DATEX II

Traffic signal timing and configuration models

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Topics

1. Origin and status of the TrafficSignals model
2. Context within DATEX II version 3
3. Design
4. Forthcoming amendments

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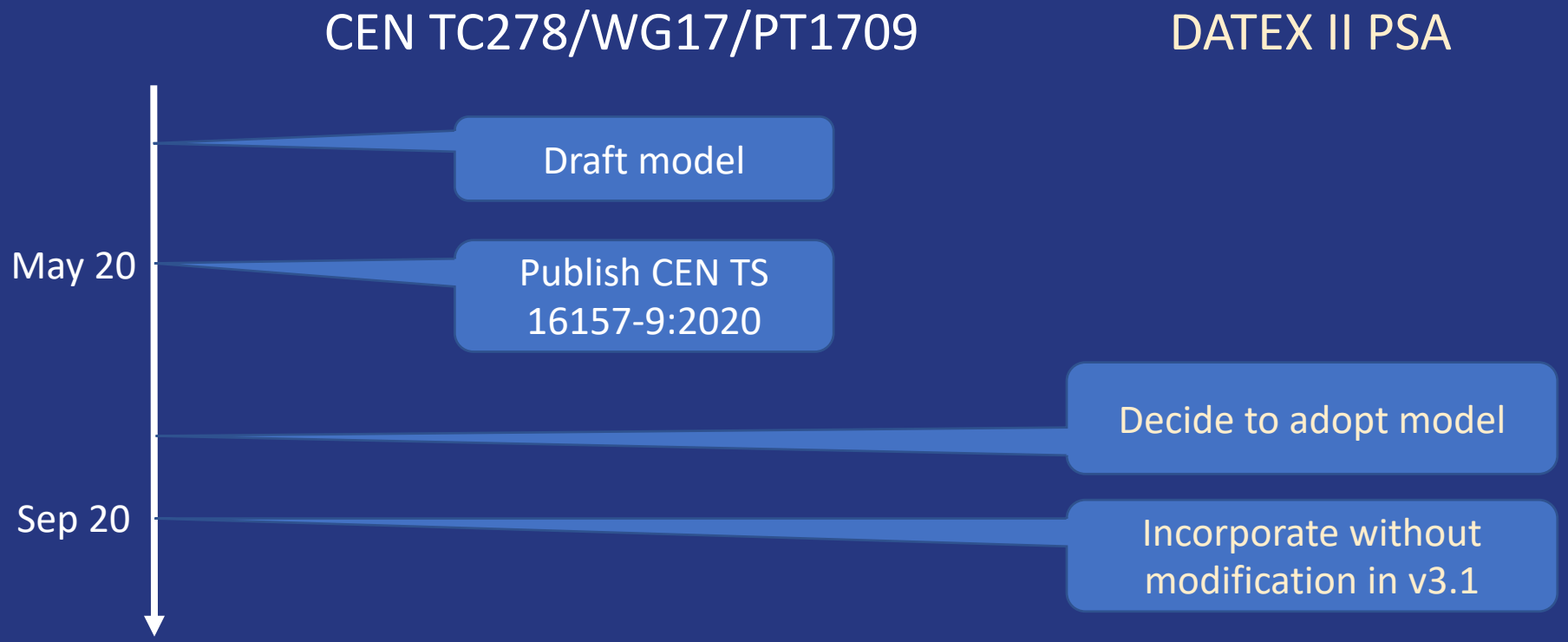
Origin of the TrafficSignals model

The DATEX II PSA has not designed or governed this model…



…but has now adopted it and will improve and maintain its design in future.

