DATEX II profile for DSRC Protected zones  
ECo-AT

Version 00-01-00

* 1. Overview

This profile describes the message content for the DSRC Protected zones (protected zones) use case as described by the project ECo-AT. The profile uses “PredefinedLocationsPublications”, and 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. Location referencing is done using “TpegGeometricArea”.

* 1. Data Dictionary for “Protected zones”
     1. "Exchange" package
        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**

* + - 1. "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**

* + - 1. "Exchange" package attributes

| **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**

* + 1. "D2LogicalModel" package
       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**

* + - 1. " D2LogicalModel" package association roles

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

* + - 1. " D2LogicalModel" package attributes

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

* + 1. "GroupOfLocations " package
       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 |
| Area | Area | A geographic or geometric defined area which may be qualified by height information to provide additional geospatial discrimination (e.g. for snow in an area but only above a certain altitude). |  | no |
| TpegAreaLocation | Tpeg area location | A geographic or geometric area defined by a TPEG-Loc structure which may include height information for additional geospatial discrimination. |  | yes |
| TpegGeometricArea | Tpeg geometric area | A geometric area defined by a centre point and a radius. |  | no |

Table 5— Classes of the "GroupOfLocations" package

* + - 1. "GroupOfLocations" package association roles

| **Class name** | **Role name** | **Designation** | **Definition** | **Multiplicity** | **Target** |
| --- | --- | --- | --- | --- | --- |
| TpegGeometricArea | centrePoint | Centre point | Centre point of a circular geometric area. | 1..1 | PointCoordinates |

Table 6— Associations of the "GroupOfLocations" package

* + - 1. "GroupOfLocations" package attributes

| **Class name** | **Attribute name** | **Designation** | **Definition** | **Multiplicity** | **Type** |
| --- | --- | --- | --- | --- | --- |
| 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 |
| TpegAreaLocation | tpegAreaLocationType | Tpeg area location type | The type of TPEG location. | 1..1 | TpegLoc01AreaLocationSubtypeEnum |
| TpegGeometricArea | radius | Radius | The radius of the geometric area identified. | 1..1 | MetresAsNonNegativeInteger |

Table 7— Attributes of the "GroupOfLocations" package

* + 1. "PredefinedLocationsPublication" package
       1. "PredefinedLocationsPublication" package classes

| **Class name** | **Designation** | **Definition** | **Stereotype** | **Abstract** |
| --- | --- | --- | --- | --- |
| DsrcProtectedZoneExtension | Dsrc protected zone extension | A level b extension for providing optional data elements for a protected zone. |  | no |
| ExtendedPredefinedLocation | Extended predefined location | Extension for adding additional details for a PredefinedLocation |  | no |
| PredefinedLocation | Predefined location | An identifiable versioned instance of a single predefined location. | VersionIdentifiable | no |
| PredefinedLocationContainer | Predefined location container | A publication containing one or more groups of predefined locations organised either as litineraries, non ordered groups or as individual locations. |  | yes |
| PredefinedLocationsPublication | Predefined locations publication | A publication containing one or more groups of predefined locations organised either as litineraries, non ordered groups or as individual locations. |  | no |
| Validity | Validity | Specification of validity, either explicitly or by a validity time period specification which may be discontinuous. |  | no |

Table 8— Classes of the "PredefinedLocationsPublication" package

* + - 1. "PredefinedLocationsPublication" package association roles

| **Class name** | **Role name** | **Designation** | **Definition** | **Multiplicity** | **Target** |
| --- | --- | --- | --- | --- | --- |
| DsrcProtectedZoneExtension | protectedZoneValidity | Protected zone validity | Validity of a protected zone. | 0..1 | Validity |
| Validity | validityTimeSpecification | 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 9— Associations of the "PredefinedLocationsPublication" package**

