Change history Parking Publications

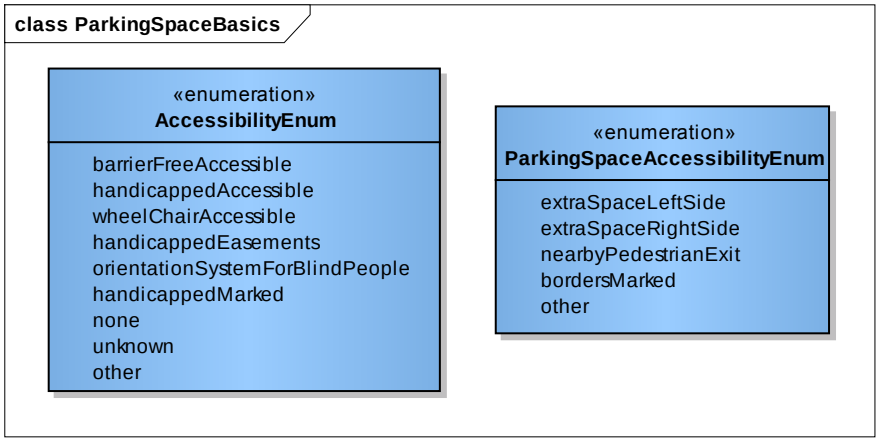
Changes in v1.0a (bug fixing; referred to v1.0)

- Schema only: The attributes of class DataValue (which are of Level A) have not been included in the schema before. They have been added now. This effects only the file ParkingStatusPublication.xsd
- Enterprise Architect only: There was a visualisation error in the EA-picture for TariffsAndPayment that is corrected now. The schema files have been not affected at all.
- Definitions: Two erroneous definitions have been updated (definition of literal other from ParkingUsageScenario and definition of class vehicleCountWithinInterval).

Changes in v1.0 (referred to v0.7)

All pictures in this document refer to the most current version v1.0a!

- Added the literal unknown to a number of enumerations for harmonisation with TPEG-PKI
- Changed multiplicity of parkingLayout from [0..1] to [0..*]
- ParkingRoute is now versioned identifiable. There is a new structure ParkingRouteByReference. There is a new dynamic class with Boolean attribute parkingRouteActive.
- Changed all Equiments into the singular form (this effected shower, toilet, refuseBin)
- Added literal overnightAccommodation to ServiceFacilityEnum
- Added literal publicPhone to EquipmentTypeEnum, added 'public' to publicCoinPhone and publicCardPhone
- Added attribute blurredAvailability (Boolean) to ParkingRecordStatus
- Renamed EletricChargeUsageType to ChargingStationUsageTypeEnum
- Changes in the extension of Period:
  Purpose: Now it will be possible to define a set of days like "Sundays and Holidays"
  - Added literal holidays to SpecialDayTypeEnum
  - Renamed DayType to SpecialDay
  - Changed role to DayType (now SpecialDay) to recurringSpecialDay with multiplicity [0..*]
  - Added mandatory attribute intersectWithApplicableDays (Boolean) with definition: "When true, the period is the intersection of applicable days and this special day. When false, the period is the union of applicable days and this special day."
  - specialDayType set mandatory.
- Derived new Enumeration AccessibilityEnum (a) from ParkingSpaceAccessibilityEnum (b).
  (a) is of general context and reused in ParkingAccess, ParkingSpaceBasics and ParkingEquipmentOrServiceFacility (new attribute: accessibility).
  Literal pedestrianBarrierFree was removed from AccessCategoryEnum.
  (b) keeps some special attributes for a parking space and is only used in ParkingSpaceBasics. Some literals in this context are renamed or new.
  The Boolean attribute handicappedAccessible was removed from ParkingEquipmentOrServiceFacility.



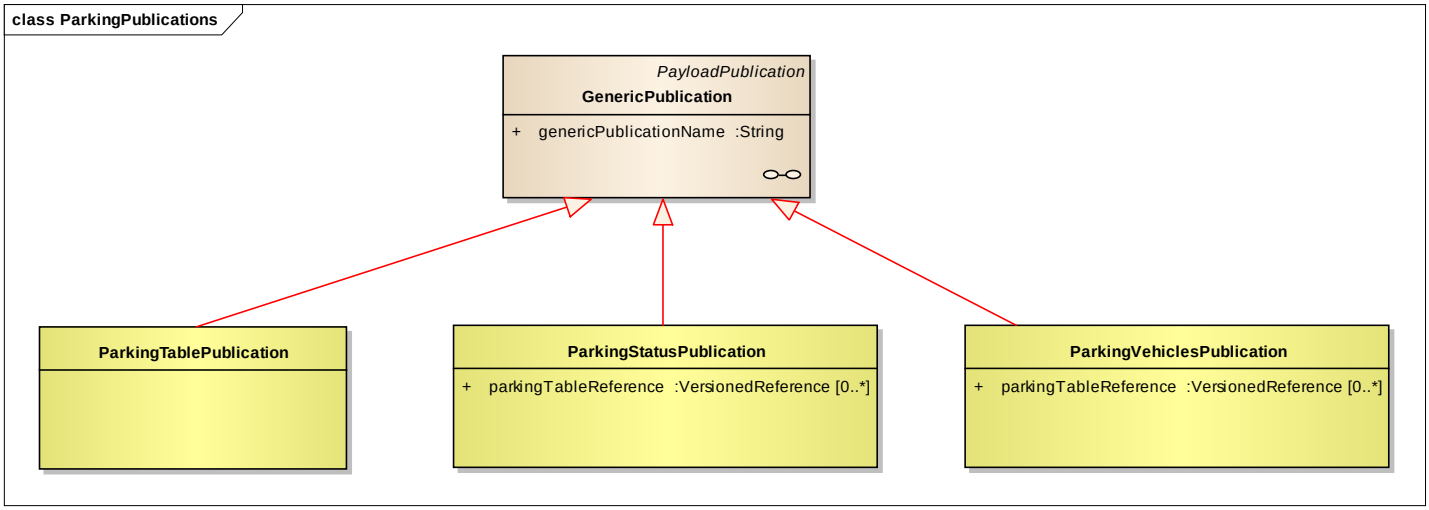
- In the Tarriffs model, changed aggregation from ChargeBand to Period into OverallPeriod, i.e. the applicablePeriod can use the complete structure of the Validity model now. The multiplicity for this aggregation is now [0..1].
- Class Contact is not abstract any longer and got two new attributes: contactUnknown and contactNotDefined. Class OpeningTimes got two similar new attributes.
- ParkingOccupancyTrendEnum got more literals to support TPEG-PKI.
- Added RoadNode as a specialisation of Road with attribute junctionName to support corresponding junction names for accesses (e.g. for truck parkings on motorways).
- Role primaryRoad from class parkingAccess has now multiplicity [0..*]
- The (existing) role from ParkingEquipmentOrServiceFacility to VehicleCharacterics got the name applicableForVehicles.
- A ParkingRecord got a new association to an Area with role name entireArea to specify an underlaying area this parking record is located in or belongs to. Examples are a state, province, truck parking area etc.
- The attribute parkingMode in TariffsAndPayment has now multiplicity [0..*]

Changes in v0.7 (referred to v0.5)

(This chapter covers the rest of this document, there is no change history for previous versions)

All pictures in this document refer to the most current version v1.0a!

This document shows the most important changes on the Parking Publications model from version 0.7 in relation to version 0.5, which was the (first) CEN inquiry version. Please note, that this document is not a complete documentation of the model.



Overview of “ParkingPublications”

Renaming

A number of elements have been renamed, to provide shorter names or to sharpen the semantics.

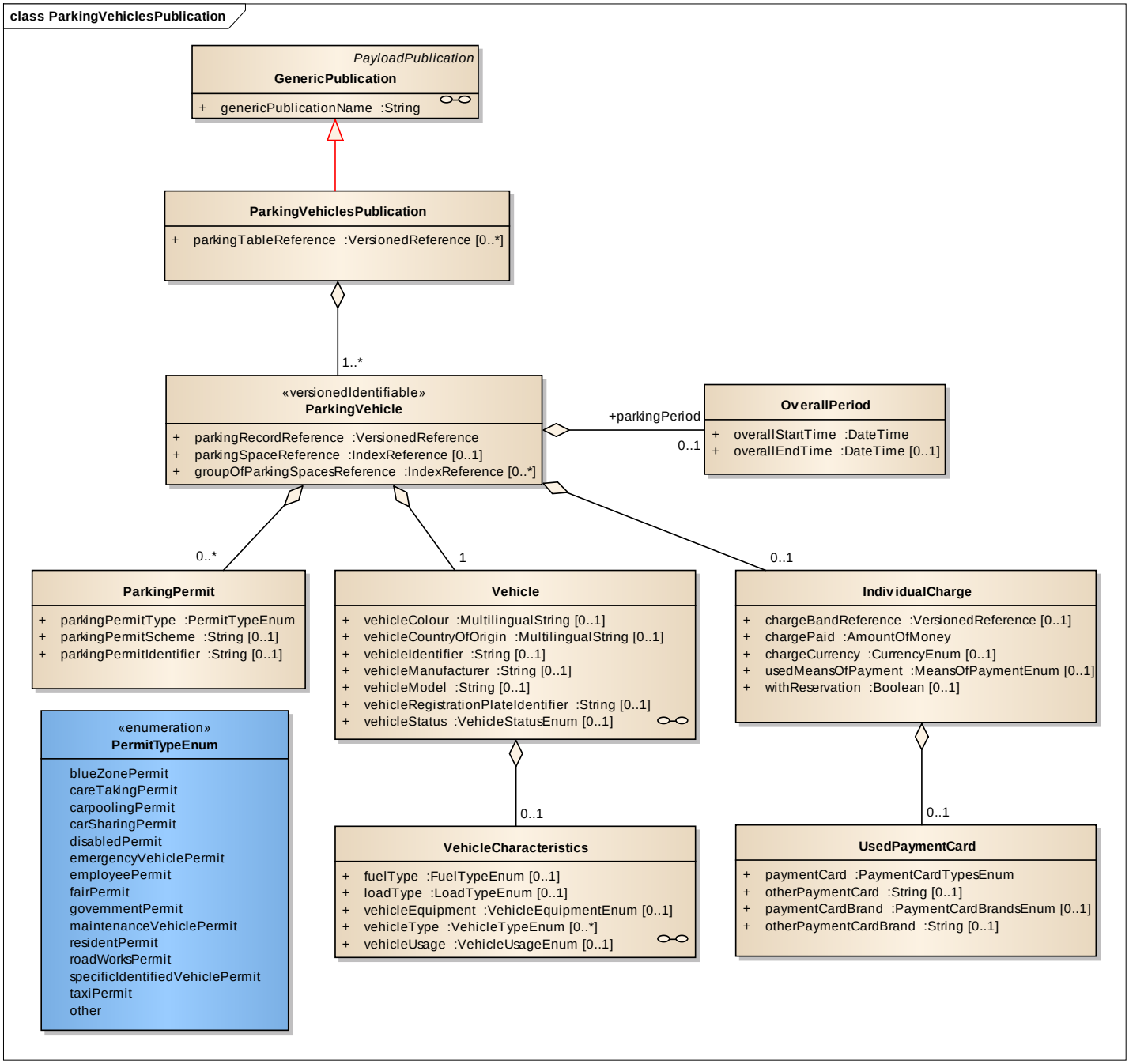
See extra document for a list of these renaming issues.

