

DATEX II profile for IVI Location

ECo-AT

Version 00-01-00

A.1 Overview

This profile describes the location content for the IVI use case as described in the project ECo-AT using the VMS table publication. There is a second document describing the IVI content information.

Location referencing is done by ALERT-C as well as with a level B extension which is also described in this document. The extension is named as "IviLocation".

A.2 Data Dictionary for "IVI Location Profile"

A.2.1 "AlertCMethod4Linear" package

A.2.1.1 "AlertCMethod4Linear" package classes

Class name	Designation	Definition	Stereotype	Abstract
AlertCMethod4Linear	ALERT-C method4 linear	A linear section along a road between two points, Primary and Secondary, which are pre-defined ALERT-C locations plus offset distance. Direction is FROM the Secondary point TO the Primary point, i.e. the Primary point is downstream of the Secondary point.		no

Table 1— Classes of the "AlertCMethod4Linear" package

A.2.1.2 "AlertCMethod4Linear" package association roles

There are no defined association roles in the "AlertCMethod4Linear" package.

A.2.1.3 "AlertCMethod4Linear" package attributes

There are no defined attributes in the "AlertCMethod4Linear" package.

A.2.2 "AlertCMethod4Point" package

A.2.2.1 "AlertCMethod4Point" package classes

Class name	Designation	Definition	Stereotype	Abstract
AlertCMethod4Point	ALERT-C method4 point	A single point on the road network defined by reference to a point in a pre-defined ALERT-C location table plus an offset distance and which has an associated direction of traffic flow.		no

Table 2— Classes of the "AlertCMethod4Point" package

A.2.2.2 "AlertCMethod4Point" package association roles

There are no defined association roles in the "AlertCMethod4Point" package.

A.2.2.3 "AlertCMethod4Point" package attributes

There are no defined attributes in the "AlertCMethod4Point" package.

A.2.3 "Exchange " package

A.2.3.1 "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 3— Classes of the "Exchange" package

A.2.3.2 "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 4— Associations of the "Exchange" package

A.2.3.3 "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 5— Attributes of the "Exchange" package

A.2.4 "D2LogicalModel" package

A.2.4.1 "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 6— Classes of the "D2LogicalModel" package

A.2.4.2 "D2LogicalModel" package association roles

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

A.2.4.3 "D2LogicalModel" package attributes

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

A.2.5 "PayloadPublication" package

A.2.5.1 "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.		no

Table 7— Classes of the "PayloadPublication" package

A.2.5.2 "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 8— Associations of the "PayloadPublication" package

A.2.5.3 "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
PayloadPublication	lang	Language	The default language used throughout the payload publication.	1..1	Language

Table 9— Attributes of the "PayloadPublication" package

A.2.6 "VmsTablePublication" package

A.2.6.1 "VmsTablePublication" package classes

Class name	Designation	Definition	Stereotype	Abstract
VmsRecord	VMS record	A sub-record in the VMS Unit table defining the characteristics of a single variable message sign that is controlled by a specific VMS unit. Locations are on or adjacent to the road network but may be updated over time if relating to a mobile VMS unit.		no
VmsTablePublication	VMS table publication	A publication containing one or more VMS Unit Tables each comprising a set of records which hold details of VMS units.		no
VmsUnitRecord	VMS unit record	A versioned single VMS unit entry/record in the VMS Unit table that defines the characteristics of the VMS unit.	versionedIdentifiable	no
VmsUnitTable	VMS unit table	A versioned VMS Unit Table comprising a number of data records, each record defining the characteristics of a specific deployed variable message sign unit.	versionedIdentifiable	no

Table 10— Classes of the "VmsTablePublication" package

A.2.6.2 "VmsTablePublication" package association roles

Class name	Role name	Designation	Definition	Multiplicity	Target
VmsRecord	vmsLocation	VMS location	The location of the variable message sign. For mobile VMS which are regularly moved this need not be provided. Instead the VMS location should be provided in the VmsPublication along with current settings.	0..1	Location

