Multiplicity	Target
Point	pointByCoordinates	Point by coordinates	A single point defined only by a coordinate set with an optional bearing direction.	0..1	PointByCoordinates
PointByCoordinates	pointCoordinates	Point coordinates	A pair of coordinates defining the geodetic position of a single point using the European Terrestrial Reference System 1989 (ETRS89).	1..1	PointCoordinates

**Table 28— Associations of the "GroupOfLocations" package**

**A.4.3.3 "GroupOfLocations" package attributes**

Class name	Attribute name	Designation	Definition	Multiplicity	Type
PointByCoordinates	bearing	Bearing	A bearing at the point measured in degrees (0 - 359). Unless otherwise specified the reference direction corresponding to 0 degrees is North.	0..1	NonNegativeInteger
PointCoordinates	latitude	Latitude	Latitude in decimal degrees using the European Terrestrial Reference System 1989 (ETRS89).	1..1	Float
	longitude	Longitude	Longitude in decimal degrees using the European Terrestrial Reference System 1989 (ETRS89).	1..1	Float
PointCoordinatesExtended	altitude	Altitude	A measure of altitude in metres	0..1	MetresAsFloat

**Table 29— Attributes of the "GroupOfLocations" package**

#### A.4.4 "VehicleCharacteristics" package

##### A.4.4.1 "VehicleCharacteristics" package classes

Class name	Designation	Definition	Stereotype	Abstract
VehicleCharacteristics	Vehicle characteristics	The characteristics of a vehicle, e.g. lorry of gross weight greater than 30 tonnes.		no

Table 30— Classes of the "VehicleCharacteristics" package

##### A.4.4.2 "VehicleCharacteristics" package association roles

There are no defined association roles in the "VehicleCharacteristics" package.

##### A.4.4.3 "VehicleCharacteristics" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
VehicleCharacteristics	vehicleType	Vehicle type	Vehicle type.	0..*	VehicleTypeEnum

Table 31— Attributes of the "VehicleCharacteristics" package

#### A.5 Data Dictionary of <<enumerations>> for "CAM Aggregation Profile"

This clause contains the definitions of all enumerations which are used in the "CAM Aggregation Profile (all parts)".



### A.5.1 The <<enumeration>> "ConfidentialityValueEnum"

Values of confidentiality.

Enumerated value name	Designation	Definition
internalUse	Internal use	For internal use only of the recipient organisation.
noRestriction	No restriction	No restriction on usage.
restrictedToAuthorities	Restricted to authorities	Restricted for use only by authorities.
restrictedToAuthoritiesAndTrafficOperators	Restricted to authorities	Restricted for use only by authorities and traffic operators.
restrictedToAuthoritiesTrafficOperatorsAndPublishers	Restricted to authorities traffic operators and publishers	Restricted for use only by authorities, traffic operators and publishers (service providers).
restrictedToAuthoritiesTrafficOperatorsAndVms	Restricted to authorities traffic operators and Vms	Restricted for use only by authorities, traffic operators, publishers (service providers) and variable message signs.

Table 32— Values contained in the enumeration "ConfidentialityValueEnum"

### A.5.2 The <<enumeration>> "CountryEnum"

List of countries.

Enumerated value name	Designation	Definition
at	at	Austria
de	de	Germany

Table 33— Values contained in the enumeration "CountryEnum"

### A.5.3 The <<enumeration>> "DirectionEnum"

Types of the perceived driving conditions.

Enumerated value name	Designation	Definition
allDirections	All directions	All directions (where more than two are applicable) at this point on the road network.
bothWays	Both ways	Both directions that are applicable at this point on the road network.
clockwise	Clock wise	Clockwise.
anticlockwise	Anti-clockwise	Anti-clockwise.
innerRing	Inner ring	Inner ring direction.
outerRing	Outer ring	Outer ring direction.
northBound	North bound	North bound general direction.
northEastBound	North east bound	North east bound general direction.
eastBound	East bound	East bound general direction.
southEastBound	South east bound	South east bound general direction.
southBound	South bound	South bound general direction.
southWestBound	South west bound	South west bound general direction.
westBound	West bound	West bound general direction.
northWestBound	North west bound	North west bound general direction.
inboundTowardsTown	Inbound towards town	Heading towards town centre direction of travel.
outboundFromTown	Out bound from town	Heading out of or away from the town centre direction of travel.
unknown	Unknown	Direction is unknown.
opposite	Opposite	Opposite direction to the normal direction of flow at this point on the road network.
other	Other	Other than as defined in this enumeration.