All pictures in this document include the new names.

ParkingVehiclesPublication (new)

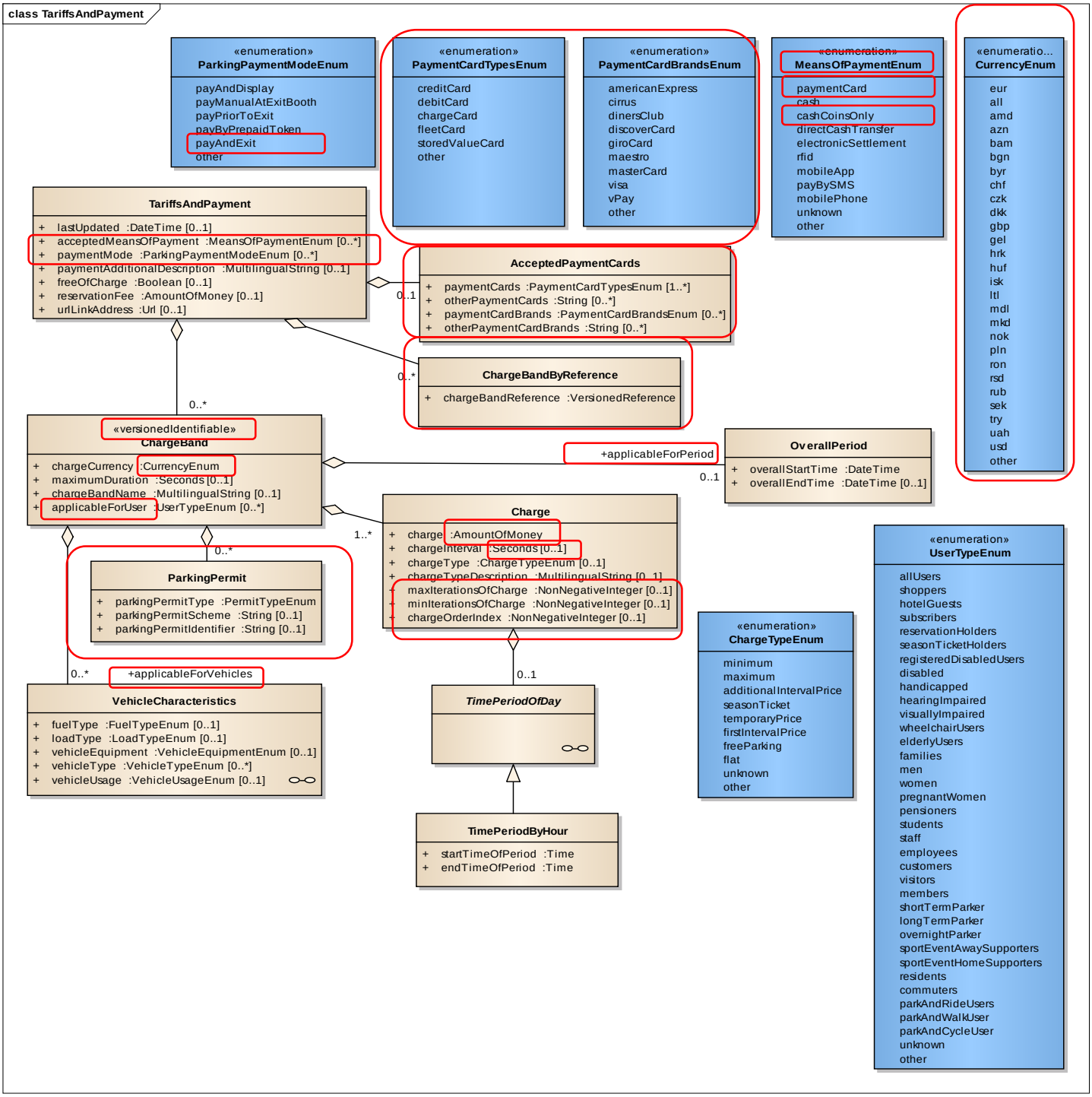
The ParkingVehicle is introduced as a new separate publication. See picture for details.

OverallPeriod and VehicleCharacteristics are elements from Level A. For VehicleCharacteristics, the extension of the parking model (more types, loads etc.) is available.



For ParkingPermit see chapter “Assigment”.

Tariffs and payment (NL 015, NL 016, NL 023, Belgium)



PaymentMethodEnum was renamed to MeansOfPayment (according attribute: acceptedMeansOfPayment):

- Added paymentCard (as a general term)
- Removed all types of cards → now in PaymentCardTypesEnum
- Removed smartcard (not useful, it's more a kind of technology)
- Added cashCoinsOnly

PaymentModusEnum was renamed to ParkingPaymentModeEnum:

- Added payAndExit (see also chapter “Entrance / Exit” resp. “Access”)

Added new component AceptedPaymentCards:

Added PaymentCardsTypeEnum:

- Literals adopted from Wikipedia: http://en.wikipedia.org/wiki/Payment_card
- There is a String attribute [0..*] for further card types

Added PaymentCardBrandsEnum:

- Most popular brands for credit and debit cards
- Brands of fleet- or fuelcards are not included, as this would be an unmanageable list in my opinion
- There is a String attribute [0..*] for further card brands

A CurrencyEnum was introduced. It comprises the three character codes of European currencies including Rubel and US$.

For a Charge, a min iteration value and a max iteration value as well as an order attribute were introduced. This is to specifiy charges like in the following example: The first 2 hours are for free, afterwards, up to 5 hours cost 3 Euros per hour, afterwards 1 Euro each hour.

Their definitions are:

minIterationsOfcharge: This charge must not be applied more often within this ChargeBand than specified in this attribute. Thus it is possible to specifiy the first hour for free, for example.

maxIterationsOfCharge: This charge must be applied within this ChargeBand at least as often as specified in this attribute. Thus it is possible to specifiy the first hour in an expensive manner, for example.

chargeOrderIndex: A non-unique index which forms an order for applying charges, i.e. a charge may never be applied afterwards a charge with a higher index. For same indices there is no order-restriction. You can skip charges unless their 'minIterationsOfCharge' is not > 0.

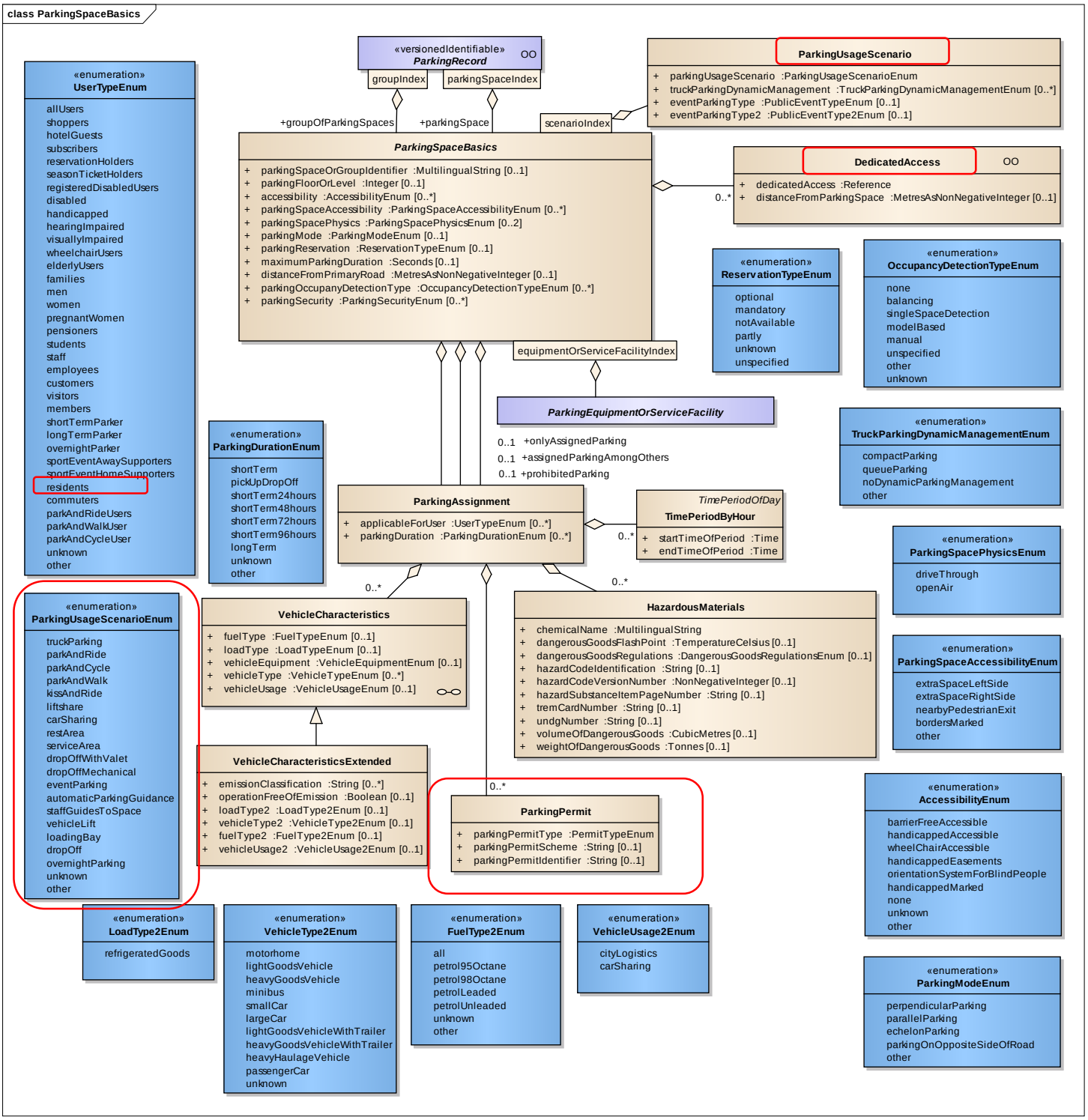
The data type of chargeInterval was changed to Seconds.

