Data Dictionary

Parking Data Specification Technical Documentation

Status: Candidate

Version 4.0 Release

June 7, 2022

Steering Group Principal Contributors

Michael Drow, CAPP, International Parking Mobility Institute

João Caetano Dias, Empark

Richard Halter, Global Retail Technology Advisors, LLC

Jon Harrod Booth, Harrod Booth Consulting Limited

Hans Oortwijn*, RDW (Netherlands Vehicle Authority)

Keith Williams, Parking Matters Ltd

Nigel Williams, British Parking Association / European Parking Association

Daniel Zacarias, Substantive Insights

Working Group Contributors

Bryan Blackwell, Parker Technologies

Andrew Dawson, Indigo

Daniel Demott, Orbility

Paul Fazzino, Parkopedia

Dean Fennell-Connell, Conduent Transportation

Jakob Forswall, Flowbird

Nimesh Inamdar, Indigo

André Kuhn, Here

Maurizio Locatelli, Interparking

Robert Petersen, Easypark

Daniel Raybaut, Egis

Luke Segars, Passport Parking

JD Stuart, PayByPhone

Richard Thoma, Altancard

Jens Zier, Park Assist

Version Control

Date	Version	Status
16 August 2018	1.0	First release for consultation
29 May 2019	2.0	Release 2 – for public review
15 March 2020	2.1	Release 2.1 – final
03 June 2021	3.0	Release 3.0 – for public review
07 June 2022	4.0	Release 4.0 – final

Introduction

The Alliance for Parking Data Standards (APDS) is managing the creation of a consensus-built international parking and kerbside data specification to establish a common language for data concepts and definitions in the parking, transportation, and mobility sectors. Its intent is to facilitate seamless integration, compatibility, and communication between parking entities, the automotive sector, IT developers, services, and map and app providers, and other stakeholders. APDS has proposed these specifications to ISO as the basis of a future ISO global standard.

APDS Technical Documentation

This data dictionary identifies the definitions and characteristics of the different classes, attributes, association roles, data types and enumerations appearing in the data model. The data dictionary is specified in three parts, one for packages, one for <<D2Datatypes>> and one for <<D2Enumerations>>, each ordered alphabetically.

The first part of the data dictionary is partitioned into sub-Clauses which relate to each of the UML model packages and each sub-Clause defines the contained classes, their attributes and any roles defined for associations between the classes within that package, and specializations. Each table of a given type has the same structure.

The data dictionary is categorised into sections following the different UML model packages as mentioned above. It defines for every package the entities and elements corresponding.

Data Dictionary tables use the following columns:

1) Column Class name provides symbolic name (Upper Camel Case) given to the corresponding class.
2) Column Role name provides symbolic name (Lower Camel Case) given to the corresponding role of an association.
3) Column Attribute name provides symbolic name (Lower Camel Case) given to the corresponding attribute of a class.
4) Column Enumerated value name provides symbolic name (Lower Camel Case) given to the corresponding enumerated value.
5) Column Designation provides the corresponding name in natural language of the corresponding class, attribute, role or enumeration value.
6) Column Definition provides a comprehensive definition detailing the class, attribute, or role.
7) Column Stereotype provides a statement of the stereotype that is assigned to the class. Reference Part 1 of CEN/EN 16157 Clause 6.1 for further details.
8) Column Abstract provides a statement as to whether the class is abstract (non realisable) or concrete (realisable). Reference abstract classes defined in ISO/IEC 19505-1.
9) Column Multiplicity provides a statement of the allowed multiplicity for the attribute or role. The adopted syntax is the following: m..n where ‘m’ and ‘n’ respectively represent the minimum and the maximum value of multiplicity. For association roles, the possible value for ‘m’ are:

1) 0 in case of an optional participation of the corresponding class when instantiating the association.
2) 1 in case of a mandatory participation of the corresponding class when instantiating the association.
3) 2, 3, … in case a minimum number of participations of the corresponding class is explicitly defined when instantiating the association.

For association ends, the possible value for 'n' are:

1) In case only one class instance is at most participating at the association instantiation.
2) * in case several instances are allowed participating at the association instantiation.
3) 2, 3, ... in case a maximum number of participations of the corresponding class is explicitly defined when instantiating the association.

For attributes, the possible value for 'm' are:

1) 0 in case of an optional attribute.
2) 1 in case of a mandatory association/attribute.
3) 2, 3, … in case a minimum number of occurrences is explicitly defined.

For attributes, the possible value for 'n' are:

1) 1 in case only one attribute instance is allowed.
2) * in case several instances are allowed for this attribute without being specified.
3) 2, 3, ... in case a maximum number of occurrences is explicitly defined.

10) Column Target provides the name of the class which is at the end of the association to which the role applies.
11) Column Type provides the name of the class used to define the data type relating to the attribute of the Overview.

Changes Between Version Release 3.0 and 4.0

There are a large number of small changes throughout the data dictionary. With further questions on changes, please contact info@allianceforparkingdatastandards.org.

Structurally, the following changes have been introduced:

- New tables have been introduced for each package in the first section of the data dictionary, indicating details of specializations where these are appropriate.
- References to entities (classes, attributes, etc.) now include reference to the parent package.
- Definitions have been provided for all associations.
- Where attributes are typed as References, the target class of the Reference is provided.

Data Dictionary

A.1 Data Dictionary for "Parking"

A.1.1 "AreaLocation" package

A.1.1.1 Location of "AreaLocation" package

The location of "AreaLocation" package is:

— D2Payload/Extension/Parking/PkCommon/Location/AreaLocation

A.1.1.2 Classes of the "AreaLocation" package

Table A.1— Classes of the "AreaLocation" package

Class name	Designation	Definition	Stereotype	Abstract
AreaLocation	Area location	Location representing a geographic or geometric defined area	D2Class	no

A.1.1.3 Specializations of the "AreaLocation" package

Table A.2— Specializations of the "AreaLocation" package

Class name	Parent Class Name
AreaLocation	PkCommon.Location

A.1.1.4 Associations of the "AreaLocation" package

Table A.3— Associations of the "AreaLocation" package

Class name	Association end	Designation	Definition	Multiplicity	Target
AreaLocation	namedArea	Named area	Named area for the associated AreaLocation	0..1	PkCommon.NamedArea
	openlrAreaLocationReference	Openlr area location reference	Openlr area location reference for the associated AreaLocation	0..1	PkCommon.OpenlrAreaLocationReference
	gmlMultiPolygon	Gml multi polygon	Gml multi polygon for the associated AreaLocation	0..1	PkCommon.GmlMultiPolygon
	geoJSONPolygon	Geo j s o n polygon	Geo j s o n polygon for the associated AreaLocation	0..1	PkCommon.GeoJSONPolygon

A.1.1.5 Attributes of the "AreaLocation" package

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

A.1.2 "Classes" package

A.1.2.1 Location of "Classes" package

The location of "Classes" package is:

— D2Payload/Extension/Parking/EnergyInfrastructure/Classes

A.1.2.2 Classes of the "Classes" package

Table A.4— Classes of the "Classes" package

Class name	Designation	Definition	Stereotype	Abstract
Connector	Connector	Parameters and description of a charging connector that is available at the given electric charging point to connect vehicles	D2Class	no
ElectricChargingPoint	Electric charging point	Technical infrastructure at a specific location that facilitates electric charging of one vehicle at a time. This represents the electric charging device/station to support charging of electric vehicles.	D2Class	no
RefillPoint	Refill point	Technical infrastructure at a specific location that facilitates an energy refilling process being connected to max. one vehicle at a time. This can include equipment to support Electric, gas/petrol, diesel, and other fuel type refill stations.	D2Class	yes

A.1.2.3 Specializations of the "Classes" package

Table A.5— Specializations of the "Classes" package

Class name	Parent Class Name
ElectricChargingPoint	EnergyInfrastructure.RefillPoint

A.1.2.4 Associations of the "Classes" package

Table A.6— Associations of the "Classes" package

Class name	Association end	Designation	Definition	Multiplicity	Target
ElectricChargingPoint	connector	Connector	Connector for the associated ElectricChargingPoint	1..*	EnergyInfrastructure.Connector