Table 11— Associations of the "VmsTablePublication" package

A.2.6.3 "VmsTablePublication" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
VmsRecord	vmsPhysicalMounting	VMS physical mounting	Description of how the VMS is physically mounted or deployed on the road.	0..1	PhysicalMountingEnum
VmsUnitRecord	numberOfVms	Number of VMS	Number of variable message signs controlled by the unit.	0..1	NonNegativeInteger
VmsUnitTable	vmsUnitTableIdentification	VMS unit table identification	An alphanumeric identification for the VMS Unit table, possibly human readable.	0..1	String

Table 12— Attributes of the "VmsTablePublication" package

A.3 Data Dictionary for "IVI Location – Location Referencing"

A.3.1 "Location" package

Class name	Designation	Definition	Stereotype	Abstract
AffectedCarriagewayAndLanes	Affected carriageway and lanes	Supplementary positional information which details carriageway and lane locations. Several instances may exist where the element being described extends over more than one carriageway.		no
AlertCDirection	ALERT-C direction	The direction of traffic flow along the road to which the information relates.		no
AlertCLocation	ALERT-C location	Identification of a specific point, linear or area location in an ALERT-C location table.		no
AlertCMethod4PrimaryPointLocation	ALERT-C method4 primary point location	The point (called Primary point) which is either a single point or at the downstream end of a linear road section. The point is specified by a reference to a point in a pre-defined ALERT-C location table plus a non-negative offset distance.		no
AlertCMethod4SecondaryPointLocation	ALERT-C method4 secondary point location	The point (called Secondary point) which is at the upstream end of a linear road section. The point is specified by a reference to a point in a pre-defined Alert-C location table plus a non-negative offset distance.		no
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

Table 13— Classes of the "Location" package

A.3.1.1 "Location" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
AffectedCarriagewayAndLanes	carriageway	Carriageway	Indicates the section of carriageway to which the location relates.	1..1	CarriagewayEnum
	lane	Lane	Indicates the specific lane to which the location relates.	0..*	LaneEnum
	specificLocation	Specific location	Unique code within the ALERT-C location table which identifies the specific point, linear or area location.	1..1	AlertCLocationCode

Class name	Attribute name	Designation	Definition	Multiplicity	Type
AlertCDirection	alertCDirectionCoded	ALERT-C direction coded	The direction of traffic flow to which the situation, traffic data or information is related. Positive is in the direction of coding of the road.	1..1	AlertCDirectionEnum
	alertCDirectionNamed	ALERT-C direction named	ALERT-C name of a direction e.g. Brussels -> Lille.	0..1	MultilingualString
	alertCDirectionSense	ALERT-C direction sense	Indicates for circular routes (i.e. valid only for ring roads) the sense in which navigation should be made from the primary location to the secondary location, to avoid ambiguity. TRUE indicates positive RDS direction, i.e. direction of coding of road.	0..1	Boolean
AlertCLocation	alertCLocationName	ALERT-C location name	Name of ALERT-C location.	0..1	MultilingualString
	specificLocation	Specific location	Unique code within the ALERT-C location table which identifies the specific point, linear or area location.	1..1	AlertCLocationCode
OffsetDistance	offsetDistance	Offset distance	The non negative offset distance from the ALERT-C referenced point to the actual point. The ALERT-C locations in the Primary and Secondary locations must always encompass the linear section being specified, thus Offset Distance is towards the other point.	1..1	MetresAsNonNegativeInteger

Table 14— Attributes of the "Location" package

A.3.2 "Linear" package

Class name	Designation	Definition	Stereotype	Abstract
AlertCLinear	ALERT-C linear	A linear section along a road defined between two points on the road by reference to a pre-defined ALERT-C location table.		yes
Linear	Linear	A linear section along a single road with optional directionality defined between two points on the same road.		no