A ChargeBand is now *versionedIdentifiable* and there is a new component ChargeBandByReference. This allows to predefine and reuse ChargeBands.

Some roles and attributes were renamed using the term ‘applicable’ – see picture above.

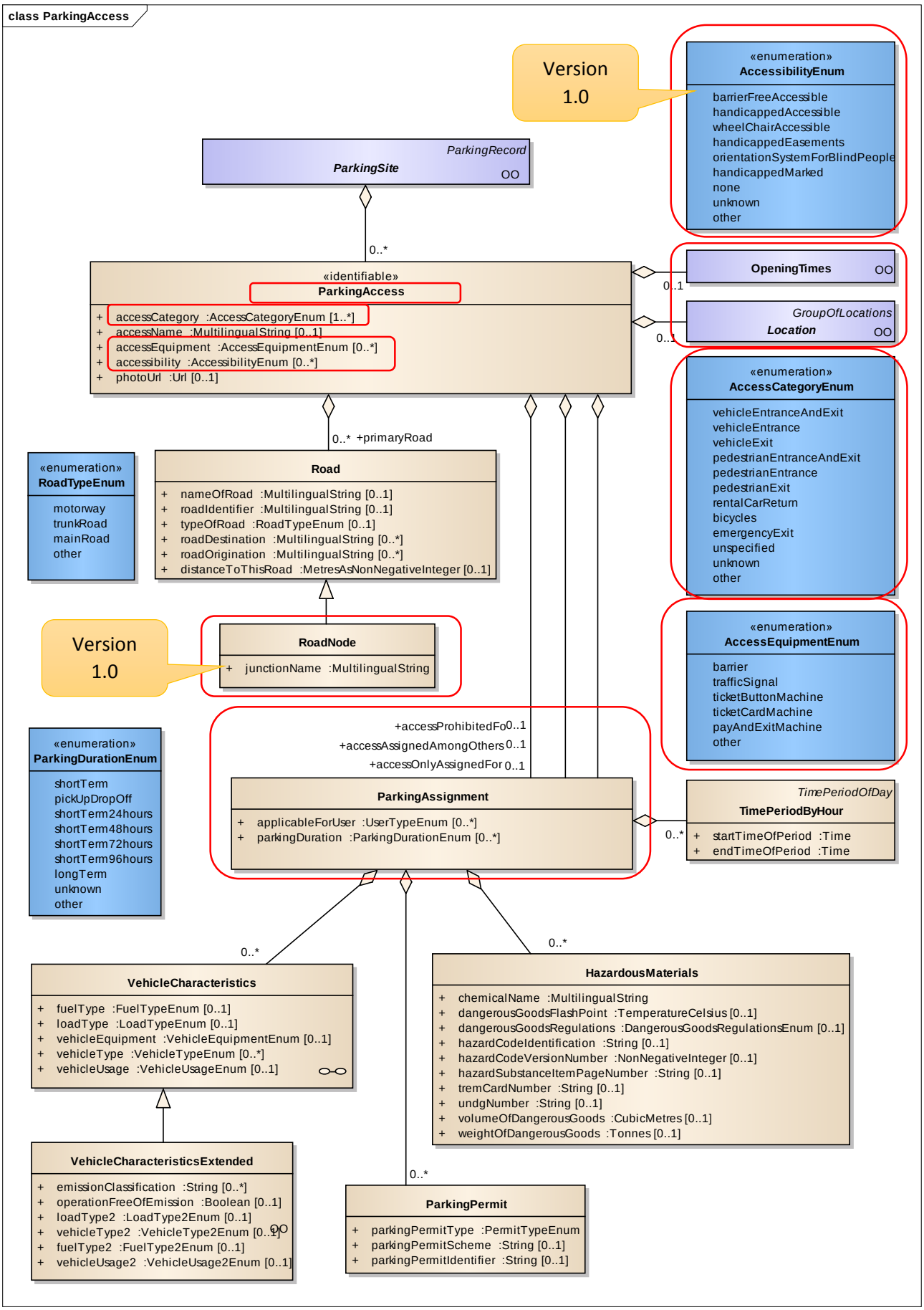
For ParkingPermit see next chapter “Assigment”.

Assignment



- Added component ParkingPermit with type (see enumeration values in picture), scheme and identifier. This incorporates user permits as well as vehicle permits.
- Deleted all permit-related attributes in VehicleExtended.
- Renamed residentsWithPermit within UserTypeEnum to residents.
- In addition, ParkingPermit is also added as an aggregation [0..*] to ChargeBand (not visualized here).

ParkingAccess (formerly called Entrance / Exit)



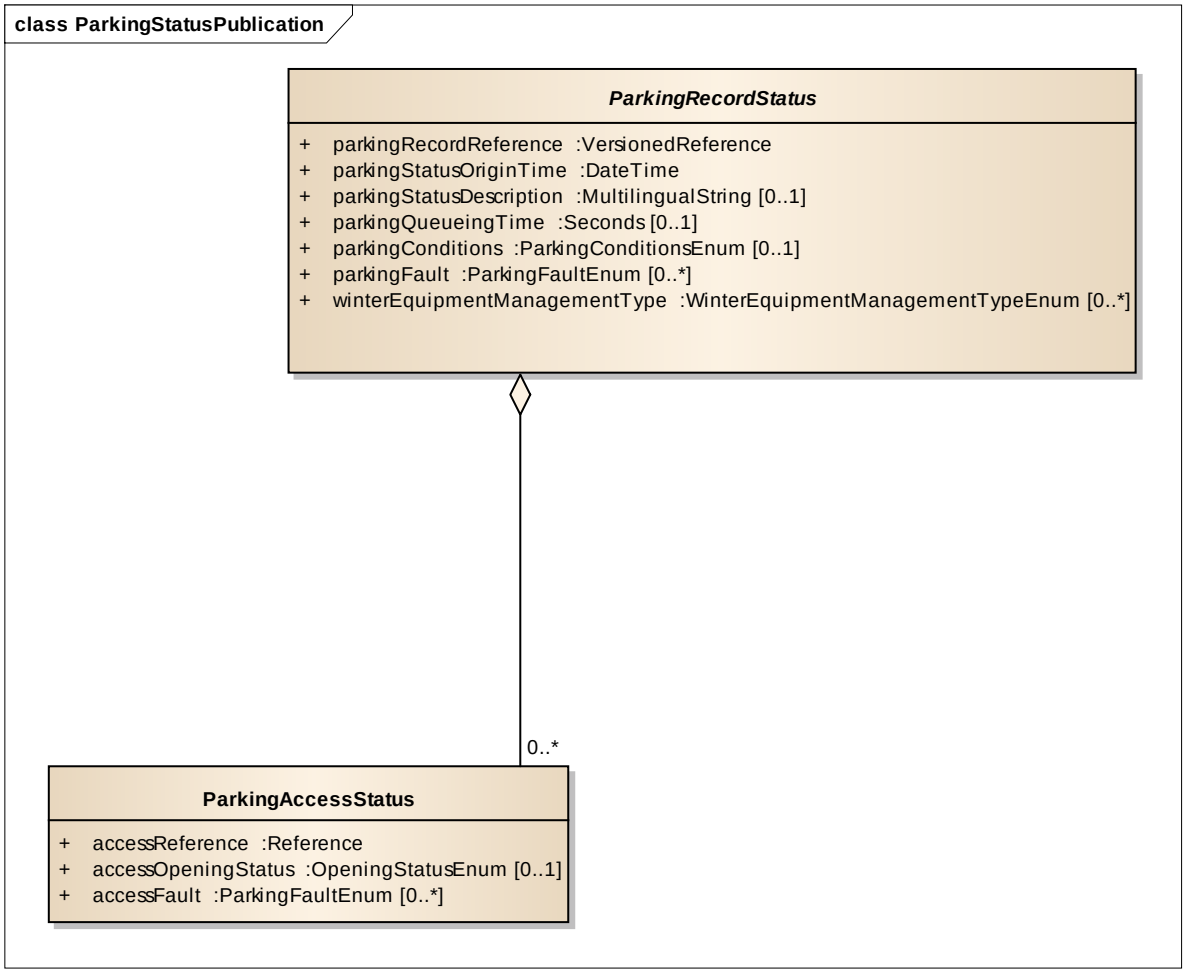
The ParkingAssignment structure (including ParkingPermit - see above) was attached to ParkingAccess.

The Point location was changed into Location to support for example Linears, too.

The OpeningTimes structure was attached and accessEquipment (incl. Enumeration) was added (some elements have been moved from AccessCharacteristicsEnum).

Some literals have been added to AccessCharacteristicsEnum.