A.1.2.5 Attributes of the "Classes" package

Table A.7— Attributes of the "Classes" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Connector	chargingMode	Charging mode	Available charging modes	0..1	EnergyInfrastructure.ChargingModeEnum
	connectorFormat	Connector format	Information on the connector format used to connect the charging station to the electric vehicle.	0..1	EnergyInfrastructure.ConnectorFormatTypeEnum
	connectorType	Connector type	Specification of the connector, i.e. the charging interface type that connects the charging station to the electric vehicle.	1..1	EnergyInfrastructure.ConnectorTypeEnum
	countryOfDomesticSocket	Country of domestic socket	Countries for which the domestic socket is applicable. Only needed if explicit type of a domestic socket is not specified.	0..*	PkCommon.CountryCode
	maximumCurrent	Maximum current	Maximum current in Ampere at the specified connector	0..1	EnergyInfrastructure.Ampere
	maxPowerAtSocket	Max power at socket	Maximum power in Watts at the specified connector	1..1	EnergyInfrastructure.Watt
	otherConnector	Other connector	Some other connector / charging interface	0..1	PkCommon.String
	voltage	Voltage	Maximum voltage available at the specified connector of the electric charging equipment / station.	0..1	EnergyInfrastructure.Volt
ElectricChargingPoint	availableChargingPower	Available charging power	Maximum charging power in Watts available at the specified electric charging point.	0..*	EnergyInfrastructure.Watt

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	availableVoltage	Available voltage	Maximum voltage available at the electric charging point	0..*	EnergyInfrastructure.Volt
	externalIdentifier	External identifier	A unique string to identify the charging point.	0..1	PkCommon.String
	usageType	Usage type	Usage type of the electric charging point.	0..*	EnergyInfrastructure.ChargingPointUsageTypeEnum
	vehicleToGridCommunicationType	Vehicle to grid communication type	Type of vehicle to grid communication used.	0..*	EnergyInfrastructure.VehicleToGridCommunicationTypeEnum
RefillPoint	authenticationAndIdentificationMethods	Authentication and identification methods	Information on what methods of identification and/or authentication are accepted	0..*	EnergyInfrastructure.AuthenticationAndIdentificationEnum
	currencyOverride	Currency override	Information on which currency/currencies can be used to pay	0..*	PkCommon.CurrencyCode
	deliverySubstance	Delivery substance	Multilingual text string providing the name of the substance being delivered.	1..1	PkCommon.MultilingualString
	deliveryUnit	Delivery unit	Measurement unit that is used for delivery and accounting the energy provided at this refill point	0..1	EnergyInfrastructure.DeliveryUnitEnum
	maximumDeliveryAmount	Maximum delivery amount	Maximum delivery amount based on the delivery unit defined	0..1	EnergyInfrastructure.Units
	minimumDeliveryAmount	Minimum delivery amount	Minimum delivery amount based on the delivery unit defined	0..1	EnergyInfrastructure.Units
	modelType	Model type	A description of the refill point model type.	0..1	PkCommon.MultilingualString

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	refillPointIndex	Refill point index	An index to link this element between the static and dynamic publications.	1..1	PkCommon.Integer
	reservability	Reservability	Information regarding options for reservation of a time frame to access the refill point	0..1	EnergyInfrastructure.ReservationTypeEnum
	serviceType	Service type	Information on different service types for the fuelling/charging and payment process.	0..*	EnergyInfrastructure.ServiceTypeEnum
	userInterfaceLanguage	User interface language	Languages, in which a user interface is available, if any	0..*	PkCommon.LanguageCode

A.1.3 "CodeLists" package

A.1.3.1 Location of "CodeLists" package

The location of "CodeLists" package is:

— D2Payload/Extension/Parking/PkCommon/CodeLists

A.1.3.2 Classes of the "CodeLists" package

Table A.8— Classes of the "CodeLists" package

Class name	Designation	Definition	Stereotype	Abstract
ReferencedCodeListEntry	Referenced code list entry	Class providing references to specific entry in a pre-defined user-defined code list	D2Identifiable	no
UserDefinedCodeList	User defined code list	Class providing structure to support a user-defined code list.	D2VersionedIdentifiable	no
UserDefinedCodeListEntry	User defined code list entry	Class providing structure to support a specific entry within a user-defined code list.	D2Identifiable	no

A.1.3.3 Specializations of the "CodeLists" package

There are no defined specializations in the "CodeLists" package.

A.1.3.4 Associations of the "CodeLists" package

Table A.9— Associations of the "CodeLists" package

Class name	Association end	Designation	Definition	Multiplicity	Target
UserDefinedCodeList	userDefinedCodeListEntry	User defined code list entry	User defined code list entry for the associated UserDefinedCodeList	1..*	PkCommon.UserDefinedCodeListEntry

A.1.3.5 Attributes of the "CodeLists" package

Table A.10— Attributes of the "CodeLists" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
ReferencedCodeListEntry	codeListEntryId	Code list entry id	reference to a specific entry in a specific user-defined code list	0..1	PkCommon.Reference (pkcmn:UserDefinedCodeListEntry)
	codeListId	Code list id	reference to a specific user-defined code list	0..1	PkCommon.VersionedReference (pkcmn:UserDefinedCodeList)
	entryDefinedValue	Entry defined value	free-text defined text (name) for the code list entry being referenced	1..1	PkCommon.String
UserDefinedCodeList	creator	Creator	creator/originator of the user defined code list	1..1	PkCommon.VersionedReference (pkcmn:Organisation)
	includeNilReasonType	Include nil reason type	Boolean: [TRUE] indicates the NilReasonType list shall be included in this user defined code list.	1..1	PkCommon.Boolean

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	locator	Locator	Specifies a Universal resource locator (URL) at which the user defined code list can be found.	1..1	PkCommon.Url
UserDefinedCodeListEntry	definedValue	Defined value	free-text defined text (name) for the code list entry being referenced	1..1	PkCommon.String
	entryDescription	Entry description	free-text description (explanation) for the code list entry being referenced	0..1	PkCommon.String
	entryIndex	Entry index	index number (integer) for the code list entry being referenced	1..1	PkCommon.Integer

A.1.4 "CommonClasses" package

A.1.4.1 Location of "CommonClasses" package

The location of "CommonClasses" package is:

— D2Payload/Extension/Parking/PkCommon/CommonClasses

A.1.4.2 Classes of the "CommonClasses" package

Table A.11— Classes of the "CommonClasses" package

Class name	Designation	Definition	Stereotype	Abstract
AmountInCurrency	Amount in currency	A class supporting the definition of a unit of currency in a defined currency.	D2Class	no
AreaDimension	Area dimension	A class defining information concerning an area measurement with unit.	D2Class	no
LinearDimension	Linear dimension	A class defining information concerning a linear measure (distance) with unit.	D2Class	no
RecordType	Record type	A class defining information relating to a specific record.	D2Class	no

Class name	Designation	Definition	Stereotype	Abstract
VehicleAncillaryIdentification	Vehicle ancillary identification	Information relating to identification of a specific vehicle	D2Class	no
WeightDimension	Weight dimension	A class defining information concerning a weight quantity with unit.	D2Class	no

A.1.4.3 Specializations of the "CommonClasses" package

There are no defined specializations in the "CommonClasses" package.

A.1.4.4 Associations of the "CommonClasses" package

There are no defined associations in the "CommonClasses" package.

A.1.4.5 Attributes of the "CommonClasses" package

Table A.12— Attributes of the "CommonClasses" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
AmountInCurrency	type	Type	Code for the specified currency as defined in ISO 4217.	1..1	PkCommon.CurrencyCode
	value	Value	The amount of currency specified in the given currency code type.	1..1	PkCommon.AmountOfMoney
AreaDimension	measure	Measure	Quantity in the defined unit of measure.	1..1	PkCommon.Float
	unitOfMeasure	Unit of measure	Defines the unit of measure to be used.	1..1	PkCommon.UnitOfMeasureArea
LinearDimension	measure	Measure	Quantity in the defined unit of measure.	1..1	PkCommon.Float
	unitOfMeasure	Unit of measure	Defines the unit of measure to be used.	1..1	PkCommon.UnitOfMeasureDistanceEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
RecordType	creationTime	Creation time	Documents the data and time of record creation.	0..1	PkCommon.DateTime
	creationUser	Creation user	Documents the author who created the initial record. Typically the email of specific person.	0..1	PkCommon.String
	creator	Creator	Name or identifier for the creator of the place facility record (organisation)	0..1	PkCommon.VersionedReference (pkcmn:Organisation)
	creatorEmail	Creator email	Email address to contact for the creator of the place facility record.	0..1	PkCommon.String
	lastUpdate	Last update	Documents the date and time of most recent update.	1..1	PkCommon.DateTime
	lastUpdateUser	Last update user	Documents the author of the most recent update. Typically the email of specific person.	0..1	PkCommon.String
VehicleAncillaryIdentification	colour	Colour	The predominant colour of the vehicle.	0..1	PkCommon.String
	country	Country	The current country of registration of the vehicle.	1..1	PkCommon.CountryCode
	description	Description	Free-text description of other distinguishing features of the vehicle	0..1	PkCommon.String
	make	Make	The branded manufacturer's name for the vehicle (e.g. Ford, Audi, BMW, Mazda)	0..1	PkCommon.String
	model	Model	The model name for the vehicle type (e.g. Ford "Mondeo", Citroen "C-Zero")	0..1	PkCommon.String
	stateProvince	State province	State, province or other administrative subdivision where a nation state	0..1	PkCommon.String