Table 15— Classes of the "Linear" package

A.3.2.1 "Linear" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
AlertCLinear	alertCLocationCountry Code	ALERT-C location country code	EBU country code.	1..1	String
	alertCLocationTableNumber	ALERT-C location table number	Number allocated to an ALERT-C table in a country. Ref. EN ISO 14819-3 for the allocation of a location table number.	1..1	String
	alertCLocationTableVersion	ALERT-C location table version	Version number associated with an ALERT-C table reference.	1..1	String

Table 16— Attributes of the "Linear" package

A.3.3 "IviLocation" package

A.3.3.1 "IviLocation" package classes

Class name	Designation	Definition	Stereotype	Abstract
ExtendedLocation	Extended location	Extension for Location.		no
IviLocation	Ivi location	Contains the location of an ivi as specified in the project ECo-AT		yes

Table 17— Classes of the "IviLocation" package

A.3.3.2 "IviLocation" package association roles

Class name	Role name	Designation	Definition	Multiplicity	Target
IviLocation	relevanceZone	Relevance zone	Contains relevance zone trace points.	1..1	LinearByCoordinates
	detectionZone	Detection zone	Contains detection zone trace points	1..1	LinearByCoordinates

Table 18— Associations of the "IviLocation" package

A.3.4 "LinearByCoordinates" package

A.3.4.1 "LinearByCoordinates" package classes

Class name	Designation	Definition	Stereotype	Abstract
ExtendedLinear	Extended linear	Extension point for linear Locations.		no
LinearByCoordinates	Linear by coordinates	A linear location defined by coordinates.		no

Table 19— Classes of the "LinearByCoordinates" package

A.3.4.2 "LinearByCoordinates" package association roles

Class name	Role name	Designation	Definition	Multiplicity	Target
LinearByCoordinates	end	End	End point of a LinearByCoordinates	1..1	PointCoordinates
	intermediate	Intermediate	Points of a LinearByCoordinates object that are neither start or end point.	0..*	PointCoordinates
	start	Start	Start point of a LinearByCoordinates	1..1	PointCoordinates

Table 20— Associations of the "LinearByCoordinates" package

A.3.4.3 "LinearByCoordinates" package attributes

Class name	Attribute name	Designation	Definition	Multiplicity	Type
LinearByCoordinates	directed	Directed	Whether this linear is directed or not. Default is directed=true	0..1	Boolean
	roadName	Road name	Name of the road of which the linear element forms a part.	0..1	MultilingualString
	roadNumber	Road number	Identifier/number of the road of which the linear element forms a part.	0..1	String

Table 21— Attributes of the "LinearByCoordinates" package

A.4 Data Dictionary of <<enumerations>> for "IVI location"

This clause contains the definitions of all enumerations which are used in the "IVI location".

A.4.1 The <<enumeration>> "AlertCDirectionEnum"

The direction of traffic flow concerned by a situation or traffic data. In ALERT-C the positive (resp. negative) direction corresponds to the positive offset direction within the RDS location table.

Enumerated value name	Designation	Definition
both	Both	Indicates that both directions of traffic flow are affected by the situation or relate to the traffic data.
negative	Negative	The direction of traffic flow concerned by a situation or traffic data. In ALERT-C the negative direction corresponds to the negative offset direction within the RDS location table.
positive	Positive	The direction of traffic flow concerned by a situation or traffic data. In ALERT-C the positive direction corresponds to the positive offset direction within the RDS location table.
unknown	Unknown	Unknown direction.

Table 22— Values contained in the enumeration "AlertCDirectionEnum"

A.4.2 The <<enumeration>> "PhysicalMountingEnum"

The ways in which equipments such as VMS are mounted or deployed on the road.