* + - 1. "PredefinedLocationsPublication" package attributes

| **Class name** | **Attribute name** | **Designation** | **Definition** | **Multiplicity** | **Type** |
| --- | --- | --- | --- | --- | --- |
| DsrcProtectedZoneExtension | protectedZoneType | Protected zone type | Type of protected zone. | 1..1 | ProtectedZoneTypeEnum |
| OverallPeriod | overallStartTime | Overall start time | Start of bounding period of validity defined by date and time. | 1..1 | DateTime |
|  | overallEndTime | Overall end time | End of bounding period of validity defined by date and time. | 0..1 | DateTime |
| PredefinedLocation | predefinedLocationName | Predefined location name | A name assigned to the predefined location (e.g. extracted out of the network operator's gazetteer). | 0..1 | MultilingualString |
| Validity | validityStatus | Validity status | Specification of validity, either explicitly overriding the validity time specification or confirming it. | 1..1 | ValidityStatusEnum |
|  |  |  |  |  |  |

**Table 10— Attributes of the "PredefinedLocationsPublication" package**

* 1. Data Dictionary of <<enumerations>> for “Protected zones Profile”

This clause contains the definitions of all enumerations which are used in the “Protected zones Profile”.

* + 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 11— Values contained in the enumeration "ConfidentialityValueEnum"

* + 1. The <<enumeration>> "CountryEnum"

List of countries.

| **Enumerated value name** | **Designation** | **Definition** |
| --- | --- | --- |
| at | at | Austria |
| de | de | Germany |

Table 12— Values contained in the enumeration "CountryEnum"

* + 1. 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 13— Values contained in the enumeration "InformationStatusEnum"

* + 1. The <<enumeration>> "ProtectedZoneTypeEnum"

Types of protected zones.

| **Enumerated value name** | **Designation** | **Definition** |
| --- | --- | --- |
| cenDsrcTolling | Cen dsrc tolling | CEN\_DSRC mounted on gantry |

Table 14— Values contained in the enumeration "ProtectedZoneTypeEnum"

* + 1. The <<enumeration>> "TpegLoc01AreaLocationSubtypeEnum"

Types of area.

| **Enumerated value name** | **Designation** | **Definition** |
| --- | --- | --- |
| largeArea | Large area | A geographic or geometric large area. |
| other | Other | Other than as defined in this enumeration. |

Table 15— Values contained in the enumeration "TpegLoc01AreaLocationSubtypeEnum"

* + 1. 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 16— Values contained in the enumeration "ValidityStatusEnum"**

* 1. Alphabetical list of attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Class name** | **Designation** | **Definition** | **Multiplicity** | **Type** |
| 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 |
| 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 |
| 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 |
| protectedZoneType | DsrcProtectedZoneExtension | Protected zone type | Type of protected zone. | 1..1 | ProtectedZoneTypeEnum |
| 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 |
| tpegAreaLocationType | TpegAreaLocation | Tpeg area location type | The type of TPEG location. | 1..1 | TpegLoc01AreaLocationSubtypeEnum |
| radius | TpegGeometricArea | Radius | The radius of the geometric area identified. | 1..1 | MetresAsNonNegativeInteger |
| validityStatus | Validity | Validity status | Specification of validity, either explicitly overriding the validity time specification or confirming it. | 1..1 | ValidityStatusEnum |

Table 17- Alphabetical list of attributes

* 1. Alphabetical list of roles

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Role name** | **Class name** | **Designation** | **Definition** | **Multiplicity** | **Target** |
| centrePoint | TpegGeometricArea | Centre point | Centre point of a circular geometric area. | 1..1 | PointCoordinates |
| protectedZoneValidity | DsrcProtectedZoneExtension | Protected zone validity | Validity of a protected zone. | 0..1 | Validity |
| validityTimeSpecification | validityTimeSpecification | 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 |
| publicationCreator | PayloadPublication | Publication creator | An identifier/name whose range is specific to the particular country. | 1..1 | InternationalIdentifier |
| supplierIdentification | Exchange | Supplier identification | An identifier/name whose range is specific to the particular country. | 1..1 | InternationalIdentifier |

Table 18- Alphabetical list of roles

* 1. Figures



Figure 1: Protected zones model