Class name	Attribute name	Designation	Definition	Multiplicity	Type
			permits registration of vehicles on a lower administrative level basis.		
WeightDimension	measure	Measure	Quantity in the defined unit of measure.	1..1	PkCommon.Float
	unitOfMeasure	Unit of measure	Defines the unit of measure to be used	1..1	PkCommon.UnitOfMeasureWeightEnum

A.1.5 CommonComponents" package

A.1.5.1 Location of "CommonComponents" package

The location of "CommonComponents" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy/CommonComponents

A.1.5.2 Classes of the "CommonComponents" package

Table A.13— Classes of the "CommonComponents" package

Class name	Designation	Definition	Stereotype	Abstract
Characteristics	Characteristics	A class defining information concerning characteristics relating to a parking facility.	D2Class	no
CommonComponents	Common components	A class defining information concerning multiple features relating to place hierarchy elements.	D2Class	no
ImageAlbum	Image album	A class defining information relating to images for a facility or place.	D2Class	no
Marketing	Marketing	Universal resource locator (URL) that points towards a web site carrying marketing material supplied.	D2Class	no
OperatingRestriction	Operating restriction	A class defining operating restrictions. Limitations of use or access not defined in a Right Specification associated to a place	D2Class	no

Class name	Designation	Definition	Stereotype	Abstract
RgbColour	Rgb colour	An RGB colour described by values for red, green and blue (0..255) as well as an optional name.	D2Class	no
SafetyStandardClassification	Safety standard classification	Use this class to classification type/level for security schemes for this place	D2Class	no

A.1.5.3 Specializations of the "CommonComponents" package

There are no defined specializations in the "CommonComponents" package.

A.1.5.4 Associations of the "CommonComponents" package

Table A.14— Associations of the "CommonComponents" package

Class name	Association end	Designation	Definition	Multiplicity	Target
CommonComponents	times	Times	Times for the associated CommonComponents	0..1	PkCommon.Times
	paymentMethod	Payment method	Payment method for the associated CommonComponents	0..*	Place.PaymentMethod
	safetyStandardClassification	Safety standard classification	Safety standard classification for the associated CommonComponents	0..*	Place.SafetyStandardClassification
	rgbColour	Rgb colour	Rgb colour for the associated CommonComponents	0..*	Place.RgbColour
	operatingRestriction	Operating restriction	Operating restriction for the associated CommonComponents	0..*	Place.OperatingRestriction
	marketing	Marketing	Marketing for the associated CommonComponents	0..1	Place.Marketing
	characteristics	Characteristics	Characteristics for the associated CommonComponents	0..*	Place.Characteristics

Class name	Association end	Designation	Definition	Multiplicity	Target
Marketing	imageAlbum	Image album	Image album for the associated Marketing	0..*	Place.ImageAlbum

A.1.5.5 Attributes of the "CommonComponents" package

Table A.15— Attributes of the "CommonComponents" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Characteristics	accessControlled	Access controlled	Indicates facility has physical access control (e.g. barriers, gates) [TRUE] or no access control [FALSE]	0..1	PkCommon.Boolean
	coveredType	Covered type	Is location covered or not? Covered can include roof, canopy and other structures that protect the place from the environment	0..1	Place.CoveredEnum
	disabledAccess	Disabled access	If [TRUE], there is provision of facilities for disabled access available.	0..*	PkCommon.Boolean
	openToPublic	Open to public	identifies if this facility is accessible to public use [TRUE] or private use only [FALSE].	0..1	PkCommon.Boolean
	activationMode	Activation mode	defines the mode of parking operation in use. This is a defined list of operating modes.	0..*	PkCommon.ParkingActivationModeEnum
	robotic	Robotic	Indicates existence of a robotic parking system - a parking structure where customer leaves vehicle at drop off area and robots move the vehicle to parking location in structure. Default or absence of value indicates [FALSE] = no robotic parking system.	0..1	PkCommon.Boolean
	spacesNonDedicated	Spaces non dedicated	Number of parking spaces that are not assigned for a particular purpose. This is a	0..1	PkCommon.NonNegativeInteger

Class name	Attribute name	Designation	Definition	Multiplicity	Type
			simple method to share space information when not providing more detail via the Occupancy domain.		
	spacesTotal	Spaces total	Total number of parking spaces. This is a simple method to share space information when not providing more detail via the Occupancy domain.	0..1	PkCommon.NonNegativeInteger
	staffed	Staffed	Indicates facility has on-site staff [TRUE] or no on-site staff [FALSE] for the majority, but not all, of the open valid operating times.	0..1	Place.StaffEnum
	structureGrade	Structure grade	Defines the place structure with respect to ground level. Is the facility above or below ground?	0..1	Place.StructureGradeEnum
	structureType	Structure type	Defines the type of place structure.	1..1	Place.StructureTypeEnum
ImageAlbum	caption	Caption	Free-text string providing user context to the logo or picture	0..*	PkCommon.MultilingualString
	logoImage	Logo image	Universal resource locator (URL) that points towards a web site containing logo(s) that the operator wishes to associate with this facility (e.g. their logo, schemes [ParkMark])	0..*	PkCommon.Url
	photo	Photo	Specifies a Universal resource locator (URL) at which a photo of the object in concern can be found.	0..1	PkCommon.Url
Marketing	webURL	Web u r l	Universal Resource Locator (URL) linking to marketing material.	0..*	PkCommon.Url
OperatingRestriction	context	Context	Free-text definition of the nature of operating restrictions.	0..1	PkCommon.MultilingualString

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	type	Type	Defines the type of operating restriction applicable in this case.	1..1	PkCommon.OperatingRestrictionEnum
RgbColour	colourName	Colour name	The name of the colour.	0..1	PkCommon.MultilingualString
	blue	Blue	The blue value of the RGB colour (0..255).	1..1	PkCommon.NonNegativeInteger
	green	Green	The green value of the RGB colour (0..255).	1..1	PkCommon.NonNegativeInteger
	red	Red	The red value of the RGB colour (0..255).	1..1	PkCommon.NonNegativeInteger
SafetyStandardClassification	securityFeature	Security feature	security feature identified for this place in a user defined list	0..1	PkCommon.ReferencedCodeListEntry
	securityLevel	Security level	security level identified for this place in a defined scheme	0..1	PkCommon.ReferencedCodeListEntry

A.1.6 "Contacts" package

A.1.6.1 Location of "Contacts" package

The location of "Contacts" package is:

— D2Payload/Extension/Parking/PkCommon/Contacts

A.1.6.2 Classes of the "Contacts" package

Table A.16— Classes of the "Contacts" package

Class name	Designation	Definition	Stereotype	Abstract
Address	Address	structured information that allows the unambiguous determination of an object for purposes of identification and location [SOURCE: ISO 19160 1:2015]	D2Class	no
AddressLine	Address line	A class defining information concerning one line of a postal address.	D2Class	no
Contact	Contact	Address and contact information about some person, service or the site, provided in detail or via reference.	D2Class	no
ContactByReference	Contact by reference	Contact information that is addressed via a reference.	D2Class	no
ContactDetails	Contact details	Details for some person, service or the parking site itself, especially address information.	D2VersionedIdentifiable	no
ContactPoint	Contact point	Class providing context for one point of contact.	D2VersionedIdentifiable	no
EMailCommonData	E mail common data	A class defining information concerning an email point of contact.	D2Class	no
ExternalIdentifier	External identifier	Class containing information on an external identifier defined for an organisation supporting delivery	D2Class	no
OperatorDefinedPlace	Operator defined place	Class providing an operator specified name or identifier for a place hierarchy element - this may be distinct from the name for the HierarchyElement supplied by the data supplier.	D2VersionedIdentifiable	no
Organisation	Organisation	A legally defined body (e.g. company, business, government entity). Can be for or not for profit, government, etc	D2VersionedIdentifiable	no
ResponsibilityRoleAssignment	Responsibility role assignment	Assignment of one or more roles to ORGANISATION regarding responsibility it will have regarding identified Place (e.g. owner, operators)	D2Class	no
TelephoneContact	Telephone contact	Class defining information relating to specific telephone point of contact.	D2Class	no