Enumerated value name	Designation	Definition
centralReservationMounted	Central reservation mounted	Equipment mounted in the central reservation.
gantryMounted	Gantry mounted	Equipment mounted on an overhead gantry across the roadway.
overheadBridgeMounted	Overhead bridge mounted	Equipment mounted overhead on a bridge structure.
roadsideCantileverMounted	Roadside cantilever mounted	Equipment mounted on a cantilever from the roadside.
roadsideMounted	Roadside mounted	Equipment mounted at the roadside.
trailerMounted	Trailer mounted	Equipment mounted on a movable trailer.
tunnelEntranceMounted	Tunnel entrance mounted	Equipment mounted on the entrance to a tunnel.
vehicleMounted	Vehicle mounted	Equipment mounted on a vehicle.

Table 23— Values contained in the enumeration "PhysicalMountingEnum"

A.5 Alphabetical list of attributes

Attribute name	Class name	Designation	Definition	Multiplicity	Type
alertCDirectionCoded	AlertCDirection	ALERT-C direction coded	The direction of traffic flow to which the situation, traffic data or information is related. Positive is in the direction of coding of the road.	1..1	AlertCDirectionEnum
alertCDirectionNamed	AlertCDirection	ALERT-C direction named	ALERT-C name of a direction e.g. Brussels -> Lille.	0..1	MultilingualString
alertCDirectionSense	AlertCDirection	ALERT-C direction sense	Indicates for circular routes (i.e. valid only for ring roads) the sense in which navigation should be made from the primary location to the secondary location, to avoid ambiguity. TRUE indicates positive RDS direction, i.e. direction of coding of road.	0..1	Boolean
alertCLocationCountryCode	AlertCLinear	ALERT-C location country code	EBU country code.	1..1	String
alertCLocationName	AlertCLocation	ALERT-C location name	Name of ALERT-C location.	0..1	MultilingualString
alertCLocationTableNumber	AlertCLinear	ALERT-C location table number	Number allocated to an ALERT-C table in a country. Ref. EN ISO 14819-3 for the allocation of a location table number.	1..1	String
alertCLocationTableVersion	AlertCLinear	ALERT-C location table version	Version number associated with an ALERT-C table reference.	1..1	String
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
directed	LinearByCoordinates	Directed	Whether this linear is directed or not. Default is directed=true	0..1	Boolean
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
numberOfVms	VmsUnitRecord	Number of VMS	Number of variable message signs controlled by the unit.	0..1	NonNegativeInteger

publicationTime	PayloadPublication	Publication time	Date/time at which the payload publication was created.	1..1	DateTime
roadName	LinearByCoordinates	Road name	Name of the road of which the linear element forms a part.	0..1	MultilingualString
roadNumber	LinearByCoordinates	Road number	Identifier/number of the road of which the linear element forms a part.	0..1	String
vmsPhysicalMounting	VmsRecord	VMS physical mounting	Description of how the VMS is physically mounted or deployed on the road.	0..1	PhysicalMountingEnum
vmsUnitTableIdentification	VmsUnitTable	VMS unit table identification	An alphanumeric identification for the VMS Unit table, possibly human readable.	0..1	String

Table 24- Alphabetical list of attributes

A.6 Alphabetical list of roles

Role name	Class name	Designation	Definition	Multiplicity	Target
detectionZone	IviLocation	Detection zone	Contains detection zone trace points.	1..1	LinearByCoordinates
end	LinearByCoordinates	End	End point of a LinearByCoordinates	1..1	PointCoordinates
intermediate	LinearByCoordinates	Intermediate	Points of a LinearByCoordinates object that are neither start or end point.	0..*	PointCoordinates
relevanceZone	IviLocation	Relevance zone	Contains relevance zone trace points.	1..1	LinearByCoordinates
start	LinearByCoordinates	Start	Start point of a LinearByCoordinates	1..1	PointCoordinates
vmsLocation	VmsRecord	VMS location	The point location of the variable message sign. For mobile VMS which are regularly moved this need not be provided. Instead the VMS location should be provided in the VmsPublication along with current settings.	0..1	Location