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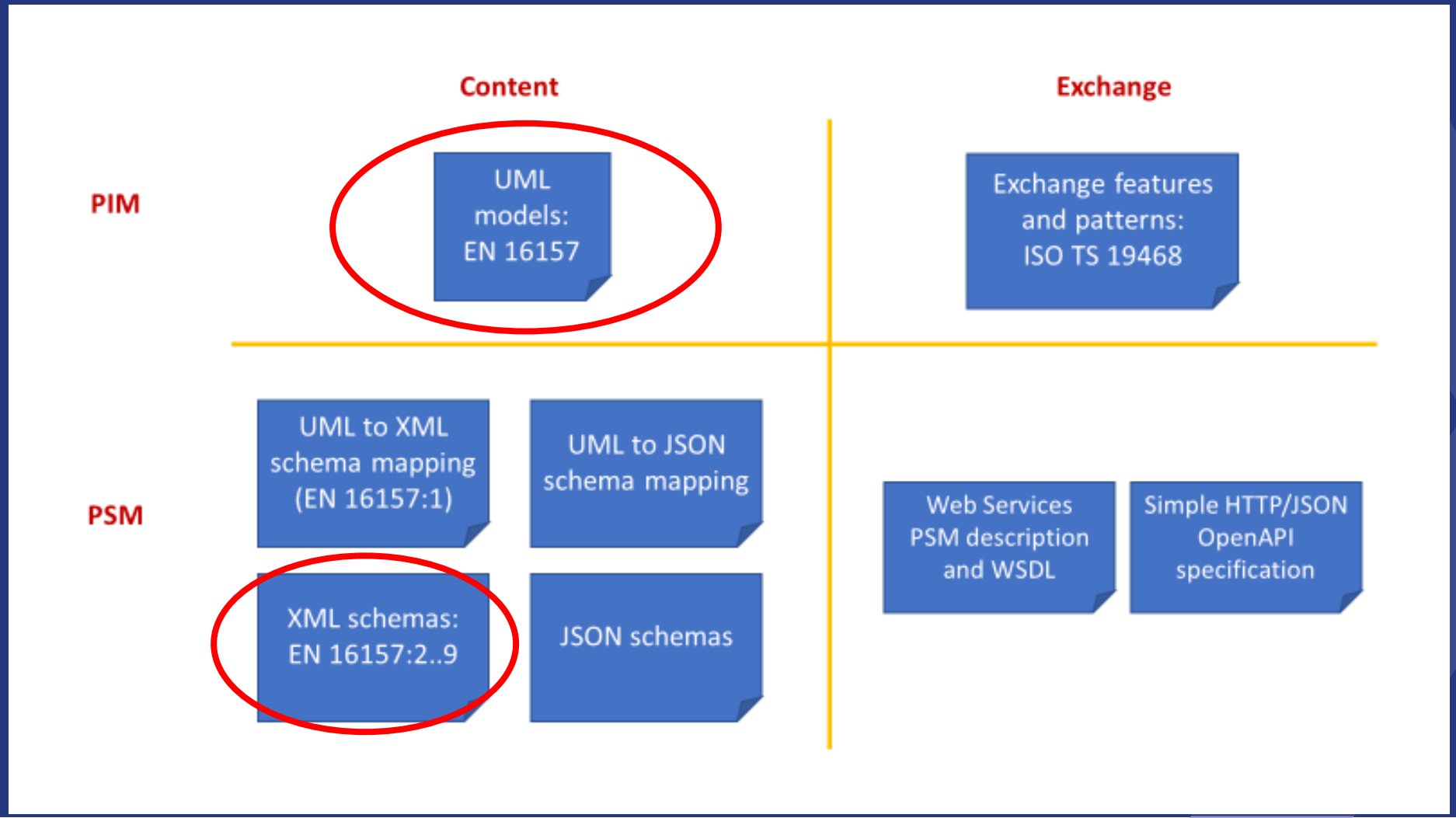
TrafficSignals is a *content* specification



Content | Platform-independent models

Release 3.0 (2018)

Common elements

Location referencing

Traffic situation

D2Light (2019)

Traffic situation (light)

Release 3.1 (2020) adds

VMS

Road traffic data

Extensions:

- Urban
- Traffic management plans
- Enhanced rerouting
- **Traffic signal applications**