A.1.6.3 Specializations of the "Contacts" package

Table A.17— Specializations of the "Contacts" package

Class name	Parent Class Name
ContactByReference	PkCommon.Contact
ContactPoint	PkCommon.Contact

A.1.6.4 Associations of the "Contacts" package

Table A.18— Associations of the "Contacts" package

Class name	Association end	Designation	Definition	Multiplicity	Target
Address	addressLine	Address line	Address line for the associated Address	0..*	PkCommon.AddressLine
Contact	validityOfContact	Validity of contact	Validity of contact for the associated Contact	0..1	PkCommon.OverallPeriod
ContactPoint	telephoneContact	Telephone contact	Telephone contact for the associated ContactPoint	0..*	PkCommon.TelephoneContact
	eMailCommonData	E mail common data	E mail common data for the associated ContactPoint	0..*	PkCommon.EMailCommonData
	contactDetails	Contact details	Contact details for the associated ContactPoint	0..*	PkCommon.ContactDetails
	address	Address	Address for the associated ContactPoint	0..*	PkCommon.Address
	contactPointLocation	Contact point location	Contact point location for the associated ContactPoint	0..*	PkCommon.PointLocation
Organisation	externalIdentifier	External identifier	External identifier for the associated Organisation	0..*	PkCommon.ExternalIdentifier
ResponsibilityRole Assignment	contactPoint	Contact point	Contact point for the associated ResponsibilityRoleAssignment	0..*	PkCommon.ContactPoint

A.1.6.5 Attributes of the "Contacts" package

Table A.19— Attributes of the "Contacts" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Address	city	City	Postal city name of the address.	0..1	PkCommon.MultilingualString
	countryCode	Country code	EN ISO 3166-1 two-character country code.	0..1	PkCommon.CountryCode
	postcode	Postcode	Postcode or postal code for the address.	0..1	PkCommon.String
AddressLine	order	Order	the sequence order that the address line element should be displayed in	1..1	PkCommon.NonNegativeInteger
	text	Text	free-text description for the address line element	1..1	PkCommon.MultilingualString
	type	Type	the type for the address line element	1..1	PkCommon.AddressLineTypeEnum
Contact	notDefined	Not defined	When [TRUE], there is currently no contact defined for the selected role and/or timeframe. Don't use the specialisations in this case.	0..1	PkCommon.Boolean
	shareWithPublic	Share with public	When [TRUE], the details of this contact may be shared with the public. If FALSE these contacts details are for internal purposes only and should not be shared with the public or other entities.	0..1	PkCommon.Boolean
	unknown	Unknown	When [TRUE], the contact for the selected role and/or timeframe is unknown. Don't use the specialisations in this case.	0..1	PkCommon.Boolean
ContactByReference	contactReference	Contact reference	Contact information provided by a reference.	1..1	PkCommon.VersionedReference

Class name	Attribute name	Designation	Definition	Multiplicity	Type
					(pkcmn:ContactPoint)
ContactDetails	available24hours	Available24hours	Specifies if the availability is 24 hours a day. If [TRUE] it is available 24 hours. If omitted, this information is unknown or heterogeneous.	0..1	PkCommon.Boolean
	fax	Fax	Fax of the contact.	0..1	PkCommon.String
	language	Language	Language(s) this contact is able to speak resp. understand.	0..*	PkCommon.LanguageCode
	logoUrl	Logo URL	Specifies a Universal resource locator (URL) at which a logo for this contact can be found.	0..1	PkCommon.Url
	moreInfo	More info	Additional information relating to the contact.	0..*	PkCommon.MultilingualString
	personFirstName	Person first name	First name of the contact person.	0..1	PkCommon.String
	personName	Person name	Name of the contact person.	0..1	PkCommon.String
	position	Position	The position of the contact person.	0..1	PkCommon.MultilingualString
	publishingAgreement	Publishing agreement	Indication, whether the contact accepted publishing its contact information [TRUE]=accepted.	0..1	PkCommon.Boolean
	responsibility	Responsibility	Specification of what service or equipment the contact is responsible for.	0..*	PkCommon.MultilingualString
	urlLinkAddress	URL link address	A Uniform Resource Locator (URL) address pointing to a resource available on the Internet from where further relevant information may be obtained.	0..1	PkCommon.Url
EMailCommonData	primaryFlag	Primary flag	If [TRUE], this indicates that this is the primary point of contact.	0..1	PkCommon.Boolean
	typeCode	Type code	Indicates the nature of the email address.	0..1	PkCommon.EMailTypeEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
ExternalIdentifier	additionalInformation	Additional information	Additional information about the context nature of the external identifier	0..1	PkCommon.String
	identifier	Identifier	external identifier for organisation	1..1	PkCommon.String
OperatorDefinedPlace	identifier	Identifier	identifier for a defined place given by an organisation	1..1	PkCommon.String
Organisation	endValidUsagePeriod	End valid usage period	Date to which this organisation instance is considered to be valid	0..1	PkCommon.Date
	linkToGeneralInformation	Link to general information	An internet address from where further relevant information about this organisation may be obtained.	0..1	PkCommon.Url
	linkToLogo	Link to logo	An internet address (URL) from where the logo of this organisation may be obtained.	0..1	PkCommon.Url
	name	Name	Name of the organisation or service.	1..1	PkCommon.String
	shortname	Shortname	Supplier-defined abbreviated name for the organisation or service.	0..1	PkCommon.String
	startValidUsagePeriod	Start valid usage period	Date from which this organisation instance is considered to be valid	0..1	PkCommon.Date
	tradingname	Tradingname	Trading or brand name organisation or service	0..1	PkCommon.String
ResponsibilityRoleAssignment	type	Type	The type of the contact.	1..1	PkCommon.ContactTypeEnum
TelephoneContact	areaCode	Area code	The area code element of telephone number.	0..1	PkCommon.String
	extensionNumber	Extension number	Any extension number typically within a larger organisation's telephone exchange system.	0..*	PkCommon.String
	ituCountryCode	Itu country code	Country calling codes or country dial in codes are telephone dialing prefixes for the member countries or regions of the International Telecommunication Union (ITU), defined by ITU-T in standards E.123 and E.164.	0..1	PkCommon.String

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	localNumber	Local number	Local code element of a telephone number.	0..*	PkCommon.String

A.1.7 "Demand" package

A.1.7.1 Location of "Demand" package

The location of "Demand" package is:

— D2Payload/Extension/Parking/Occupancy/Demand

A.1.7.2 Classes of the "Demand" package

Table A.20— Classes of the "Demand" package

Class name	Designation	Definition	Stereotype	Abstract
DemandSpaceType	Demand space type	Defines when a specific space within a place is occupied, for how long, and the total amount for this space for this time. Includes when occupancy was determined. Includes actual and estimated start and end times of occupancy.	D2Class	no
DemandTable	Demand table	Table structure that defines parameters of reporting actual usage of a Hierarchy Element at aggregate (DemandType) or space (DemandSpaceType) level	D2Class	no
DemandType	Demand type	Defines occupancy at a hierarchy element without specific space details; an aggregate count of demand activity within the Place hierarchy.	D2Class	no
SpaceOccupancyLevel	Space occupancy Level	Defines an utilization / occupancy level as specified by the data supplier or place owner. User defined occupancy levels to communicate utilization levels in easy to understand segments (e.g. utilization : Red > 90%, Yellow is 75-89%, Green < 74%)	D2Class	no

A.1.7.3 Specializations of the "Demand" package

There are no defined specializations in the "Demand" package.