Table 25- Alphabetical list of roles

A.7 Figure

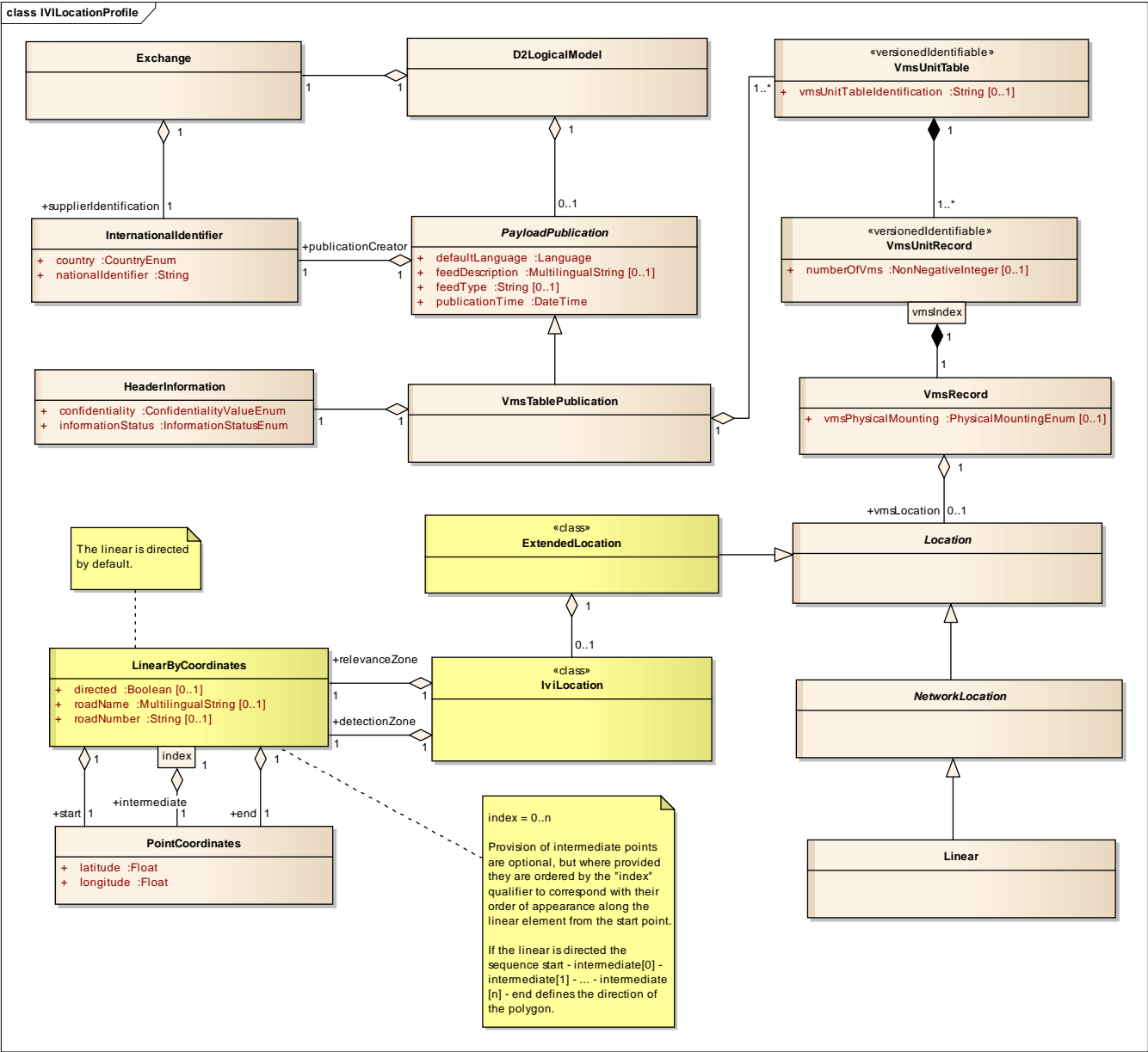


Figure 1: IVI Content