There is a new component ParkingAccessStatus in the dynamic model to define the current opening- and fault-status:

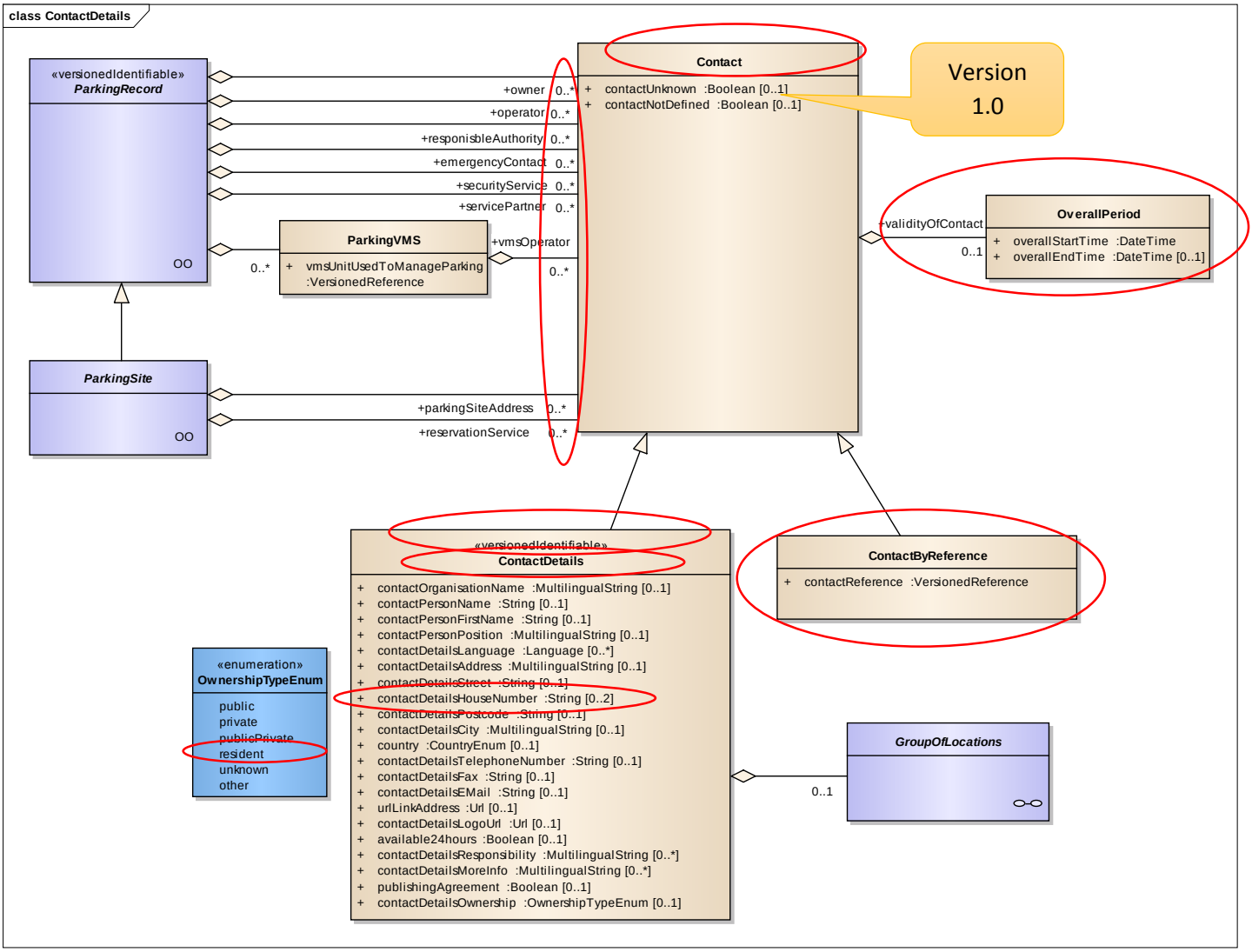


Contact

Contact details are now splitted: A new ~~abstract~~ class Contact must be specialized either by a ContactByReference or by the ContactDetails class (which is now versioned identifiable).
Note that there is no separate publication to specifiy a contact; you must include contact specifications within the specification of parking sites.

Further note that there is no distinction between a contact and an organisation; however, the first attribute was renamed to contactOrganisationName.
ContactDetailsStreetNumber was renamed to ContactDetailsHouseNumber and got a multiplicity of 0..2 to support up to two numbers (lower and upper).

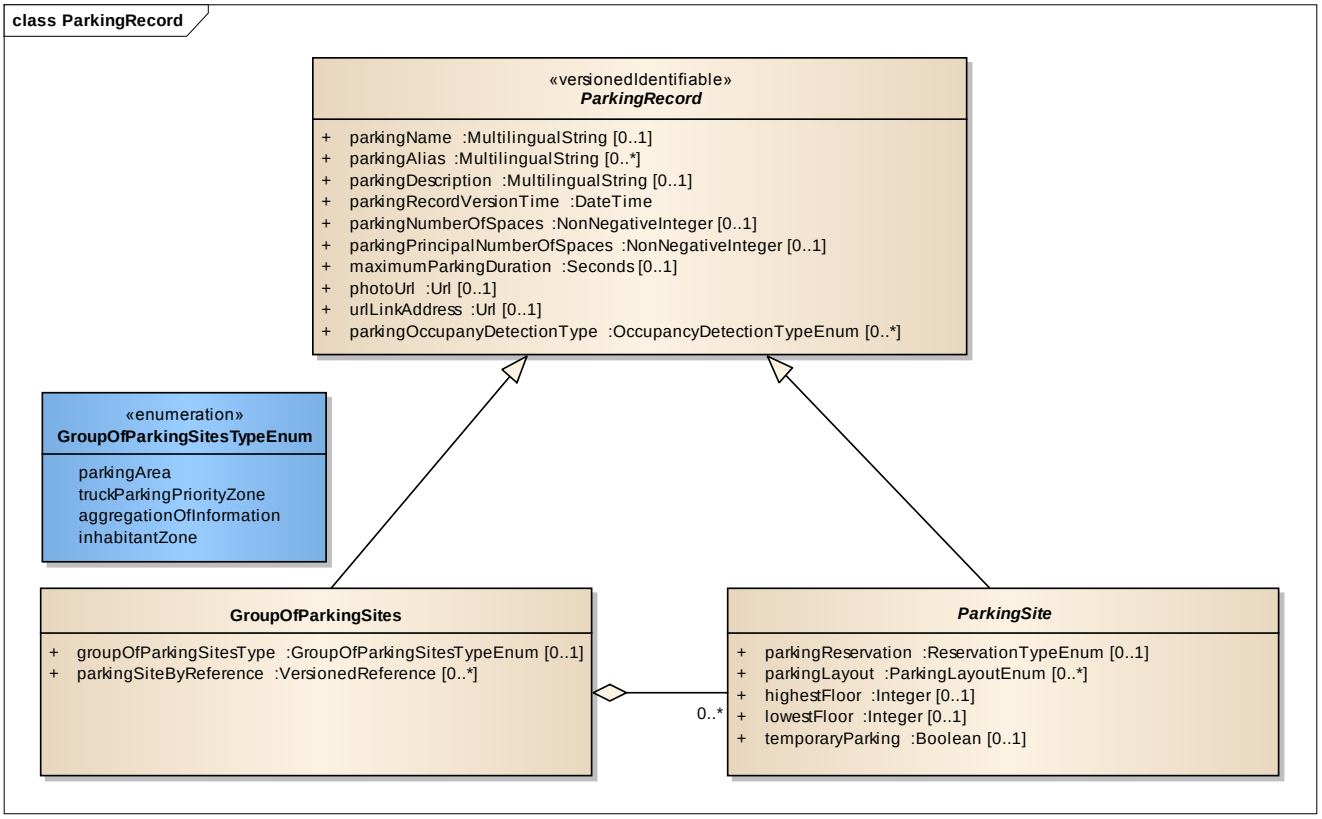
Furthermore, a contact can be supplemented with a period of validity.
Please note, that all contact roles beame a multiplicity of 0..* to support this concept with different validities (i.e. there is one operator until December 31, another one from Januar, 1st, for example).



ParkingRecord and GroupOfParkingSites (formerly called ParkingArea)

ParkingArea was renamed to GroupOfParkingSites. There is a new type enum for it (optional). Especially, it is possible, to inidicate a truckParkingPriorityZone now.

The attribute urlLinkAdress was added.



ParkingSite (formerly called ParkingFacility)

Rearrangement of classes and Specialisations, see picture.

All “facility”-fragements were renamed to “site”.

TruckParking is now a literal of ParkingScenario (see there).

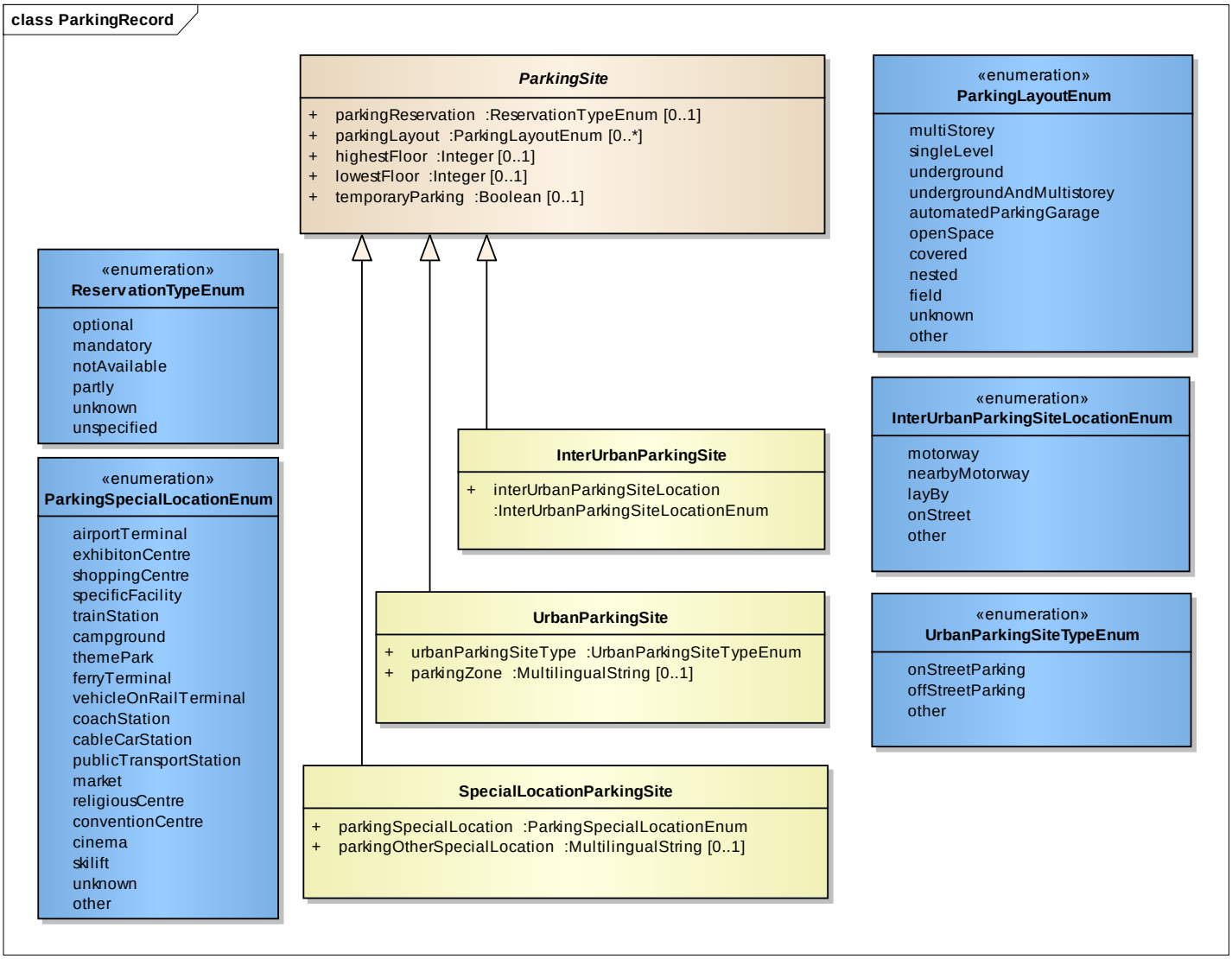
parkingLayout was moved to ParkingSite (formerly, it was part of UrbanParkingSite as well as of SpecialLocationParkingSite).

parkingVisualGuidanceSystem (formerly part of a ParkingSite) is now a literal of ScenarioEnum: autmaticGuidanceSystem (with respect to TPEK PKI008).