Table 34— Values contained in the enumeration "DirectionEnum"

#### A.5.4 The <<enumeration>> "InformationStatusEnum"

Status of the related information (i.e. real, test or exercise).

Enumerated value name	Designation	Definition
real	Real	The information is real. It is not a test or exercise.
securityExercise	Security exercise	The information is part of an exercise which is for testing security.
technicalExercise	Technical exercise	The information is part of an exercise which includes tests of associated technical subsystems.
test	Test	The information is part of a test for checking the exchange of this type of information.

Table 35— Values contained in the enumeration "InformationStatusEnum"

#### A.5.5 The <<enumeration>> "ValidityStatusEnum"

Values of validity status that can be assigned to a described event, action or item.

Enumerated value name	Designation	Definition
active	Active	The described event, action or item is currently active regardless of the definition of the validity time specification.
definedByValidityTimeSpec	Defined by validity time spec	The validity status of the described event, action or item is in accordance with the definition of the validity time specification.
suspended	Suspended	The described event, action or item is currently suspended, that is inactive, regardless of the definition of the validity time specification.

Table 36— Values contained in the enumeration "ValidityStatusEnum"

### A.5.6 The <<enumeration>> "VehicleTypeCAMEnum"

Types of vehicle.

Enumerated value name	Designation	Definition
bus	Bus	Bus.
heavyTruck	Heavy truck	Heavy truck.
lightTruck	Light truck	Light truck.
motorcycle	Motorcycle	Motorcycle.
passengerCar	Passenger car	Passenger car.
specialVehicles	Special vehicles	Special vehicles.
unknown	Unknown	Vehicle of unknown type.
vehicleWithBeamHeadlightsOn	Vehicle with beam headlights on	Vehicle with headlights on.
vehicleWithDaytimeRunningLightsOn	Vehicle with daytime running lights on	Vehicle with daytime running lights on.
vehicleWithFogLightOn	Vehicle with fog light on	Vehicle with fog lights on.

Table 37— Values contained in the enumeration "VehicleTypeCAMEnum"

### A.5.7 The <<enumeration>> "VehicleTypeEnum"

Types of vehicle.

Enumerated value name	Designation	Definition
anyVehicle	Any vehicle	Vehicle of any type.
bus	Bus	Bus.
car	Car	Car.
lorry	Lorry	Lorry of any type.

Table 38— Values contained in the enumeration "VehicleTypeEnum"

## A.6 Alphabetical list of attributes

Attribute name	Class name	Designation	Definition	Multiplicity	Type
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altitude	PointCoordinatesExtended	Altitude	A measure of altitude in metres	0..1	MetresAsFloat
bearing	PointByCoordinates	Bearing	A bearing at the point measured in degrees (0 - 359). Unless otherwise specified the reference direction corresponding to 0 degrees is North.	0..1	NonNegativeInteger
clientIdentification	Exchange	Client identification	In a data exchange process, an identifier of the organisation or group of organisations which receives information from the DATEX II supplier system.	0..1	String
computationMethod	MeasurementSiteRecord	Computation method	Method of computation which is used to compute the measured value(s) at the measurement site.	0..1	ComputationMethodEnum
country	InternationalIdentifier	Country	ISO 3166-1 two character country code.	1..1	CountryEnum
confidentiality	HeaderInformation	Confidentiality	The extent to which the related information may be circulated, according to the recipient type. Recipients must comply with this confidentiality statement.	1..1	ConfidentialityValueEnum
informationStatus	HeaderInformation	Information status	The status of the related information (real, test, exercise ....).	1..1	InformationStatusEnum
lang	PayloadPublication	Language	The default language used throughout the payload publication.	1..1	Language
latitude	PointCoordinates	Latitude	Latitude in decimal degrees using the European Terrestrial Reference System 1989 (ETRS89).	1..1	Float
longitude	PointCoordinates	Longitude	Longitude in decimal degrees using the European Terrestrial Reference System 1989 (ETRS89).	1..1	Float