A.1.7.4 Associations of the "Demand" package

Table A.21— Associations of the "Demand" package

Class name	Association end	Designation	Definition	Multiplicity	Target
DemandSpaceType	spaceOccupancyLevel	Space occupancy level	Space occupancy level for the associated DemandSpaceType	0..1	Occupancy.SpaceOccupancyLevel
DemandTable	recordType	Record type	Record type for the associated DemandTable	1..1	PkCommon.RecordType
	demandType	Demand type	Demand type for the associated DemandTable	0..*	Occupancy.DemandType
	demandSpaceType	Demand space type	Demand space type for the associated DemandTable	0..*	Occupancy.DemandSpaceType

A.1.7.5 Attributes of the "Demand" package

Table A.22— Attributes of the "Demand" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
DemandSpaceType	actualEnd	Actual end	The actual time a space is vacated.	0..1	PkCommon.DateTime
	actualStart	Actual start	The actual time a space is initially occupied.	0..1	PkCommon.DateTime
	detectionUpdateTime	Detection update time	Time of update, from detector which is typically a space sensor or camera.	1..1	PkCommon.DateTime
	estimatedEnd	Estimated end	The estimated time a space is expected to be vacated, typically based on a reservation.	0..1	PkCommon.DateTime

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	estimatedStart	Estimated start	The estimated time a space is expected to be occupied, typically based on a reservation.	0..1	PkCommon.DateTime
	spaceId	Space id	Name of space, specifically identifies each individual space in an area.	0..*	PkCommon.Reference (plc:Space)
DemandTable	creationTime	Creation time	Timestamp when the demand table/utilization data is compiled.	1..1	PkCommon.DateTime
	elementId	Element id	Reference to an element within the Parking Place Hierarchy	1..1	PkCommon.VersionedReference (plc:HierarchyElementGeneral)
	frequency	Frequency	How frequently the demand/utilization data is updated	0..1	PkCommon.Duration
DemandType	count	Count	Number of utilized or occupied spaces.	0..1	PkCommon.NonNegativeInteger
	creationTime	Creation time	When data in the record was compiled.	1..1	PkCommon.DateTime
	occupancyCalculation	Occupancy calculation	Is occupancy based on physical count, derived (calculated), or a verified report (high confidence report)	1..*	Occupancy.CalculationTypeEnum
	percentage	Percentage	Percent of spaces occupied or utilized.	0..1	PkCommon.Percentage
SpaceOccupancyLevel	occupancyIndicator	Occupancy indicator	User-defined occupancy indicator (e.g. red = occupied), referencing specified user defined code list	1..1	PkCommon.ReferencedCodeListEntry

A.1.8 "Eligibility" package

A.1.8.1 Location of "Eligibility" package

The location of "Eligibility" package is:

— D2Payload/Extension/Parking/Rates/Eligibility

A.1.8.2 Classes of the "Eligibility" package

Table A.23— Classes of the "Eligibility" package

Class name	Designation	Definition	Stereotype	Abstract
AssignedRightTimeRelative	Assigned right time relative	Time-based qualification criteria, linked to the possession of a specified Right Specification. Example: permitting a return stay at a specified rate, within defined time window (start and end time windows may be defined)	D2Class	no
Eligibility	Eligibility	Defines the combination of Eligibility requirements with RateTables and associates this combination to a RightSpecification.	D2VersionedIdentifiable	no
Emissions	Emissions	Emission characteristics of vehicles.	D2Class	no
GrossWeightCharacteristic	Gross weight characteristic	Gross weight characteristic of a vehicle.	D2Class	no
HeightCharacteristic	Height characteristic	Height characteristic of a vehicle.	D2Class	no
LengthCharacteristic	Length characteristic	Length characteristic of a vehicle.	D2Class	no
LinkedRightSpecification	Linked right specification	Qualification criteria for eligibility based possession of a specified Right Specification - on the duration of time relative to a defined time-based qualification related to an assigned right.	D2Class	no
Qualification	Qualification	A singular set of criteria used to test eligibility for use of a rate table or Right Specification.	D2Class	no
RelativeOffsets	Relative offsets	Time-based qualification criteria, linked to the possession of a specified Right Specification, defined using relative time offsets from the last use of the identified Right Specification	D2Class	no

Class name	Designation	Definition	Stereotype	Abstract
TimesOfDay	Times of day	Time-based qualification criteria, linked to the possession of a specified Right Specification, defined using absolute time of day offsets from the last use of the identified Right Specification	D2Class	no
UserQualification	User qualification	Class supporting the definition of user group characteristics	D2Class	no
VehicleLoad	Vehicle load	Class defining load types carried by vehicles. Loads can be goods or people.	D2Class	no
VehicleType	Vehicle type	Class supporting the definition of vehicle characteristics	D2Class	no
WidthCharacteristic	Width characteristic	Width characteristic of a vehicle.	D2Class	no

A.1.8.3 Specializations of the "Eligibility" package

Table A.24— Specializations of the "Eligibility" package

Class name	Parent Class Name
RelativeOffsets	Rates.AssignedRightTimeRelative
TimesOfDay	Rates.AssignedRightTimeRelative

A.1.8.4 Associations of the "Eligibility" package

Table A.25— Associations of the "Eligibility" package

Class name	Association end	Designation	Definition	Multiplicity	Target
Eligibility	rightHolder	Right holder	Right holder for the associated Eligibility	0..*	Right.RightHolder
	rateDiscount	Rate discount	Rate discount for the associated Eligibility	0..1	Right.RateDiscount
	qualification	Qualification	Qualification for the associated Eligibility	0..*	Rates.Qualification

Class name	Association end	Designation	Definition	Multiplicity	Target
LinkedRightSpecification	assignedRightTimeRelative	Assigned right time relative	Assigned right time relative for the associated LinkedRightSpecification	0..1	Rates.AssignedRightTimeRelative
Qualification	widthCharacteristic	Width characteristic	Width characteristic for the associated Qualification	0..2	Rates.WidthCharacteristic
	vehicleType	Vehicle type	Vehicle type for the associated Qualification	0..*	Rates.VehicleType
	vehicleLoad	Vehicle load	Vehicle load for the associated Qualification	0..*	Rates.VehicleLoad
	userQualification	User qualification	User qualification for the associated Qualification	0..*	Rates.UserQualification
	linkedRightSpecification	Linked right specification	Linked right specification for the associated Qualification	0..1	Rates.LinkedRightSpecification
	lengthCharacteristic	Length characteristic	Length characteristic for the associated Qualification	0..2	Rates.LengthCharacteristic
	heightCharacteristic	Height characteristic	Height characteristic for the associated Qualification	0..2	Rates.HeightCharacteristic
	grossWeightCharacteristic	Gross weight characteristic	Gross weight characteristic for the associated Qualification	0..2	Rates.GrossWeightCharacteristic
	emissions	Emissions	Emissions for the associated Qualification	0..1	Rates.Emissions
	paymentMethod	Payment method	Payment method for the associated Qualification	0..*	Place.PaymentMethod