ParkingSpecialLocationEnum got new literals to fully support TPEG PKI014.

truckParking is now part of ParkingUsageScenarioEnum (i.e. a literal), not a seperate aggregation or specialisation any longer (see chapter Assignment for visualisation).

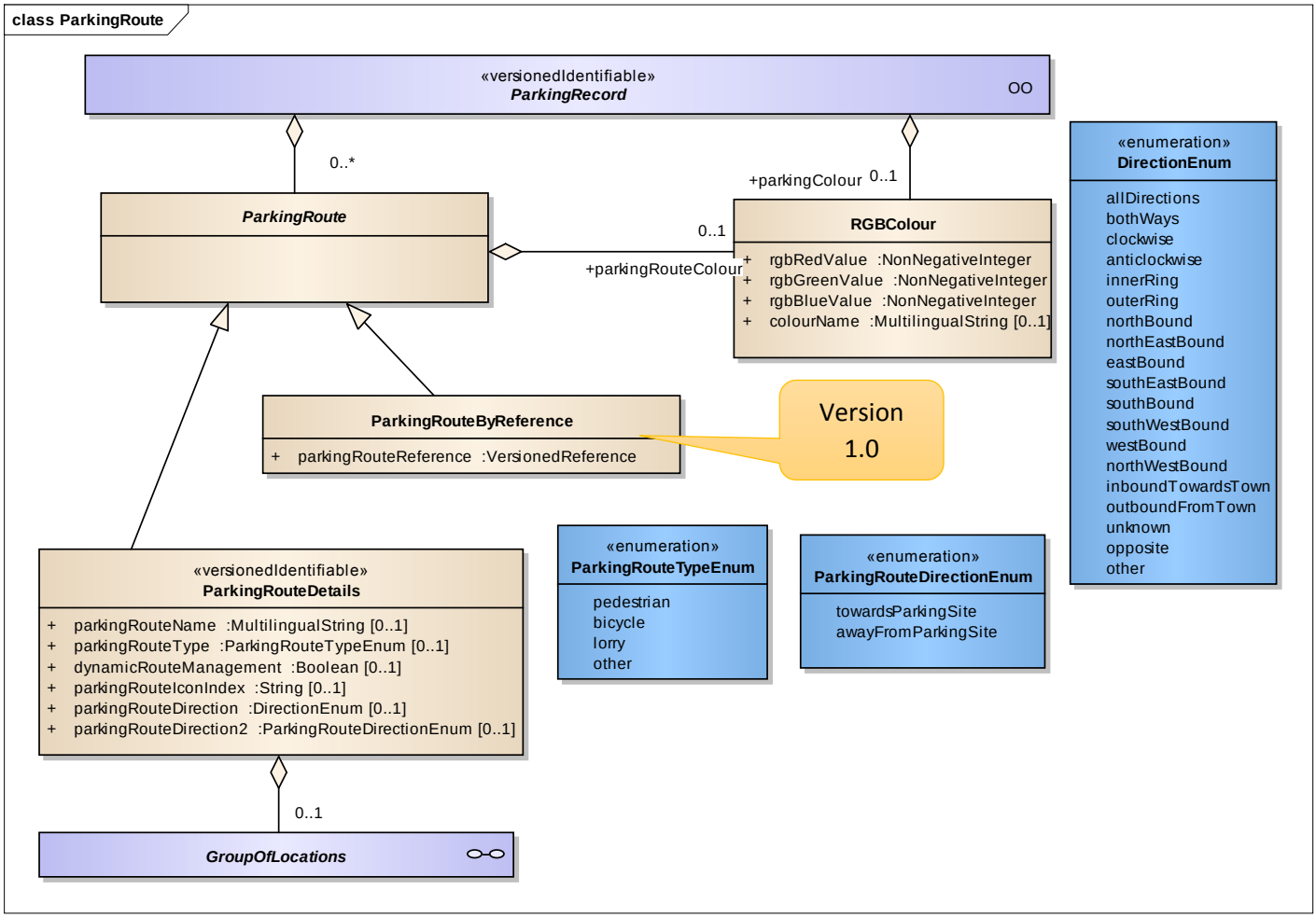
The attribute truckParkingDynamicManagement now moved to ParkingUsageScenario (only valid for the scenario truckParking) (see chapter Assignment for visualisation).



ParkingRoute (Belgium)

A ParkingRoute got some addtional elements, see picture.

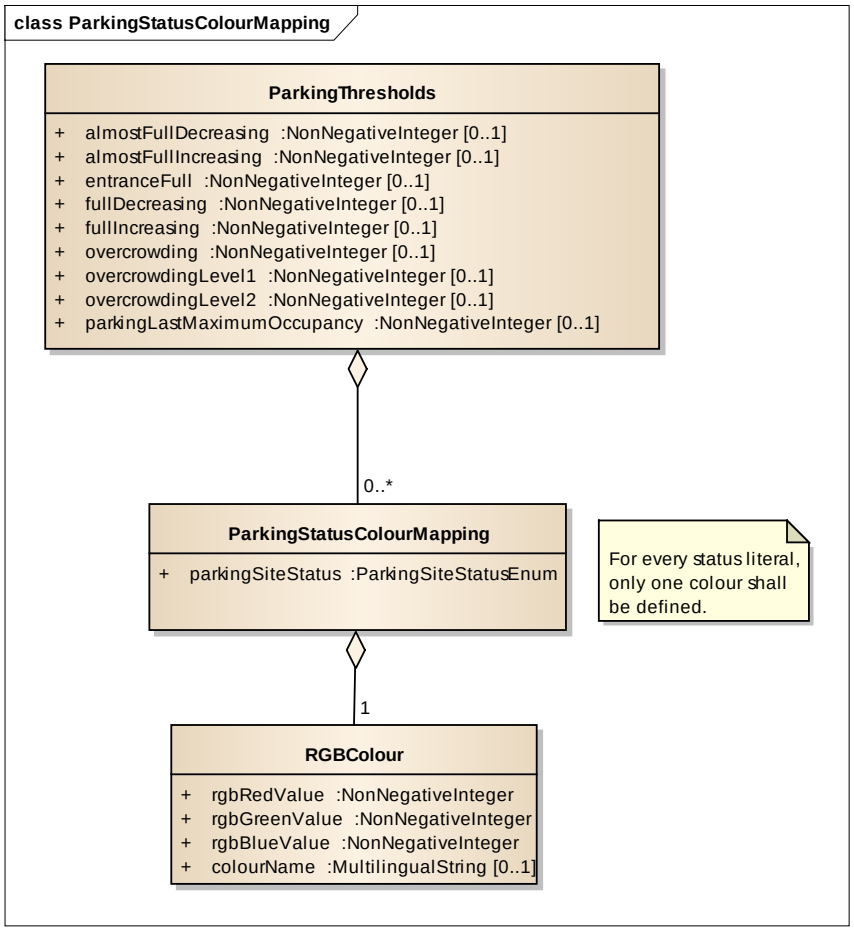
DirectionEnum is from Level A, whereas the ParkingRouteDirectionEnum offers two additional literals.



ParkingStatusColourMapping (Belgium) and Thresholds

Defines mappings for the parkingSiteStatus and a corresponding colour.

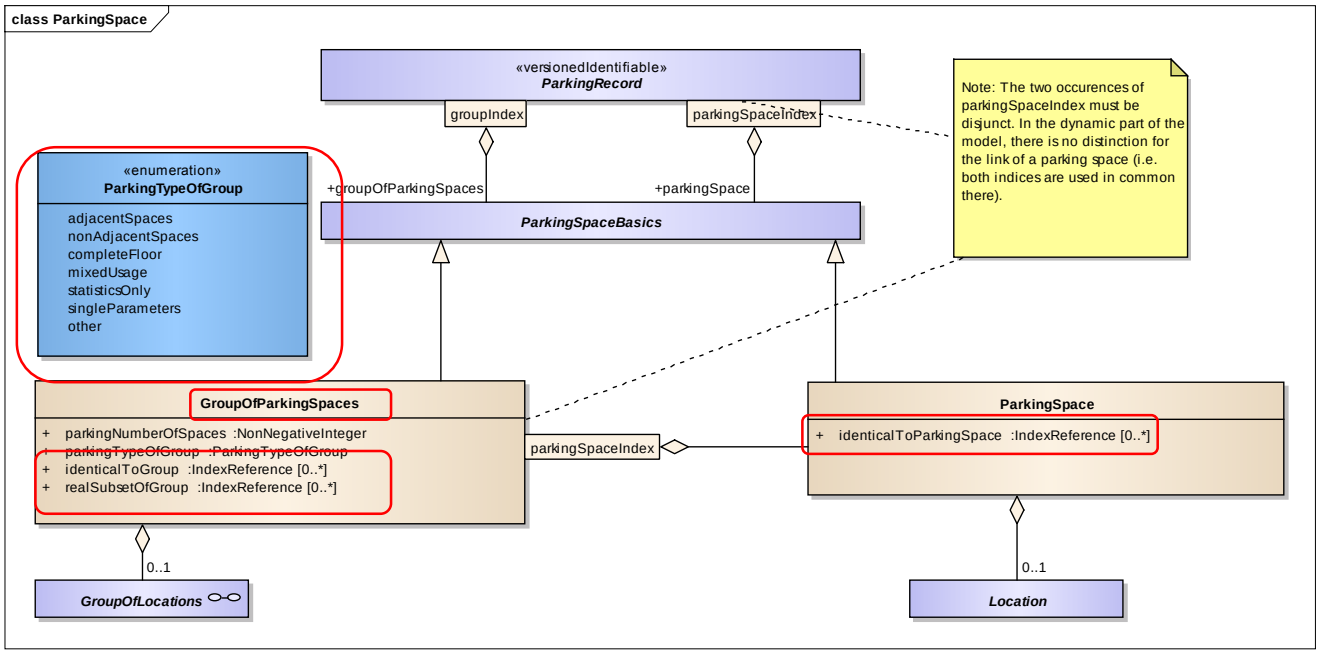
This construct is available as well in the static part of the model as well as in the dynamic part (to override this information).