measurementOrCalculationPeriod	BasicData	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-minute measurement period.	0..1	Seconds
measurementOrCalculationTime	BasicData	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
measurementSide	MeasurementSiteRecord	Measurement side	Side of the road on which measurements are acquired, corresponding to the direction of the road.	0..1	DirectionEnum
measurementSiteNumberOfLanes	MeasurementSiteRecord	Measurement site number of lanes	The number of lanes over which the measured value is determined.	0..1	NonNegativeInteger
measurementSiteRecordVersionTime	MeasurementSiteRecord	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
measurementTimeDefault	SiteMeasurements	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
nationalIdentifier	InternationalIdentifier	National identifier	Identifier or name unique within the specified country.	1..1	String
overallEndTime	OverallPeriod	Overall end time	End of bounding period of validity defined by date and time.	0..1	DateTime
overallStartTime	OverallPeriod	Overall start time	Start of bounding period of validity defined by date and time.	1..1	DateTime
publicationTime	PayloadPublication	Publication time	Date/time at which the payload publication was created.	1..1	DateTime
reliable	Source	Reliable	An indication as to whether the source deems the associated information to be reliable/correct. "True" indicates it is deemed reliable.	0..1	Boolean

selfConfigured	MeasurementSiteRecordExtended	Self-configured	Indicates if the measurement site (detection zone in CAM) was configured by input from external component (eg. C-ITS-S) or self-configured.	0..1	Boolean
sourceCountry	Source	Source country	ISO 3166-1 two character country code of the source of the information.	0..1	CountryEnum
sourceIdentification	Source	Source identification	Identifier of the organisation or the traffic equipment which has produced the information relating to this version of the information.	0..1	String
sourceName	Source	Source name	The name of the organisation which has produced the information relating to this version of the information.	0..1	MultilingualString
sourceType	Source	Source type	Information about the technology used for measuring the data or the method used for obtaining qualitative descriptions relating to this version of the information.	0..1	SourceTypeEnum
validityStatus	Validity	Validity status	Specification of validity, either explicitly overriding the validity time specification or confirming it.	1..1	ValidityStatusEnum
vehicleType	VehicleCharacteristics	Vehicle type	Vehicle type.	0..*	VehicleTypeEnum
vehicleTypeCAM	VehicleCharacteristicExtended4CAM	Vehicle type CAM	Vehicle types (or station types)	1..*	VehicleTypeCAMEnum

**Table 39- Alphabetical list of attributes**

## A.7 Alphabetical list of roles

Role name	Class name	Designation	Definition	Multiplicity	Target
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averageVehicleSpeed	TrafficSpeed	Average vehicle speed	An averaged measurement or calculation of the speed of vehicles at the specified location.	0..1	SpeedValue
additionalSpeedValues	TrafficSpeedExtended	Additional speed values	Additional speed values	0..1	CAMSpeedCharacteristics
concentration	TrafficConcentration	Concentration	An averaged measurement or calculation of the concentration of vehicles at the specified measurement site.	0..1	ConcentrationOfVehiclesValue
individualVehicleSpeed	IndividualVehicleDataValues	Individual vehicle speed	The measured speed of the individual vehicle at the specified measurement site.	0..1	SpeedValue
forVehiclesWithCharacteristicsOf	TrafficData	For vehicles with characteristics of	The characteristics of those vehicles for which the network management is applicable.	0..*	VehicleCharacteristics



maxSpeed	CAMSpeedCharacteristics	Max speed	Max speed for the measured site (detectionZoneId and stationTypeGroupID) during the time period (or collection interval)	0..1	SpeedValue
measurementSiteLocation	MeasurementSiteRecord	Measurement site location	The location of a measurement site may be a point, a linear section of road 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.	1..1	GroupOfLocations
minSpeed	CAMSpeedCharacteristics	Min speed	Min speed for the measured site (detectionZoneId and stationTypeGroupID) during the time period (or collection interval)	0..1	SpeedValue
pertinentLocation	BasicData	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
publicationCreator	PayloadPublication	Publication creator	An identifier/name whose range is specific to the particular country.	1..1	InternationalIdentifier
pointByCoordinates	Point	Point by coordinates	A single point defined only by a coordinate set with an optional bearing direction.	0..1	PointByCoordinates
supplierIdentification	Exchange	Supplier identification	An identifier/name whose range is specific to the particular country.	1..1	InternationalIdentifier
validityTimeSpecification	Validity	Validity time specification	A specification of periods of validity defined by overall bounding start and end times and the possible intersection of valid periods with exception periods (exception periods overriding valid periods).	1..1	OverallPeriod