A.1.8.5 Attributes of the "Eligibility" package

Table A.26— Attributes of the "Eligibility" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Eligibility	combinable	Combinable	Boolean attribute that indicates (TRUE) if all RateTables associated to a RightSpecification with a common Eligibility can be combined to establish a lowest cost tariff or (FALSE) they cannot be combined.	0..1	PkCommon.Boolean
	description	Description	Free-text description for the eligibility definition	0..1	PkCommon.MultilingualString
	name	Name	Free-text name for the eligibility name to assist data users to readily find the eligibility characteristics for a specific eligibility data set	0..1	PkCommon.MultilingualString
	noFeeToUse	No fee to use	if TRUE indicates that the related RightSpecification may be used without charge or cost. If FALSE or not specified, costs and charges apply	1..1	PkCommon.Boolean
	priority	Priority	An integer value, starting at 1, indicating the order in which multiple relevant RateTables shall be considered, with 1 being the highest priority.	0..1	PkCommon.Integer
Emissions	emissionClassification	Emission classification	Vehicle engine emissions classification.	0..1	PkCommon.ReferencedCodeListEntry
	emissionClassificationOther	Emission classification other	Some other (probably locally defined) value(s) for emission classification.	0..*	PkCommon.String
	emissionLevel	Emission level	The emission level of a vehicle.	0..1	Rates.LowEmissionLevelEnum
GrossWeightCharacteristic	comparisonOperator	Comparison operator	The operator to be used in the vehicle characteristic comparison operation. Examples include equal to, greater than, less than, etc.	1..1	PkCommon.ComparisonOperatorEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	grossVehicleWeight	Gross vehicle weight	The gross weight of the vehicle and its load, including any trailers.	1..1	PkCommon.Tonnes
	typeOfWeight	Type of weight	The meaning of the weight value	1..1	Rates.WeightTypeEnum
HeightCharacteristic	comparisonOperator	Comparison operator	The operator to be used in the vehicle characteristic comparison operation. Examples include equal to, greater than, less than, etc.	1..1	PkCommon.ComparisonOperatorEnum
	vehicleHeight	Vehicle height	The height of the highest part, excluding antennae, of an individual vehicle from the reference plane defined by the bottom of the wheels touching the ground, in metres.	1..1	PkCommon.MetresAsFloat
LengthCharacteristic	comparisonOperator	Comparison operator	The operator to be used in the vehicle characteristic comparison operation. Examples include equal to, greater than, less than, etc	1..1	PkCommon.ComparisonOperatorEnum
	vehicleLength	Vehicle length	The overall distance between the front and back of an individual vehicle, including the length of any trailers, couplings, embedded features.	1..1	PkCommon.MetresAsFloat
LinkedRightSpecification	qualifyingRightSpec	Qualifying right spec	Identifies a held RightSpecification.	1..1	PkCommon.VersionedReference
Qualification	memberOfOtherRateTable	Member of other rate table	indicates if this qualification can be used in combination with the use of another rate table. [TRUE]= member of (i.e., used) another rate table.	0..1	PkCommon.Boolean
	membershipName	Membership name	free-text description of the membership associated to a qualification. e.g. member of a gym or business	0..*	PkCommon.MultilingualString
	noFeeToUse	No fee to use	specific facility is free or not. [TRUE] (e.g. free to park, no payment charge to use)	0..1	PkCommon.Boolean
	propulsionEnergyType	Propulsion energy type	indicates eligible fuel types for applicable vehicles	0..*	Rates.EnergySourceEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	withMembership	With membership	indicates that a membership is required. [TRUE] membership required	0..1	PkCommon.Boolean
	withReservation	With reservation	indicates whether a reservation is required. [TRUE] reservation required	0..1	PkCommon.Boolean
RelativeOffsets	earliestEndRelative	Earliest end relative	defines the earliest end eligibility period	0..1	PkCommon.Duration
	earliestStartRelative	Earliest start relative	defines the earliest start eligibility period	0..1	PkCommon.Duration
	latestEndRelative	Latest end relative	defines the latest start eligibility period	0..1	PkCommon.Duration
	latestStartRelative	Latest start relative	defines the latest start eligibility period	0..1	PkCommon.Duration
TimesOfDay	earliestEnd	Earliest end	defines the earliest end eligibility	0..1	PkCommon.Time
	earliestStart	Earliest start	defines the earliest start eligibility period, defined as a time of day	0..1	PkCommon.Time
	latestEnd	Latest end	defines the latest end eligibility	0..1	PkCommon.Time
	latestStart	Latest start	defines the latest start eligibility	0..1	PkCommon.Time
UserQualification	userGroup	User group	indicates the user-defined user group qualification	1..1	PkCommon.ReferencedCodeListEntry
VehicleLoad	loadType	Load type	The type of load carried by the vehicle, which may be goods or people.	1..1	PkCommon.ReferencedCodeListEntry
VehicleType	vehicleType	Vehicle type	indicates the eligible vehicle types	1..1	PkCommon.ReferencedCodeListEntry
WidthCharacteristic	comparisonOperator	Comparison operator	The operator to be used in the vehicle characteristic comparison operation. Examples include equal to, greater than, less than, etc	1..1	PkCommon.ComparisonOperatorEnum
	vehicleWidth	Vehicle width	The maximum width of an individual vehicle, including any features embedded or fixed on it, in metres.	1..1	PkCommon.MetresAsFloat

A.1.9 "GeoJSON" package

A.1.9.1 Location of "GeoJSON" package

The location of "GeoJSON" package is:

— D2Payload/Extension/Parking/PkCommon/Location/GeoJSON

A.1.9.2 Classes of the "GeoJSON" package

Table A.27— Classes of the "GeoJSON" package

Class name	Designation	Definition	Stereotype	Abstract
GeoJSONGeometry	Geo j s o n geometry	General geometry object specified using GeoJSON, IETF rfc7946.	D2Class	no
GeoJSONLineString	Geo j s o n line string	Geometry representing a linear location defined as a linestring, specified using GeoJSON, IETF rfc7946.	D2Class	no
GeoJSONPoint	Geo j s o n point	Geometry representing a point location, specified using GeoJSON, IETF rfc7946.	D2Class	no
GeoJSONPoint2D	Geo j s o n point2 d	Class representing definition of a GeoJSON coordinate member as specified in IETF rfc 7946.	D2Class	no
GeoJSONPolygon	Geo j s o n polygon	Geometry representing an area based polygon location defined as a polygon, specified using GeoJSON, IETF rfc7946.	D2Class	no

A.1.9.3 Specializations of the "GeoJSON" package

Table A.28— Specializations of the "GeoJSON" package

Class name	Parent Class Name
GeoJSONLineString	PkCommon.GeoJSONGeometry
GeoJSONPoint	PkCommon.GeoJSONGeometry
GeoJSONPolygon	PkCommon.GeoJSONGeometry

A.1.9.4 Associations of the "GeoJSON" package

Table A.29— Associations of the "GeoJSON" package

Class name	Association end	Designation	Definition	Multiplicity	Target
GeoJSONLineString	geoJSONPoint2D	Geo j s o n point2 d	Geo j s o n point2 d for the associated GeoJSONLineString	2..*	PkCommon.GeoJSONPoint 2D
GeoJSONPoint	geoJSONPoint2D	Geo j s o n point2 d	Geo j s o n point2 d for the associated GeoJSONPoint	1..1	PkCommon.GeoJSONPoint 2D
GeoJSONPolygon	geoJSONPoint2D	Geo j s o n point2 d	Geo j s o n point2 d for the associated GeoJSONPolygon	3..*	PkCommon.GeoJSONPoint 2D

A.1.9.5 Attributes of the "GeoJSON" package

Table A.30— Attributes of the "GeoJSON" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
GeoJSONGeometry	type	Type	defines the geometry type represented by GeoJSONGeometry class.	1..1	PkCommon.GeoJSONTypeEnum
GeoJSONPoint2D	coordinates	Coordinates	Definition of a sequence of GeoJSONpoint2D coordinates as defined in IETF rfc7946.,e.g. [100.0, 0.0]	2..*	PkCommon.GeoJSONPoint2D

A.1.10"Gml" package

A.1.10.1 Location of "Gml" package

The location of "Gml" package is:

— D2Payload/Extension/Parking/PkCommon/Location/Gml

A.1.10.2 Classes of the "Gml" package

Table A.31— Classes of the "Gml" package

Class name	Designation	Definition	Stereotype	Abstract
GmlLinearRing	Gml linear ring	Closed line string not self-intersecting (i.e. having as last point the first point)	D2Class	no
GmlLineString	Gml line string	Line string based on GML (EN ISO 19136) definition: a curve defined by a series of two or more coordinate tuples. Unlike GML may be self-intersecting. If srsName attribute is not present, posList is assumed to use "ETRS89-LatLonh" reference system.	D2Class	no
GmlMultiPolygon	Gml multi polygon	An area defined by a set of polygons according to GML (EN ISO 19136).	D2Class	no
GmlPolygon	Gml polygon	Planar surface defined by 1 exterior boundary and 0 or more interior boundaries	D2Class	no

A.1.10.3 Specializations of the "Gml" package

Table A.32— Specializations of the "Gml" package

Class name	Parent Class Name
GmlLinearRing	PkCommon.GmlLineString

A.1.10.4 Associations of the "Gml" package

Table A.33— Associations of the "Gml" package

Class name	Association end	Designation	Definition	Multiplicity	Target
GmlMultiPolygon	gmlPolygon	Gml polygon	Gml polygon for the associated GmlMultiPolygon	1..*	PkCommon.GmlPolygon
GmlPolygon	exterior	Exterior	A boundary of a polygonal surface consisting of a ring i.e. in the normal 2D case, a closed polygonal line distinguished as exterior. Such a polygonal line has at least 4 pairs of coordinates	1..1	PkCommon.GmlLinearRing
	interior	Interior	A boundary of internal patches of a polygonal surface consisting of a ring feature	0..*	PkCommon.GmlLinearRing

A.1.10.5 Attributes of the "Gml" package

Table A.34— Attributes of the "Gml" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
GmlLineString	posList	Pos list	List of coordinate Tuples define the geometry of this GmlLineString. There must be at least 2 Tuples of coordinates.	1..1	PkCommon.GmlPosList
	srsDimension	Srs dimension	Provides the size of the tuple of coordinates of each point. This number is 2 or 3. By default when omitted the dimension shall be interpreted as 2.	0..1	PkCommon.NonNegativeInteger
	srsName	Srs name	Specifies the Coordinate Reference System (CRS) used to interpret the coordinates in this GmlLineString	0..1	PkCommon.String
GmlMultiPolygon	gmlAreaName	Gml area name	Name of the multi-polygon area	0..1	PkCommon.MultilingualString