Release 3.2 (2021) to add

Parking

Vehicle energy infrastructure

Device status and faults

Traffic regulations

Enhanced satellite positioning

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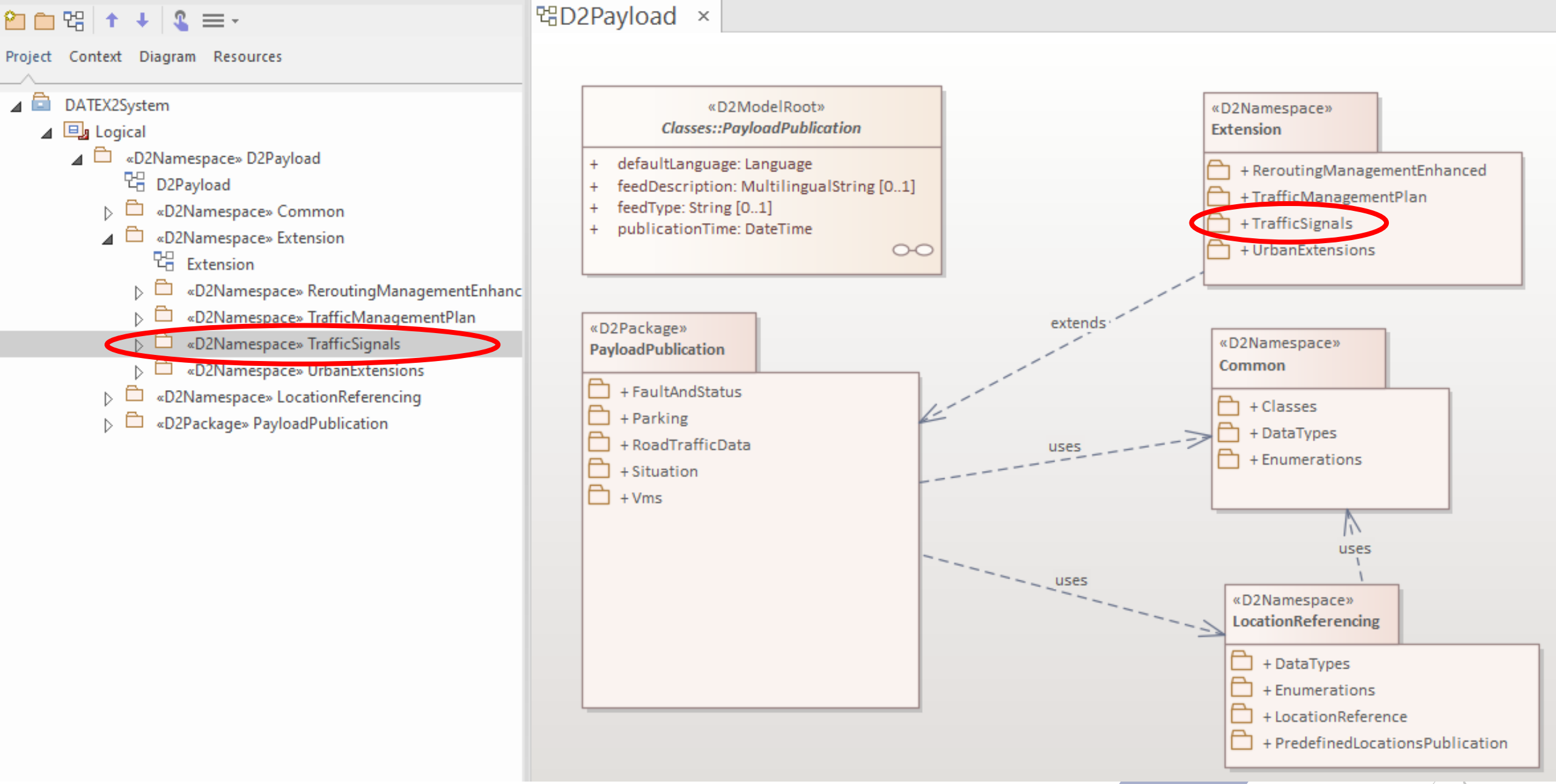
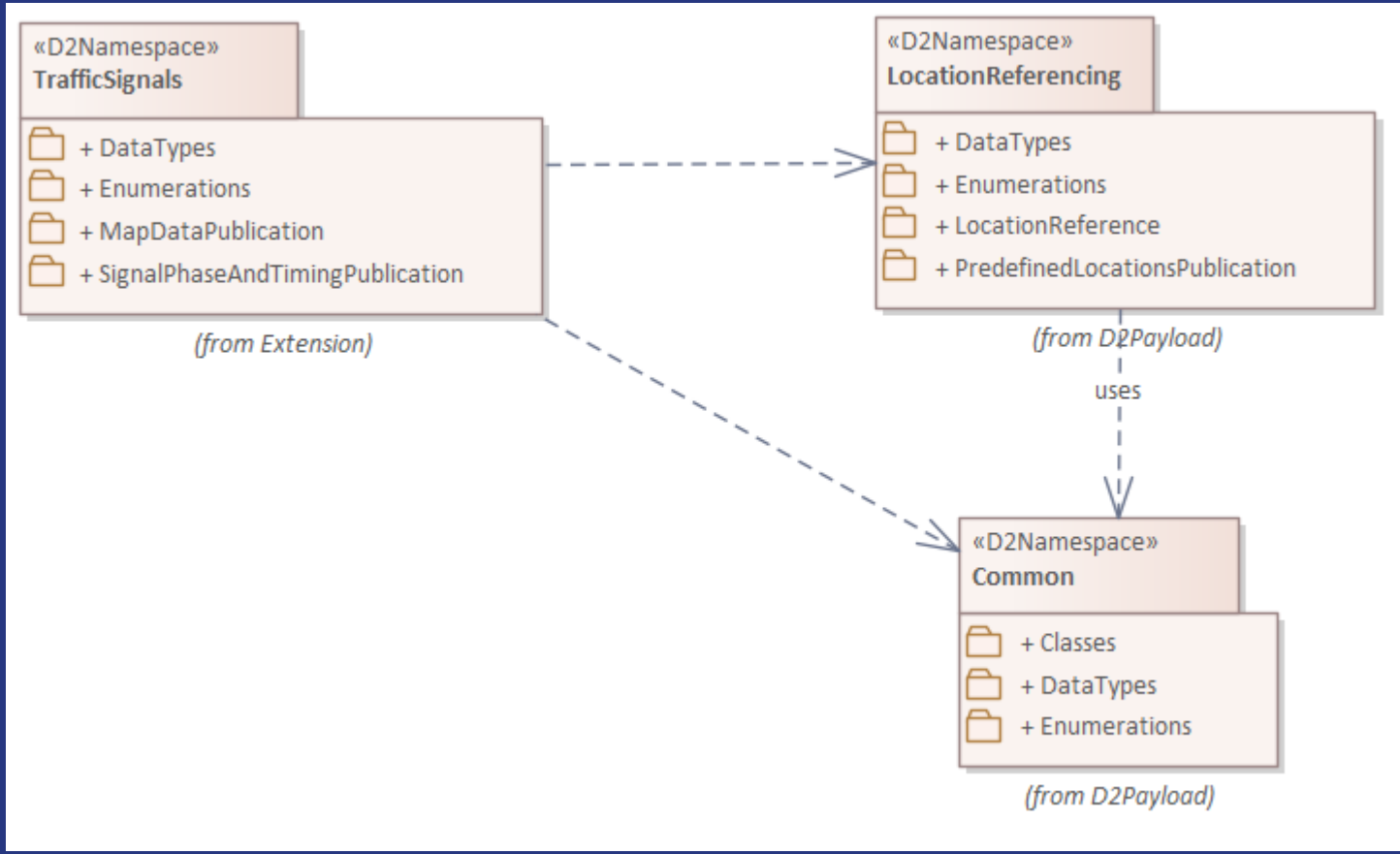
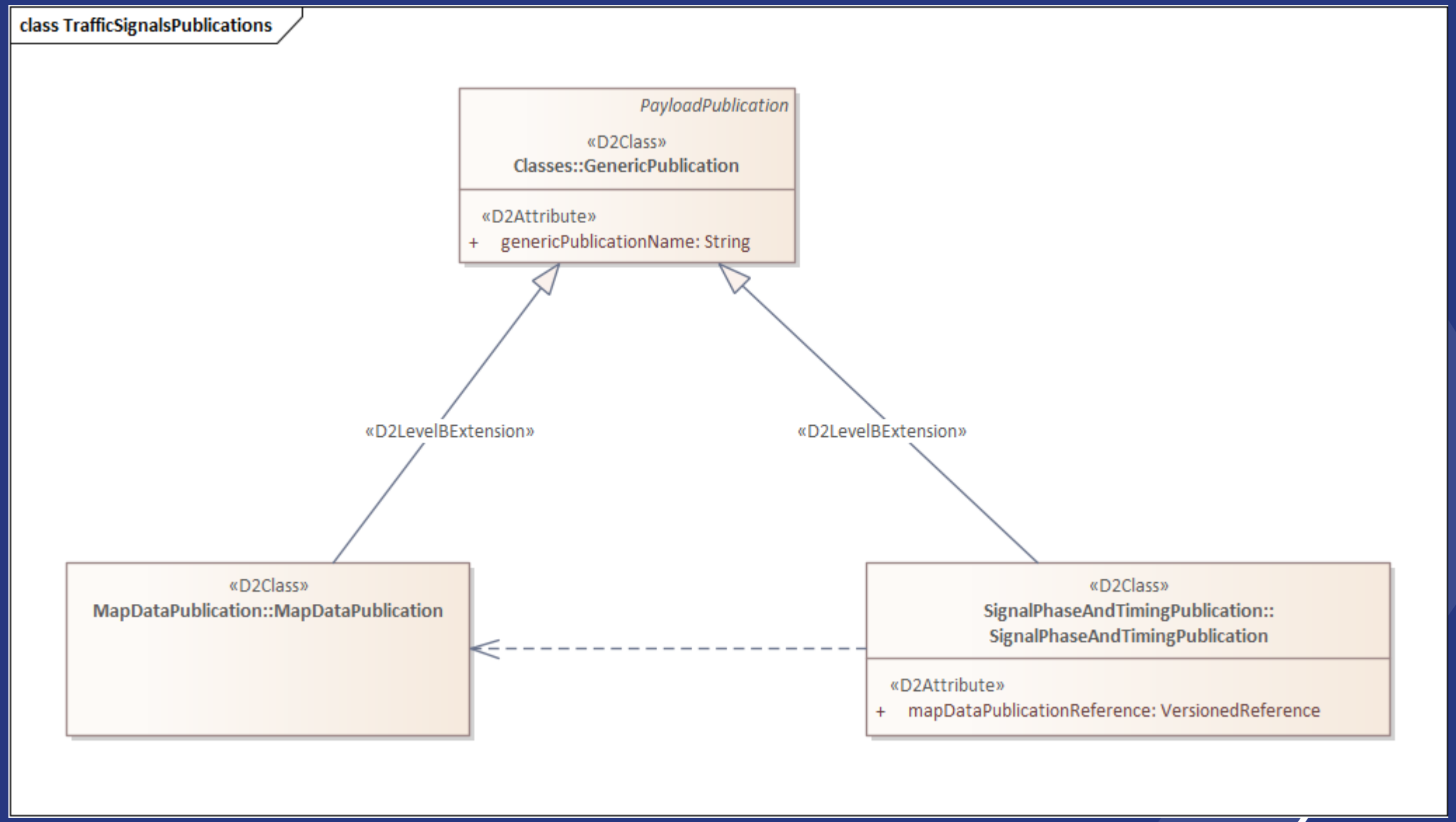