**Table 40- Alphabetical list of roles**

## A.8 Figures

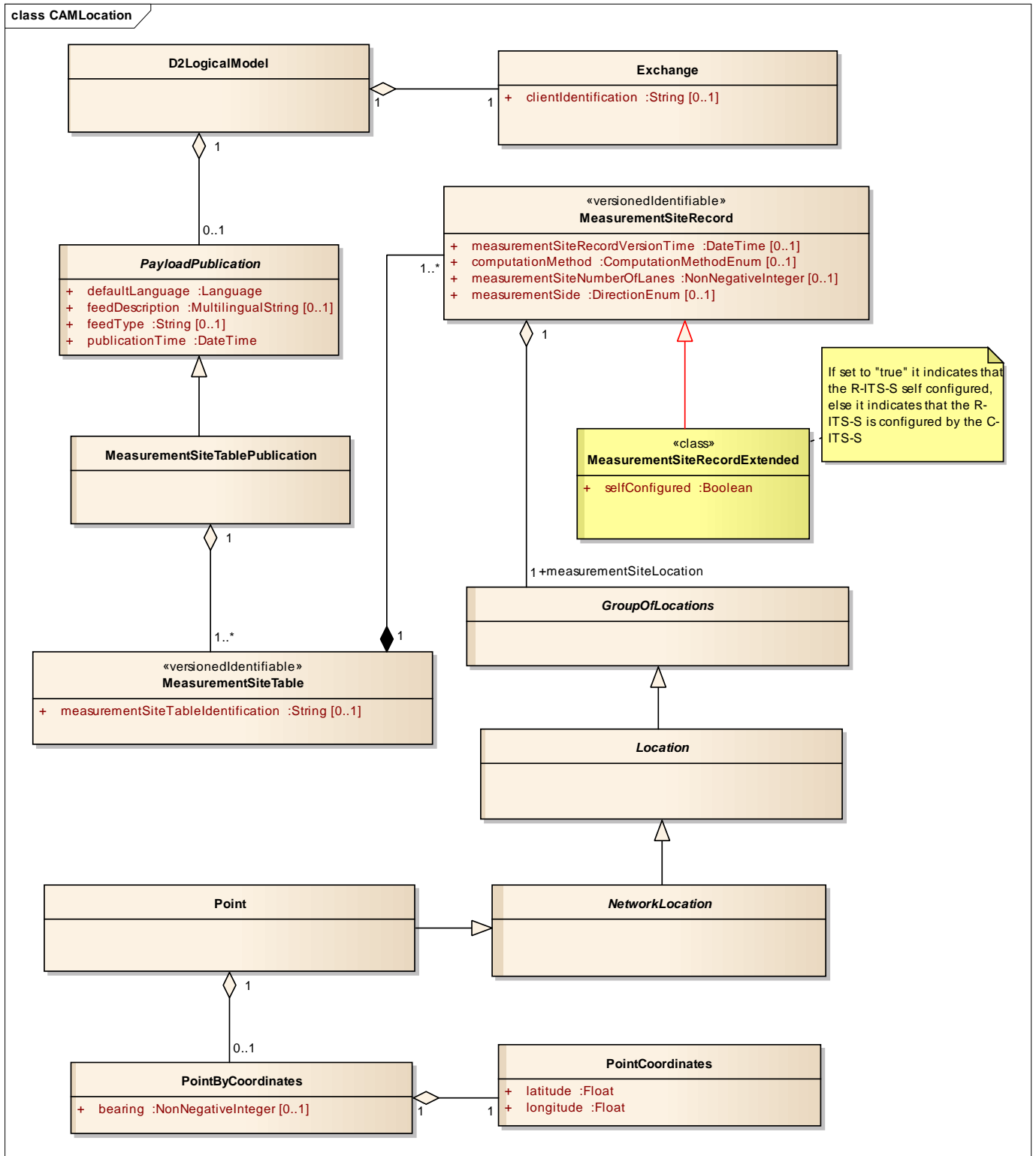


Figure 1: CAM Aggregation Location Model (MeasuredSiteTablePublication)