A.1.11"IdentifiedArea" package

A.1.11.1 Location of "IdentifiedArea" package

The location of "IdentifiedArea" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy/IdentifiedArea

A.1.11.2 Classes of the "IdentifiedArea" package

Table A.35— Classes of the "IdentifiedArea" package

Class name	Designation	Definition	Stereotype	Abstract
IdentifiedArea	Identified area	an identifiable discrete bounded geographic zone that shares common characteristics and is used for parking and mobility related operations or other purposes	D2Class	yes

A.1.11.3 Specializations of the "IdentifiedArea" package

Table A.36— Specializations of the "IdentifiedArea" package

Class name	Parent Class Name
IdentifiedArea	Place.HierarchyElementGeneral

A.1.11.4 Associations of the "IdentifiedArea" package

Table A.37— Associations of the "IdentifiedArea" package

Class name	Association end	Designation	Definition	Multiplicity	Target
IdentifiedArea	times	Times	Times for the associated IdentifiedArea	0..1	PkCommon.Times
	operatingRestriction	Operating restriction	Operating restriction for the associated IdentifiedArea	0..*	Place.OperatingRestriction
	areaBoundedZone	Area bounded zone	Area bounded zone for the associated IdentifiedArea	0..*	PkCommon.AreaLocation
	indicativeIdentifiedAreaPointLocation	Indicative identified area point location	Indicative identified area point location for the associated IdentifiedArea	0..*	PkCommon.PointLocation
	streetAddress	Street address	Street address for the associated IdentifiedArea	0..*	PkCommon.Address

A.1.11.5 Attributes of the "IdentifiedArea" package

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

A.1.12"LinearReference" package

A.1.12.1 Location of "LinearReference" package

The location of "LinearReference" package is:

— D2Payload/Extension/Parking/PkCommon/Location/LinearReference

A.1.12.2 Classes of the "LinearReference" package

Table A.38— Classes of the "LinearReference" package

Class name	Designation	Definition	Stereotype	Abstract
LinearLocation	Linear location	Package containing classes implementing the ISO19148 "Geographic information - linear referencing" method	D2Class	no

A.1.12.3 Specializations of the "LinearReference" package

Table A.39— Specializations of the "LinearReference" package

Class name	Parent Class Name
LinearLocation	PkCommon.Location

A.1.12.4 Associations of the "LinearReference" package

Table A.40— Associations of the "LinearReference" package

Class name	Association end	Designation	Definition	Multiplicity	Target
LinearLocation	geoJSONLineString	Geo j s o n line string	Geo j s o n line string for the associated LinearLocation	0..1	PkCommon.GeoJSONLineString
	gmlLineString	Gml line string	Gml line string for the associated LinearLocation	0..1	PkCommon.GmlLineString
	openlrLinear	Openlr linear	Openlr linear for the associated LinearLocation	0..1	PkCommon.OpenlrLinear

A.1.12.5 Attributes of the "LinearReference" package

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

A.1.13"Location" package

A.1.13.1 Location of "Location" package

The location of "Location" package is:

— D2Payload/Extension/Parking/PkCommon/Location

A.1.13.2 Classes of the "Location" package

Table A.41— Classes of the "Location" package

Class name	Designation	Definition	Stereotype	Abstract
Location	Location	A collection of information relating to the specification of a location either as a point or a linear location or as an area.	D2Class	no

A.1.13.3 Specializations of the "Location" package

There are no defined specializations in the "Location" package.

A.1.13.4 Associations of the "Location" package

There are no defined associations in the "Location" package.

A.1.13.5 Attributes of the "Location" package

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

A.1.14"NamedArea" package

A.1.14.1 Location of "NamedArea" package

The location of "NamedArea" package is:

— D2Payload/Extension/Parking/PkCommon/Location/NamedArea

A.1.14.2 Classes of the "NamedArea" package

Table A.42— Classes of the "NamedArea" package

Class name	Designation	Definition	Stereotype	Abstract
IsoNamedArea	Iso named area	The ISO 3166-2 representation for the named area.	D2Class	no
NamedArea	Named area	An area defined by a name and/or in terms of known boundaries, such as country or county boundaries or allocated control area of particular authority. The attributes do not form a union; instead, the smallest intersection forms the resulting area.	D2Class	no
NutsNamedArea	Nuts named area	The NUTS-Code representation for the named area (Nomenclature of territorial units for statistics) or its LAU code representation (Local Administrative Unit).	D2Class	no

A.1.14.3 Specializations of the "NamedArea" package

Table A.43— Specializations of the "NamedArea" package

Class name	Parent Class Name
IsoNamedArea	PkCommon.NamedArea
NutsNamedArea	PkCommon.NamedArea

A.1.14.4 Associations of the "NamedArea" package

There are no defined associations in the "NamedArea" package.

A.1.14.5 Attributes of the "NamedArea" package

Table A.44— Attributes of the "NamedArea" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
IsoNamedArea	subdivisionCode	Subdivision code	The ISO 3166-2 subdivision code for the named area.	1..1	PkCommon.SubdivisionCode
	subdivisionType	Subdivision type	The ISO 3166-2 subdivision type for the named area.	1..1	PkCommon.SubdivisionTypeEnum
NamedArea	areaName	Area name	The name of the area.	1..1	PkCommon.MultilingualString
	country	Country	EN ISO 3166-1 two-character country code.	0..1	PkCommon.CountryCode
NutsNamedArea	nutsCode	Nuts code	The NUTS code for the named area.	1..1	PkCommon.NutsCode
	nutsCodeType	Nuts code type	The NUTS code type for the named area.	1..1	PkCommon.NutsCodeTypeEnum

A.1.15"Observation" package

A.1.15.1 Location of "Observation" package

The location of "Observation" package is:

— D2Payload/Extension/Parking/Observation

A.1.15.2 Classes of the "Observation" package

Table A.45— Classes of the "Observation" package

Class name	Designation	Definition	Stereotype	Abstract
Image	Image	Class containing information relating to still or moving image observation evidence or a reference to such observation evidence.	D2Class	no
Location	Location	Positional information relating to an observation.	D2Class	no
ObservationElement	Observation element	A specific collection of observation details intended to be used for one specific observation instance.	D2VersionedIdentifiable	no
ObservationSet	Observation set	Details of the collection of a set of related documented observations.	D2VersionedIdentifiable	no

A.1.15.3 Specializations of the "Observation" package

There are no defined specializations in the "Observation" package.

A.1.15.4 Associations of the "Observation" package

Table A.46— Associations of the "Observation" package

Class name	Association end	Designation	Definition	Multiplicity	Target
Location	observedLocation	Observed location	Observed location for the associated Location	0..1	PkCommon.PointLocation
	observerLocation	Observer location	Observer location for the associated Location	1..1	PkCommon.PointLocation
ObservationElement	vehicleAncillaryIdentification	Vehicle ancillary identification	Vehicle ancillary identification for the associated ObservationElement	0..1	PkCommon.VehicleAncillaryIdentification
	location	Location	Location for the associated ObservationElement	1..1	Observation.Location

Class name	Association end	Designation	Definition	Multiplicity	Target
	image	Image	Image for the associated ObservationElement	0..*	Observation.Image
	observationElementRecordUpdate	Observation element record update	Observation element record update for the associated ObservationElement	0..1	PkCommon.RecordType
ObservationSet	recordType	Record type	Record type for the associated ObservationSet	1..1	PkCommon.RecordType
	observationElement	Observation element	Observation element for the associated ObservationSet	0..*	Observation.ObservationElement

A.1.15.5 Attributes of the "Observation" package

Table A.47— Attributes of the "Observation" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Image	id	Id	Reference identifier to a specific image.	1..1	PkCommon.String
	image	Image	File or binary object containing a still or moving image.	0..1	PkCommon.Base64Binary
	imageLink	Image link	Resource locator to an external handle image resource	0..1	PkCommon.Url
Location	observedLocationTextual	Observed location textual	Free-text description concerning the location of the target object of an observation.	0..1	PkCommon.MultilingualString
ObservationElement	description	Description	Free-text description for details of the observation.	0..1	PkCommon.MultilingualString
	elementId	Element id	Reference to an element within the Parking Place Hierarchy	0..*	PkCommon.VersionedReference (plc:HierarchyElementGeneral)