Project
Context
Diagram
Resources
DATEX2System
Logical
«D2Namespace» D2Payload
D2Payload
«D2Namespace» Common
«D2Namespace» Extension
Extension
«D2Namespace» ReroutingManagementEnhanc
«D2Namespace» TrafficManagementPlan
«D2Namespace» TrafficSignals
«D2Namespace» UrbanExtensions
«D2Namespace» LocationReferencing
«D2Package» PayloadPublication
D2Payload
«D2ModelRoot»
Classes::PayloadPublication
+ defaultLanguage: Language
+ feedDescription: MultilingualString [0..1]
+ feedType: String [0..1]
+ publicationTime: DateTime
«D2Namespace»
Extension
+ ReroutingManagementEnhanced
+ TrafficManagementPlan
+ TrafficSignals
+ UrbanExtensions
extends
«D2Package»
PayloadPublication
+ FaultAndStatus
+ Parking
+ RoadTrafficData
+ Situation
+ Vms
uses
«D2Namespace»
Common
+ Classes
+ DataTypes
+ Enumerations
uses
uses
«D2Namespace»
LocationReferencing
+ DataTypes
+ Enumerations
+ LocationReference
+ PredefinedLocationsPublication

Namespace dependencies





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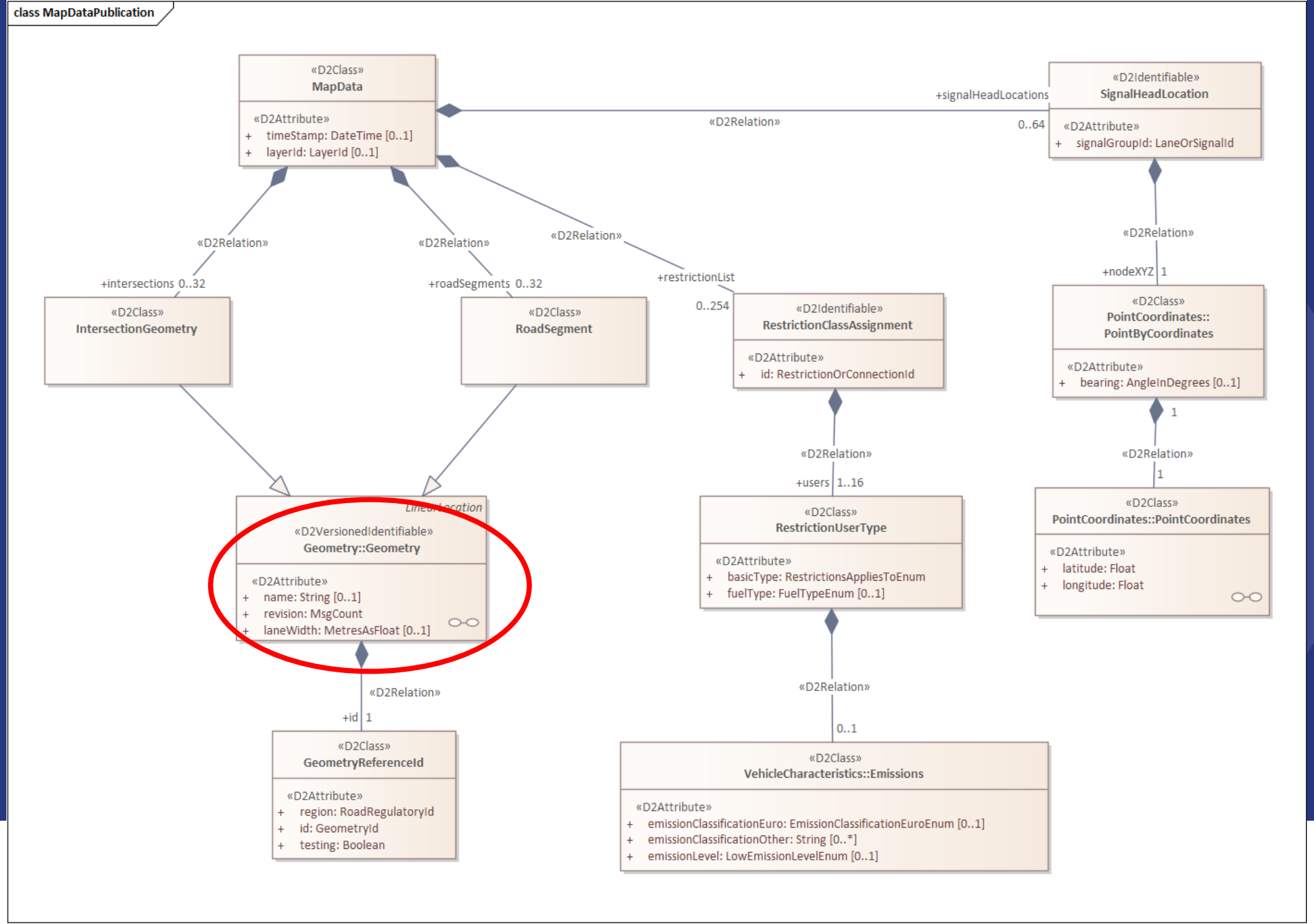
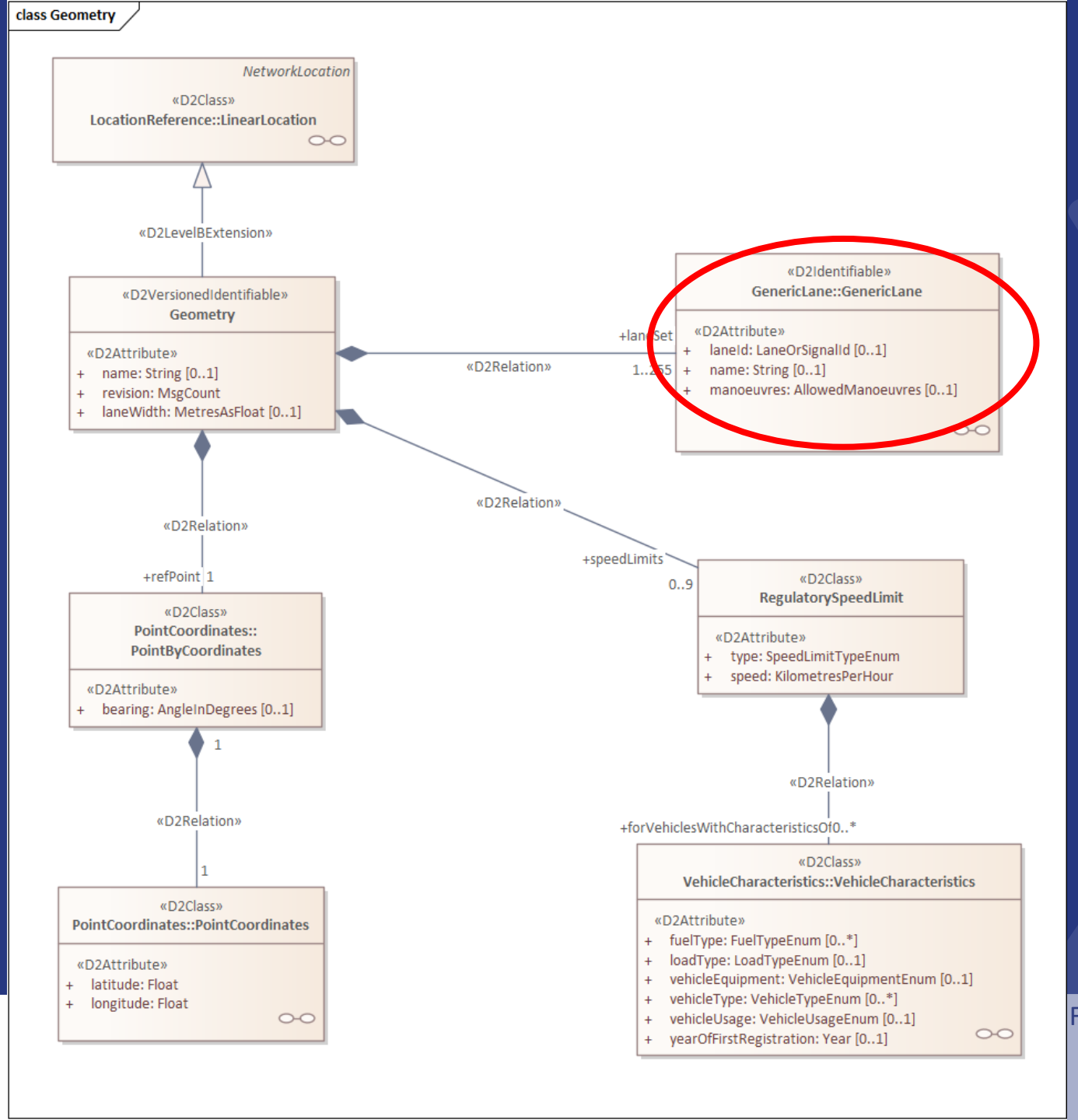
Traffic signals models in DATEX II