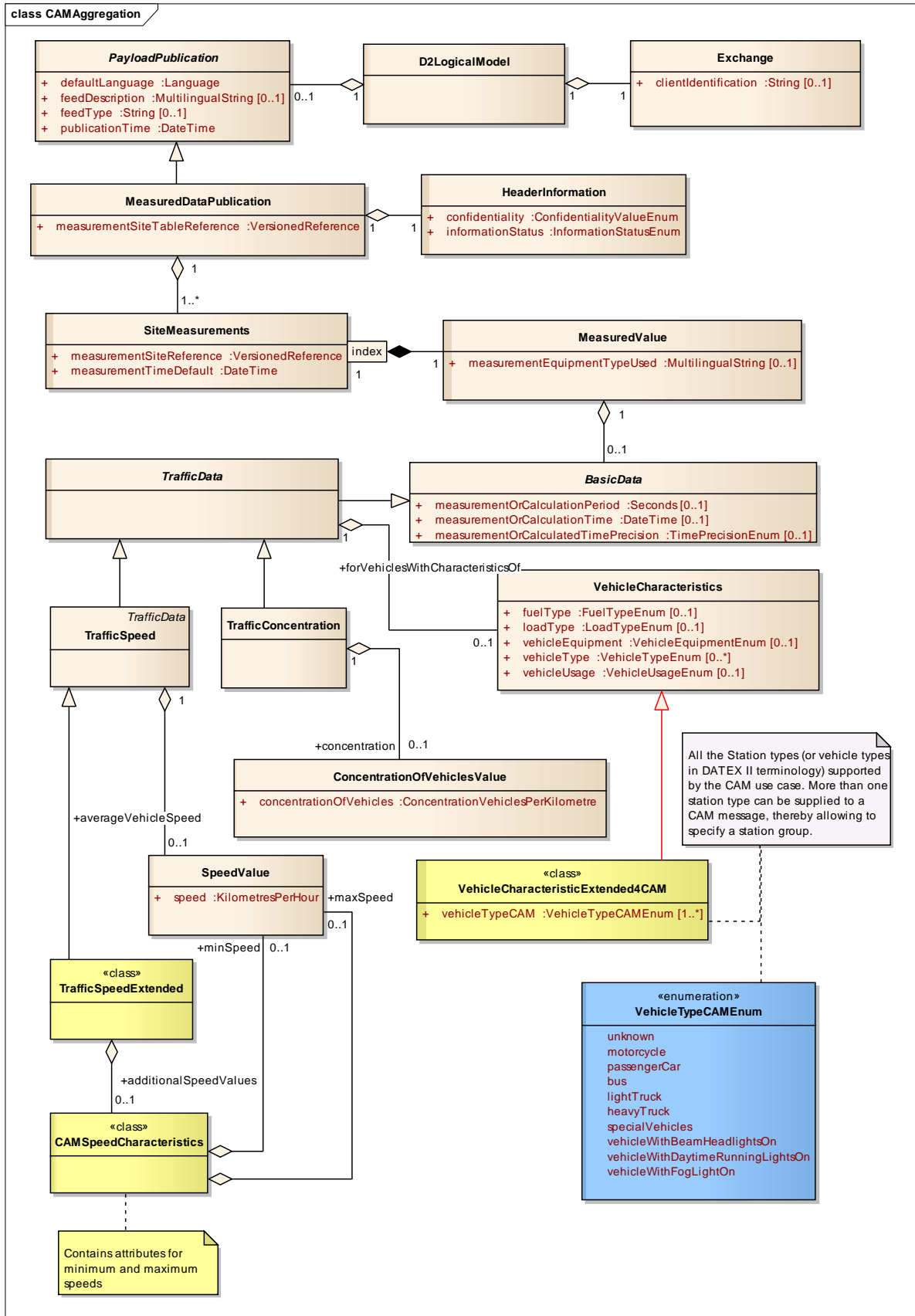


Figure 2: CAM Aggregation Content Model (MeasuredDataPublication)