The term overcrowded was replaced by overcrowding in a number of attributes.

Parking Space / GroupOfParkingSpaces

Some class names and attribute names have been improved; a new type for GroupOfParkingSpaces was introduced.



ParkingEquipmentOrServiceFacility (formerly called Infrastructure)

ParkingInfrastructure was renamed to ParkingEquipmentOrServiceFacility (packages and definitions have been adopted, as well).

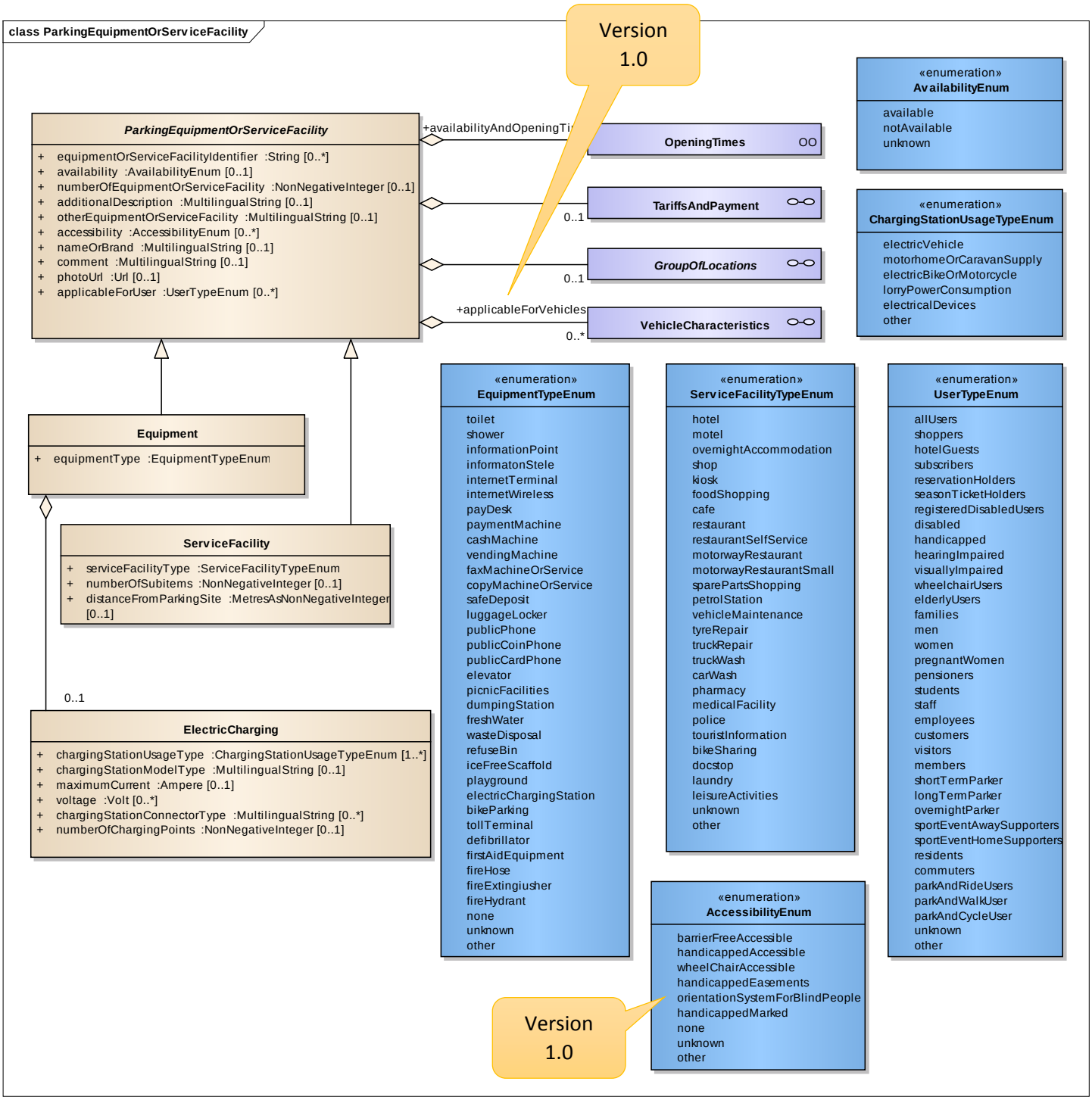
The quantityOf… atributes were renamend to numberOf….

Announcing availability (comment NL 014) is already possible by using the OpeningTimes class; a role name was added to better point out this possibility.

ParkingSecenario was removed from this package (see next chaper).

ElectricCharging is a new name for the component ElectricChargingStationAdditionalDescription; nearly all its attributes have been renamed, too.
The numberOfChargingPoints now equals the number of vehicles, which can be loaded simultaniously over all charging stations defined with the numberOf… attribute.

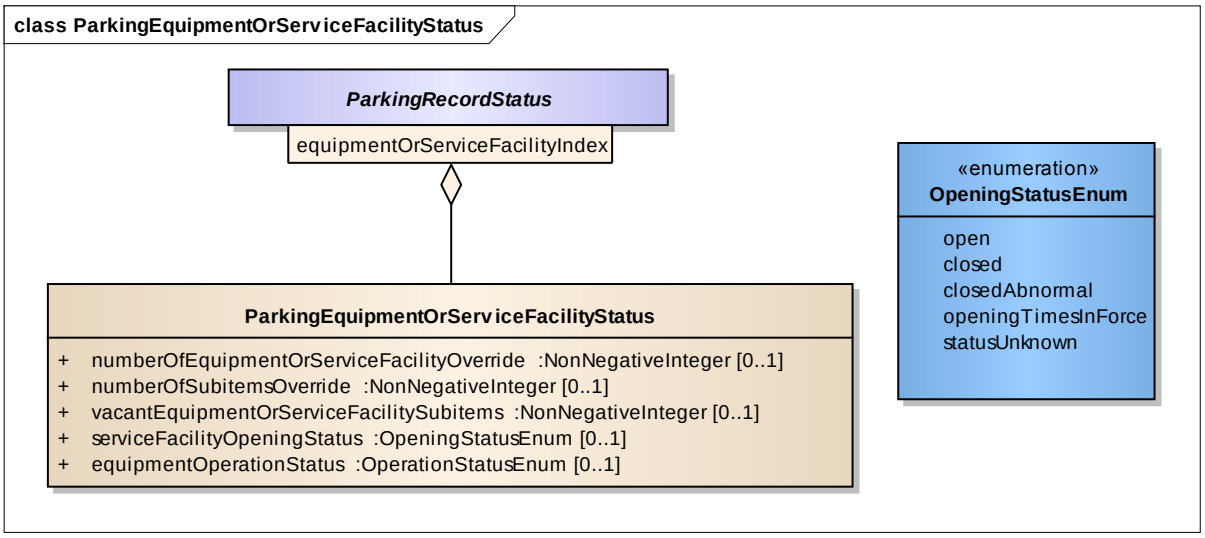
The static part now looks like this:



Added several new attributes to EquipmentTypeEnum and restaurantSelfService to ServiceFacilityTypeEnum.

A new attribute equipmentOrServiceFacilityIdentifier [0..*] was introduced on request from CEN-comment form (NL 013). The definition is: “An internal identfier for the equipment or service facility, e.g. an inventory number. This attribute has got unbounded multiplicity to support identifiers for multiple occurences of this element.”

The dynamic part looks like this:



ParkingUsageScenario

Scenarios have been moved out from the infrastructure package. A ParkingUsageScenario is now directly associated with the ParkingSite as well as with GorupOfParkingSpaces.

truckParking, serviceArea, parkAndCycle as well as parkAndWalk have been added; automaticParkingGuidance, staffGuidesToSpace and vehicleLift have been added with respect to TPEG PKI008. Furthermore, dropOff, overnight and laodingBay were added.

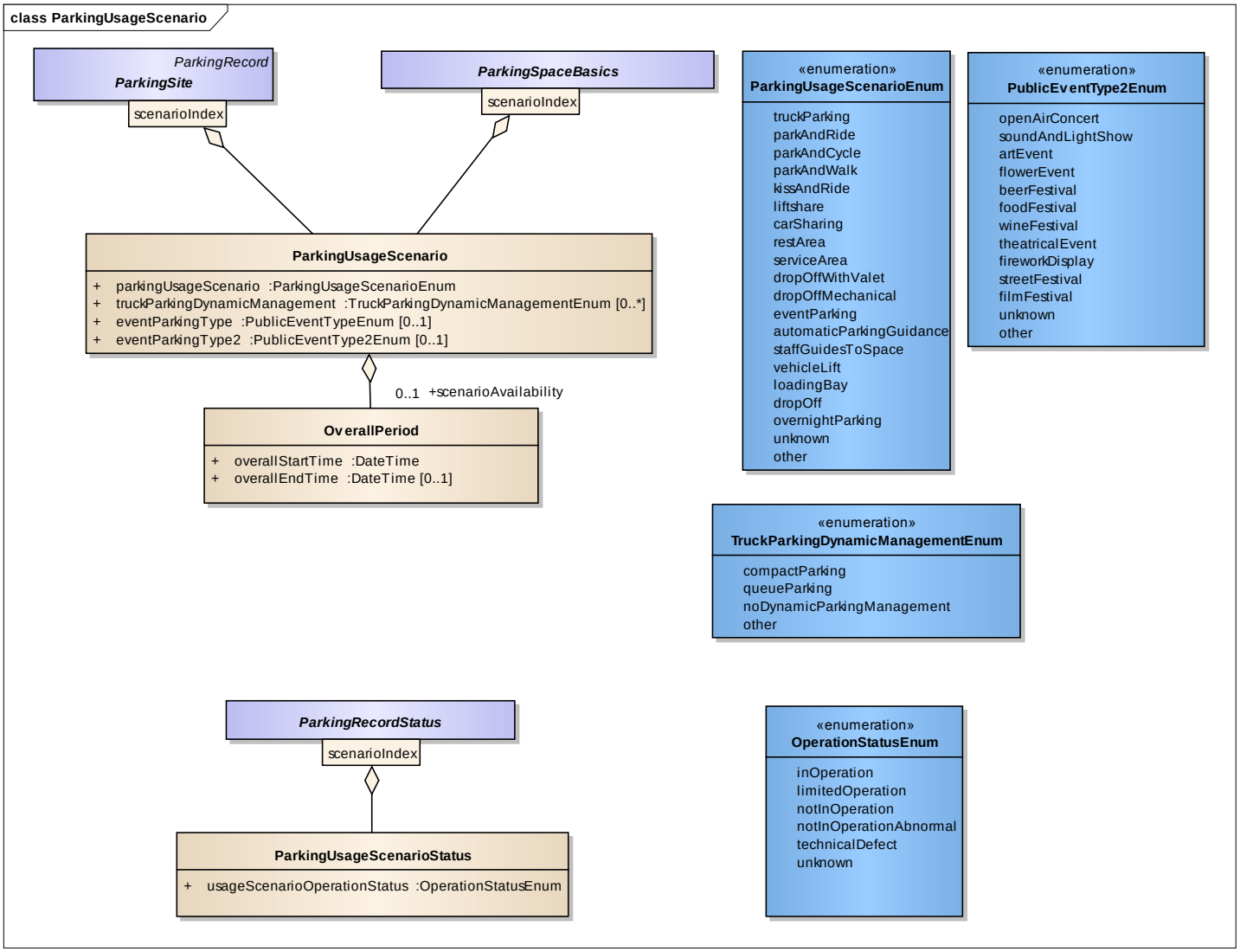
The attribute truckParkingDynamicManagement does not need to be part of ParkingSpaceBasics any longer, because its now part of the ParkingUsageScenario (i.e. you can define this more flexible now for parking spaces or groups of parking spaces).