- The current TrafficSignals extension model is not the only one that exists
  - (but it's the one that has been adopted by the DATEX II SG.)
- The TrafficSignalStatusPublication, an extension of DATEX II v2.3, based on UK UTMC centre-to-centre traffic signals model is also available:

https://www.datex2.eu/implementations/extension_directory/trafficsignalstatus


class MapDataPublication
«D2Class»
MapData
«D2Attribute»
+ timeStamp: DateTime [0..1]
+ layerId: LayerId [0..1]
«D2Relation»
+signalHeadLocations
0..64
«D2Identifiable»
SignalHeadLocation
«D2Attribute»
+ signalGroupId: LaneOrSignalId
«D2Relation»
+nodeXYZ 1
«D2Class»
PointCoordinates::
PointByCoordinates
«D2Attribute»
+ bearing: AngleInDegrees [0..1]
1
«D2Relation»
1
«D2Class»
PointCoordinates::PointCoordinates
«D2Attribute»
+ latitude: Float
+ longitude: Float
«D2Relation»
+intersections 0..32
«D2Class»
IntersectionGeometry
«D2Relation»
+roadSegments 0..32
«D2Class»
RoadSegment
«D2Relation»
+restrictionList
0..254
«D2Identifiable»
RestrictionClassAssignment
«D2Attribute»
+ id: RestrictionOrConnectionId
«D2Relation»
+users 1..16
«D2Class»
RestrictionUserType
«D2Attribute»
+ basicType: RestrictionsAppliesToEnum
+ fuelType: FuelTypeEnum [0..1]
«D2Relation»
0..1
«D2Class»
VehicleCharacteristics::Emissions
«D2Attribute»
+ emissionClassificationEuro: EmissionClassificationEuroEnum [0..1]
+ emissionClassificationOther: String [0..*]
+ emissionLevel: LowEmissionLevelEnum [0..1]
LinearLocation
«D2VersionedIdentifiable»
Geometry::Geometry
«D2Attribute»
+ name: String [0..1]
+ revision: MsgCount
+ laneWidth: MetresAsFloat [0..1]
«D2Relation»
+id 1
«D2Class»
GeometryReferenceId
«D2Attribute»
+ region: RoadRegulatoryId
+ id: GeometryId
+ testing: Boolean



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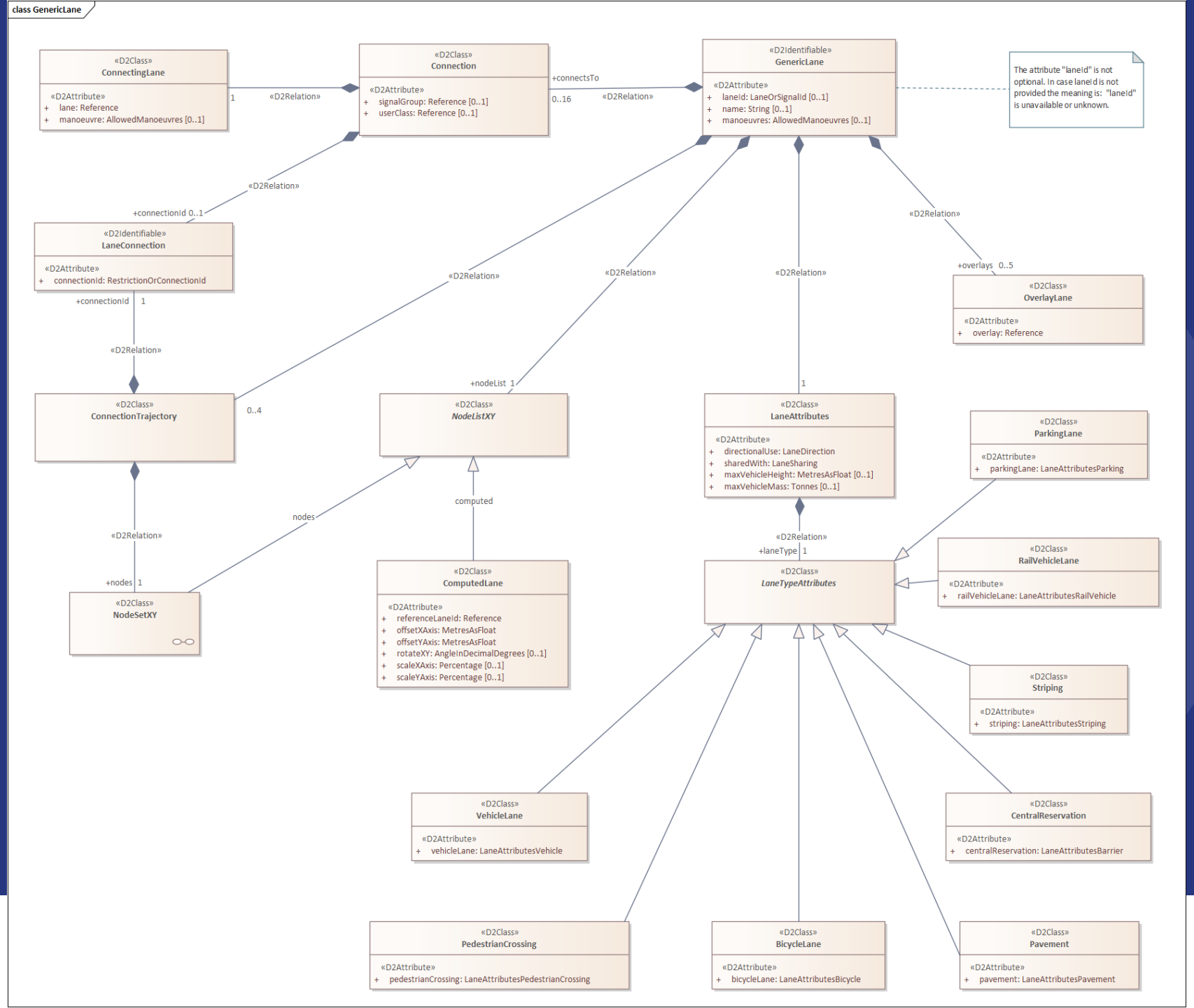