A scenarioAvailability role has been added.

To support TPEG PKI006 “EventType”, an eventParking has been introduced as literal and enumerated attribute (splitted into a Level A and Level B enumeration).

Note: To specify the number of spaces, for instance for parkAndRide, a groupOfParkingSpaces must be specified, where parkingNumberOfSpaces can be specified. This also allows an exact specification of geo-reference.

The following picture shows both, the static as well as the dynamic part.

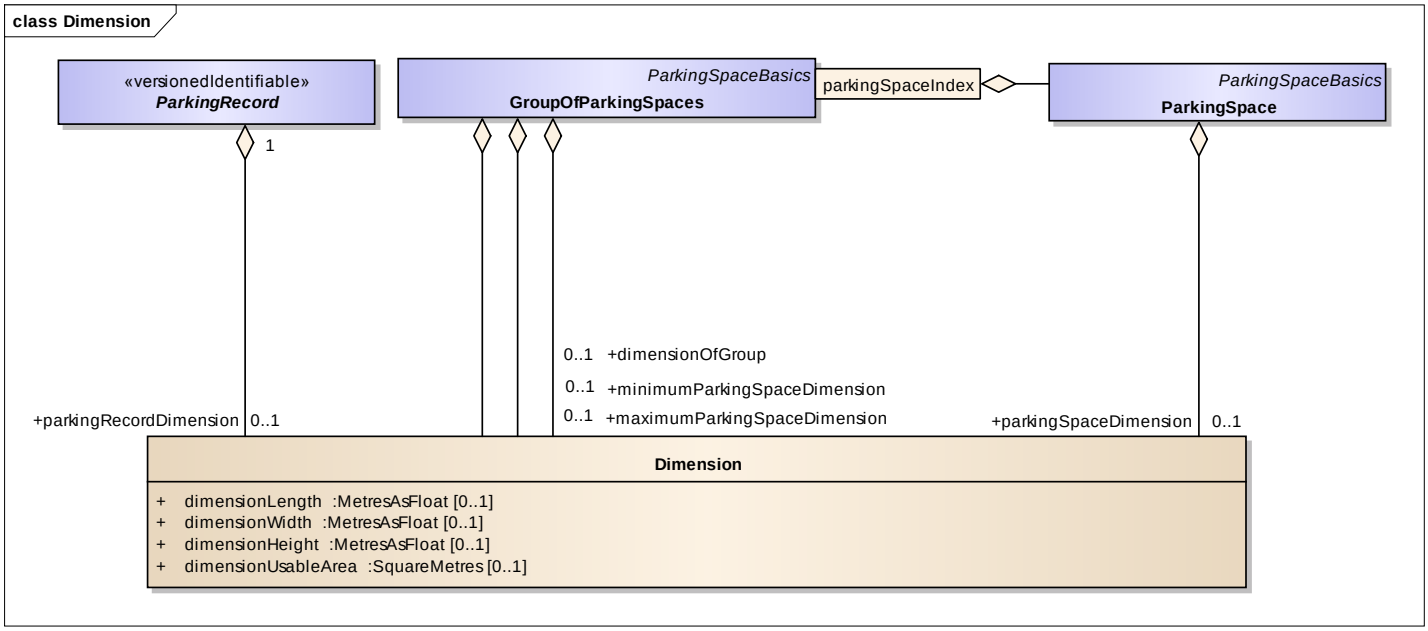


Dimensions

All attributes of the Dimensions component became the prefix “dimension”. This is to distinguish the attribute dimensionHeight (formerly ceiling) from the TPEG-LOC attribute height.

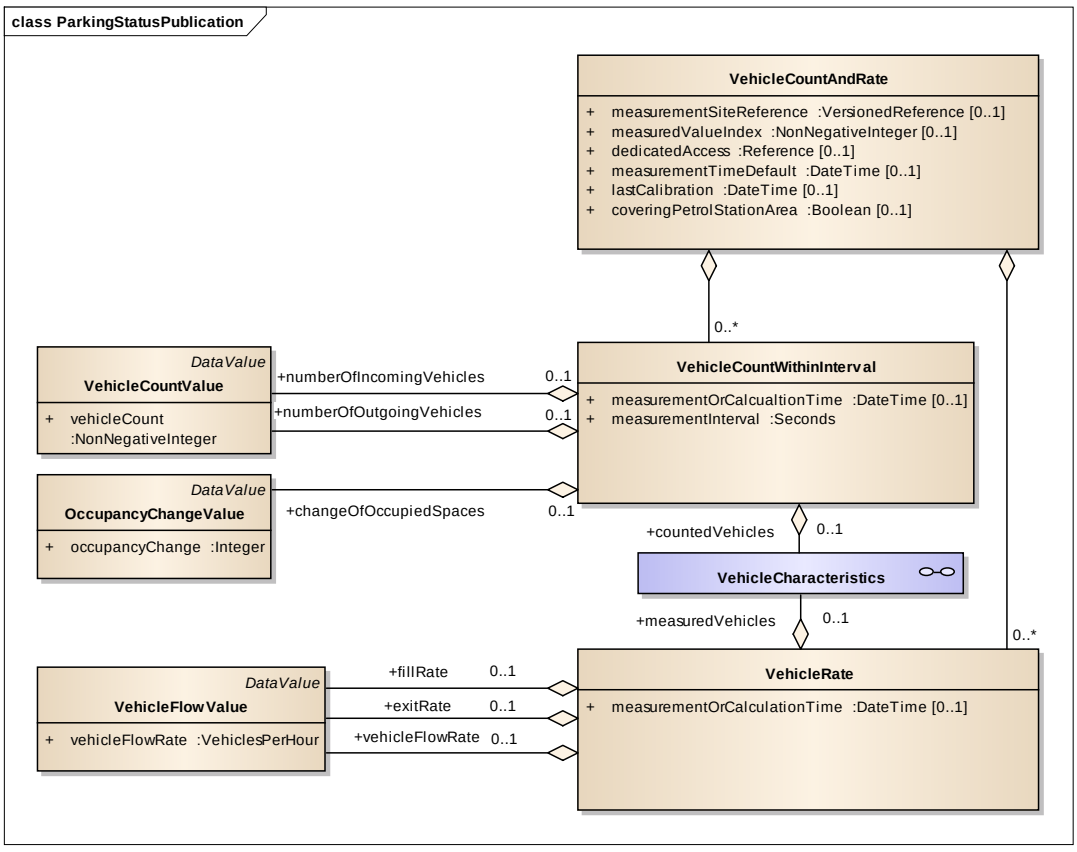
The maximumParkingSpaceDimension was added.

The following picture shows all aggregations for the class Dimension.