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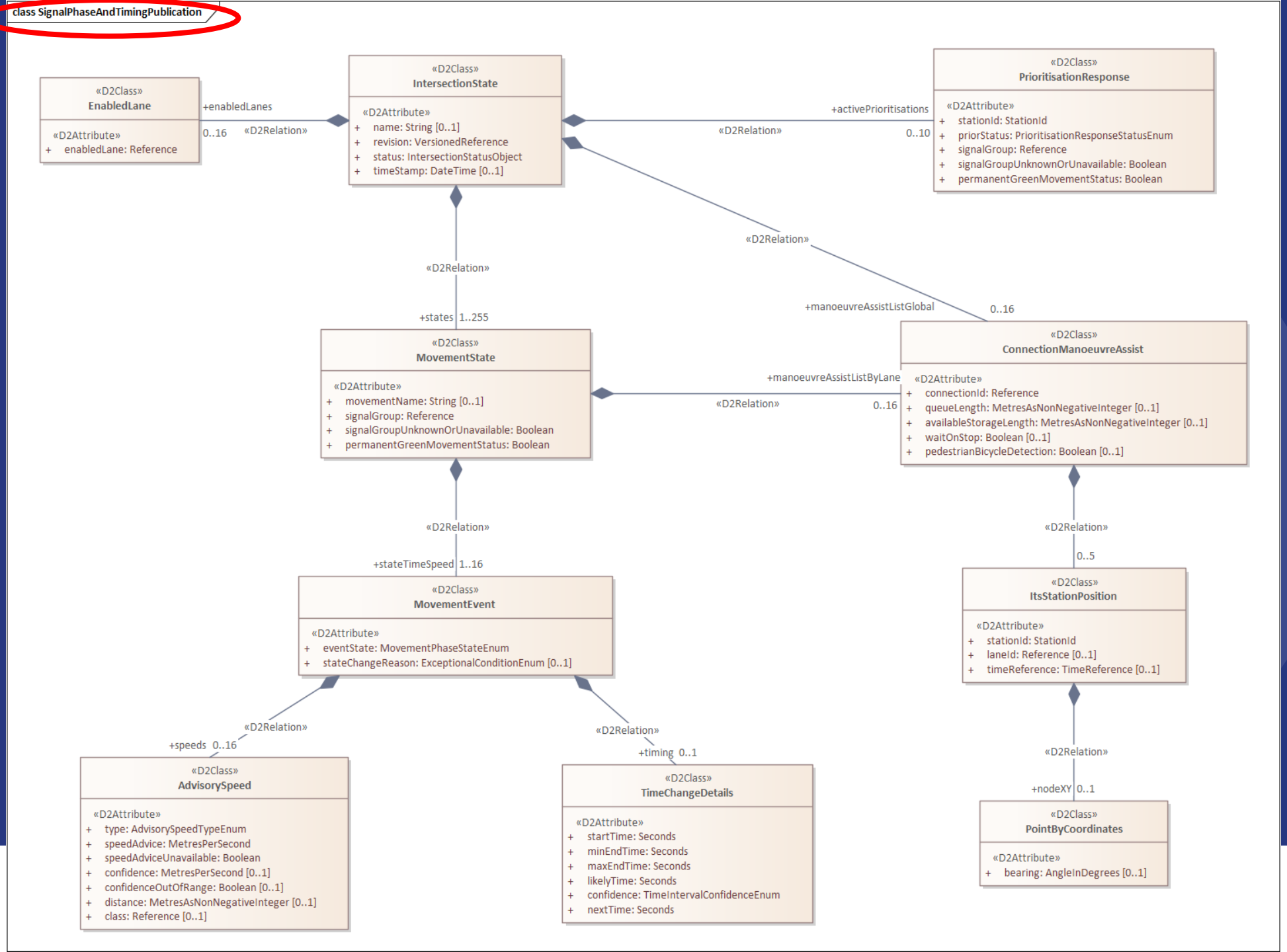

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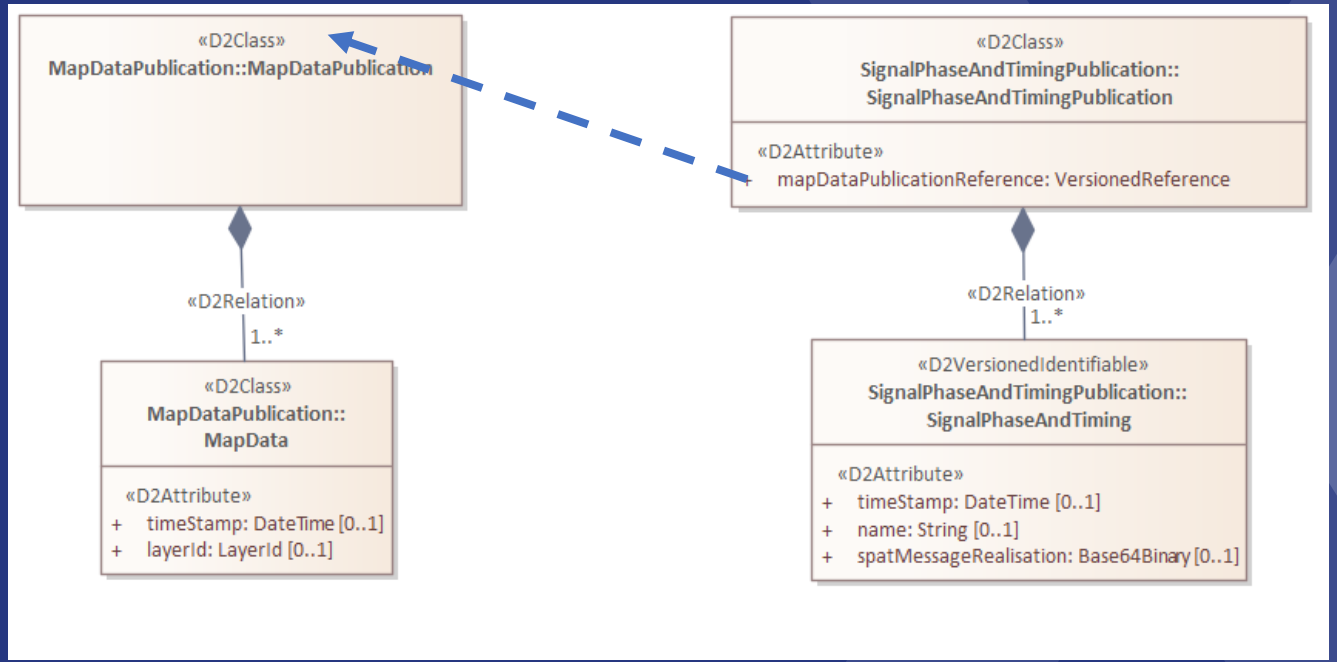
Forthcoming amendments

In release 3.2 (Spring 2021):

Fix bug in TS 16157-9 model preventing use!

In subsequent release:

Improve design and revise TS 16157-9 (e.g. enable JSON)



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Thank you

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