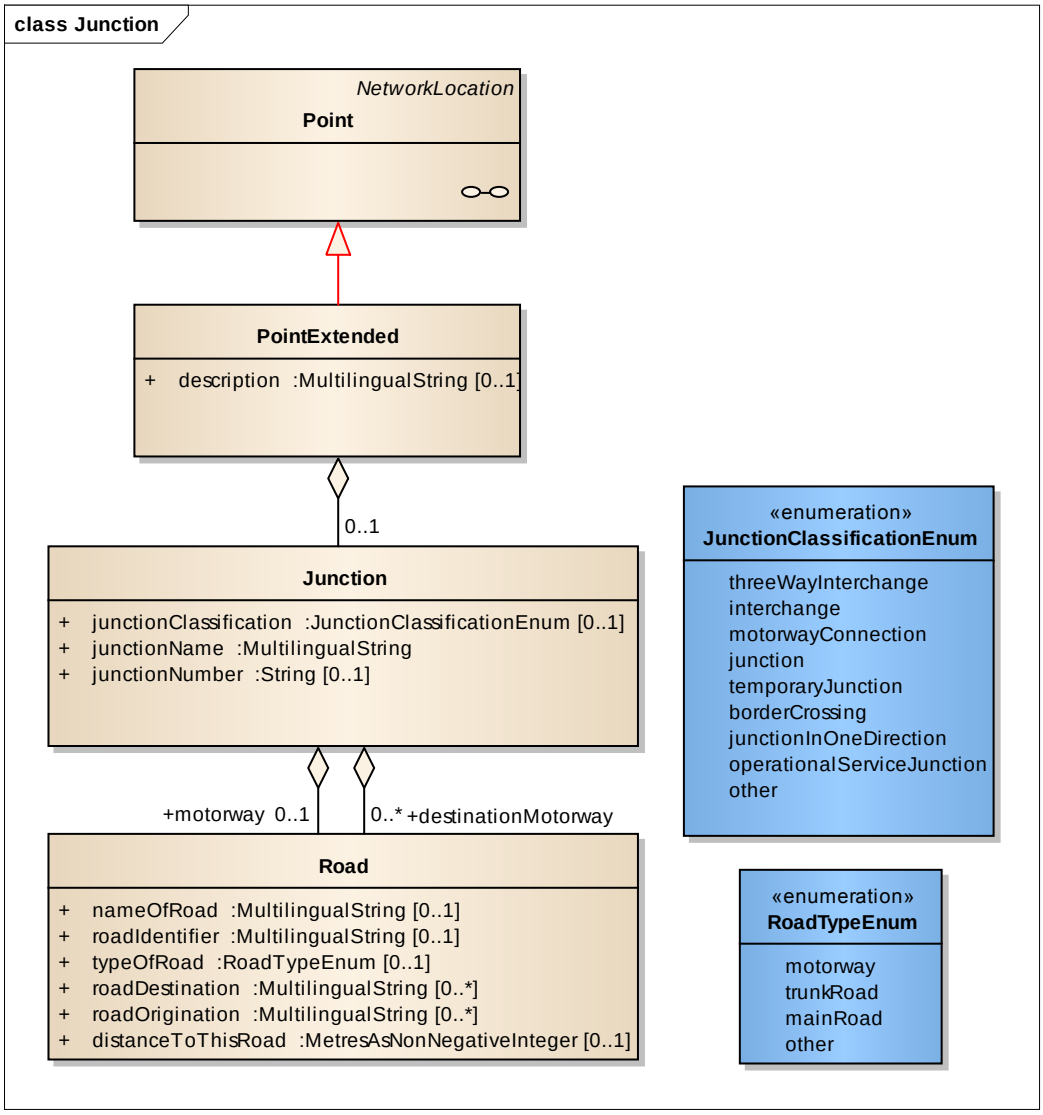


VehicleCountAndRate (dynamic)

Several changes in attribute names to improve their semantic aspect. Especially the prefix “parking” was omitted in this section.



Road



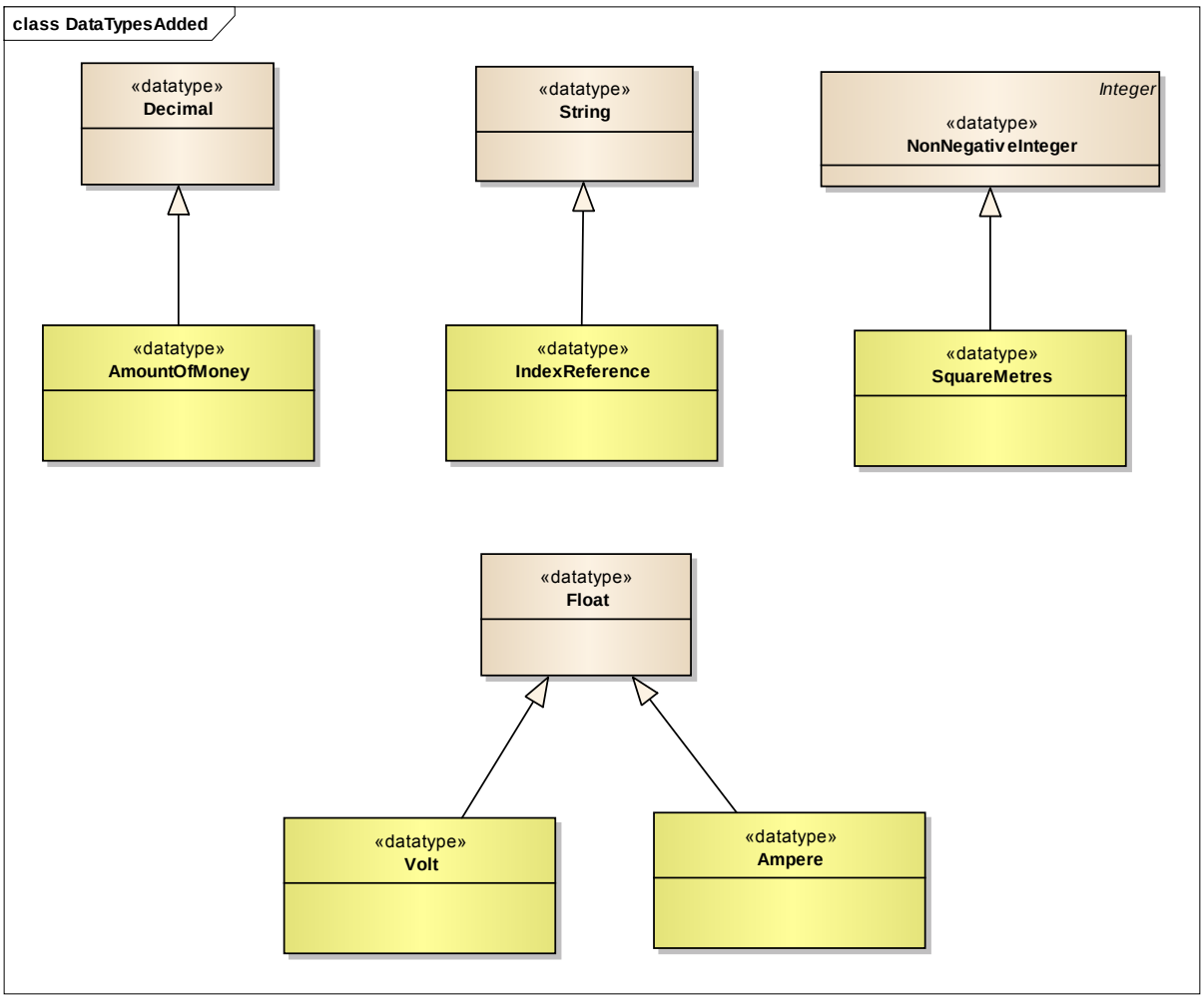
In the Road class, the name of several attributes have been changed or improved.

There is a new role for destinationMotorway, to be used with the motorway intersection junction types.

Others

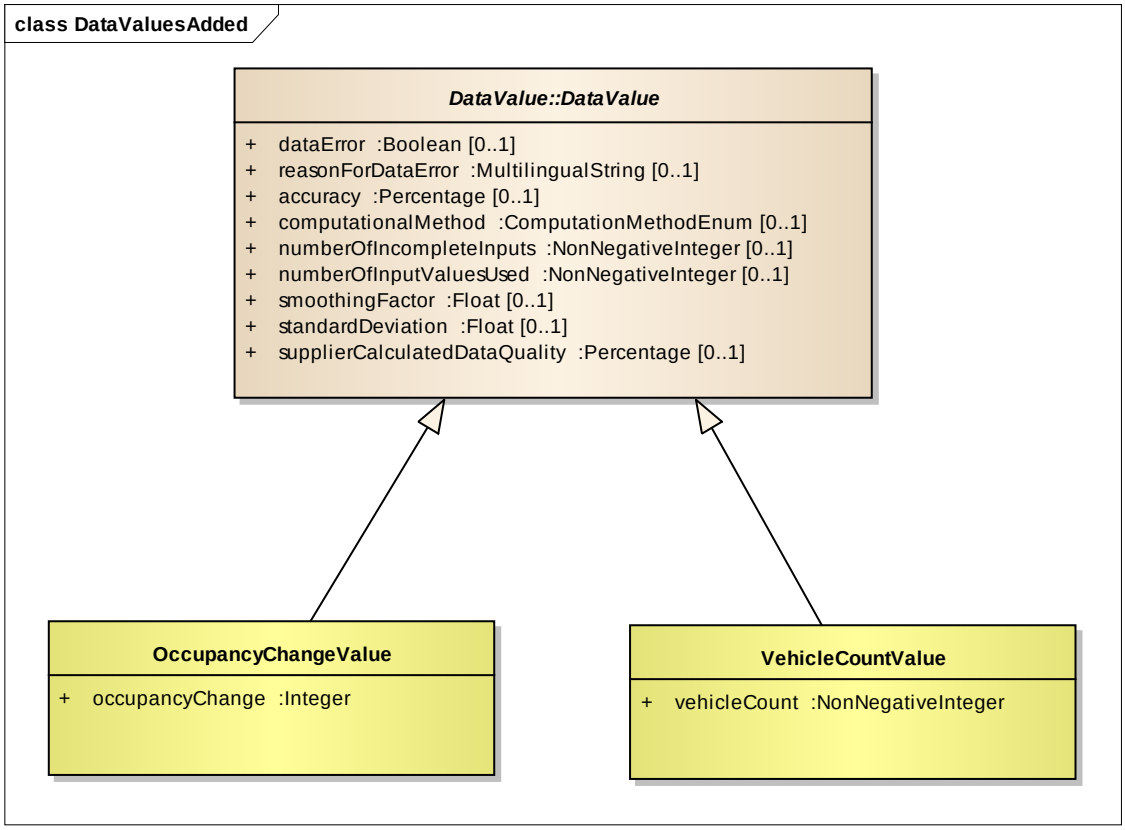
- Renamed Package “ParkingModel” into “ParkingPublications”.
- Renamed data type Money to AmountOfMoney
- The attribute equipmentOperationStatus was added to the dynamic model.
- Added dateOfCertification and certifiedSecureParking (Boolean) to ParkingStandardsAndSecurity.
- For a number of enumerations the literal other has been added.

Overview of all new data types introduced with the ParkingPublications



(Hours, Minutes and Kilometres, formaly proposed, have been removed).

Overview of all new data values introduced with the ParkingPublications



Some important definitions:

ParkingTablePublication: A publication defining one or more tables that have entries of parking sites or groups of them, located in an urban or interurban context.

ParkingTable: A collection of parking records, which can be parking sites or groups of parking sites.

ParkingRecord: A container for static parking information. Must be specialised as a parking site or as a group of parking sites.

GroupOfParkingSites: A logical composition of parking sites with aggregated properties (e.g. number of spaces). Examples: Urban parking area "West" or all truck parkings along a motorway. The included parking sites may -but must not- be specified as subcomponents.

ParkingSite: A record containing static details of a parking site. Must be specialised as an Urban- or InterUrbanParkingSite or a SpecialLocationParkingSite.

InterUrbanParkingSite: A parking site in an interurban context.

UrbanParkingSite: A parking site in an urban context.

SpecialLocationParkingSite: A parking site which is located at a special location, often associated with some building.

truckParking: The parking site is designed for lorries (other vehicles are allowed as well).