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	endTime	End time	The date and time of the observation event ended. (e.g. a car was observed to exit a delivery zone at 9:33am).	0..1	PkCommon.DateTime
	method	Method	The method of observation recorded for this observation element	1..1	Observation.ObservationTypeEnum
	observedCredentialId	Observed credential id	Specific identifier to the referenced observed credential. Credential may be an RFID tag, ticket number from a paystation, License plate number, etc	0..1	PkCommon.String
	observer	Observer	The individual person making the observation documented in this observation element.	0..1	PkCommon.String
	observerOrganisation	Observer organisation	The organisation making the observation documented in this observation element.	1..1	PkCommon.VersionedReference (pkcmn:Organisation)
	startTime	Start time	The date and time of the observation. event started. (e.g. a car was observed to enter a delivery zone at 8:01am)	1..1	PkCommon.DateTime
	Type	Type	Type of the credential referenced within the observation.	0..1	Right.CredentialTypeEnum

A.1.16"OpenLR" package

A.1.16.1 Location of "OpenLR" package

The location of "OpenLR" package is:

— D2Payload/Extension/Parking/PkCommon/Location/OpenLR

A.1.16.2 Classes of the "OpenLR" package

Table A.48— Classes of the "OpenLR" package

Class name	Designation	Definition	Stereotype	Abstract
OpenlrBaseReferencePoint	Openlr base reference point	Base class used to hold data about a reference point.	D2Class	yes
OpenlrLineAttributes	Openlr line attributes	Line attributes are part of a location reference point and consists of functional road class (FRC), form of way (FOW) and bearing (BEAR) data.	D2Class	no
OpenlrOffsets	Openlr offsets	Offsets are used to locate the start and end of a location more precisely than bounding to the nodes in a network.	D2Class	no
OpenlrPathAttributes	Openlr path attributes	Properties of the path from the associated location reference point to the next location reference point, which are specified to assist correct identification of the point in an external map data source.	D2Class	no

A.1.16.3 Specializations of the "OpenLR" package

There are no defined specializations in the "OpenLR" package.

A.1.16.4 Associations of the "OpenLR" package

Table A.49— Associations of the "OpenLR" package

Class name	Association end	Designation	Definition	Multiplicity	Target
OpenlrBaseReferencePoint	openlrLineAttributes	Openlr line attributes	Openlr line attributes for the associated OpenlrBaseReferencePoint	1..1	PkCommon.OpenlrLine Attributes

A.1.16.5 Attributes of the "OpenLR" package

Table A.50— Attributes of the "OpenLR" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
OpenlrLineAttributes	openlrBearing	Openlr bearing	defines the bearing field as an integer value between 0 and 359	1..1	PkCommon.AngleInDegrees
	openlrFormOfWay	Openlr form of way	A classification based on the importance of the role that the Road Element (or Ferry Connection) performs in the connectivity of the total road network. (EN ISO 14825 § 7.2.88)	1..1	PkCommon.OpenlrFormOfWayEnum
	openlrFunctionalRoadClass	Openlr functional road class	Certain aspects of the physical form that a Road Element takes. It is based on a number of certain physical and traffic properties. (EN ISO 14825 § 7.2.85)	1..1	PkCommon.OpenlrFunctionalRoadClassEnum
OpenlrOffsets	openlrNegativeOffset	Openlr negative offset	The negative offset along the line of the location measured along the line reference path between the end point of the location reference and the ending node of the line reference path.	0..1	PkCommon.MetresAsNonNegativeInteger
	openlrPositiveOffset	Openlr positive offset	The positive offset along the line of the location measured along the line reference path between the start point of the location reference and the starting node of the line reference path.	0..1	PkCommon.MetresAsNonNegativeInteger
OpenlrPathAttributes	openlrDistanceToNextLRPoint	Openlr distance to next l r point	The DNP attribute measures the distance in meters between two consecutive location reference-points along the location reference path described in the corresponding enumeration	1..1	PkCommon.NonNegativeInteger
	openlrLowestFrcToNextLRPoint	Openlr lowest frc to next l r point	The lowest FRC to the next point indicates the lowest functional road class used in the location reference path to the next LR-point.	1..1	PkCommon.OpenlrFunctionalRoadClassEnum

A.1.17"OpenlrArea" package

A.1.17.1 Location of "OpenlrArea" package

The location of "OpenlrArea" package is:

— D2Payload/Extension/Parking/PkCommon/Location/OpenLR/OpenlrArea

A.1.17.2 Classes of the "OpenlrArea" package

Table A.51— Classes of the "OpenlrArea" package

Class name	Designation	Definition	Stereotype	Abstract
OpenlrAreaLocationReference	Openlr area location reference	A two-dimensional part of the surface of the earth which is bounded by a closed curve. An area location may cover parts of the road network but does not necessarily need to, represented in OpenLR standard for Area Locations	D2Class	yes
OpenlrCircleLocationReference	Openlr circle location reference	The OpenLR method of area definition by providing a center position and a radius	D2Class	no
OpenlrClosedLineLocationReference	Openlr closed line location reference	The OpenLR method of area definition by providing a closed path (i.e. a circuit) in the road network. The boundary always consists of road segments	D2Class	no
OpenlrGridLocationReference	Openlr grid location reference	Area defined using an OpenLR method defined by a tessellation of rectangles	D2Class	no
OpenlrPolygonCorners	Openlr polygon corners	A geodetic coordinate Tuple that defines vertices of underlying geometrical polygon.	D2Class	no
OpenlrPolygonLocationReference	Openlr polygon location reference	The OpenLR method of area definition by providing points that bound the area	D2Class	no
OpenlrRectangle	Openlr rectangle	Area delimited by a rectangle defined by the geodetic co-ordinates of the two ends of its diagonal from south-west to north-east (the rectangle having two sides that are parallel to lines of latitude)	D2Class	no
OpenlrRectangleLocationReference	Openlr rectangle location reference	The openLR method of area definition by providing a rectangular shape defined by two geo-coordinate pairs	D2Class	no

A.1.17.3 Specializations of the "OpenlrArea" package

Table A.52— Specializations of the "OpenlrArea" package

Class name	Parent Class Name
OpenlrCircleLocationReference	PkCommon.OpenlrAreaLocationReference
OpenlrClosedLineLocationReference	PkCommon.OpenlrAreaLocationReference
OpenlrGridLocationReference	PkCommon.OpenlrAreaLocationReference
OpenlrPolygonLocationReference	PkCommon.OpenlrAreaLocationReference
OpenlrRectangleLocationReference	PkCommon.OpenlrAreaLocationReference

A.1.17.4 Associations of the "OpenlrArea" package

Table A.53— Associations of the "OpenlrArea" package

Class name	Association end	Designation	Definition	Multiplicity	Target
OpenlrCircleLocationReference	openlrGeoCoordinate	Openlr geo coordinate	Openlr geo coordinate for the associated OpenlrCircleLocationReference	1..1	PkCommon.OpenlrGeoCoordinate
OpenlrClosedLineLocationReference	openlrLocationReferencePoint	Openlr location reference point	Openlr location reference point for the associated OpenlrClosedLineLocationReference	1..*	PkCommon.OpenlrLocationReferencePoint
	openlrLastLine	Openlr last line	Provides the line attributes for the last line section closing the polygon.	1..1	PkCommon.OpenlrLastLocationReferencePoint
OpenlrGridLocationReference	opeLrRectangleGridLocationReference	Ope lr rectangle grid	Ope lr rectangle grid location reference for the associated OpenlrGridLocationReference	1..1	PkCommon.OpenlrRectangle

Class name	Association end	Designation	Definition	Multiplicity	Target
		location reference			
OpenlrPolygonCorners	openlrCoordinates	Openlr coordinates	Openlr coordinates for the associated OpenlrPolygonCorners	3..*	PkCommon.PointCoordinates
OpenlrPolygonLocationReference	openlrPolygonCorners	Openlr polygon corners	Openlr polygon corners for the associated OpenlrPolygonLocationReference	1..1	PkCommon.OpenlrPolygonCorners
OpenlrRectangle	openlrLowerLeft	Openlr lower left	Openlr lower left for the associated OpenlrRectangle	1..1	PkCommon.PointCoordinates
	openlrUpperRight	Openlr upper right	Openlr upper right for the associated OpenlrRectangle	1..1	PkCommon.PointCoordinates
OpenlrRectangleLocationReference	opeLrRectangleLocationReference	Ope lr rectanglelocation reference	Ope lr rectanglelocation reference for the associated OpenlrRectangleLocationReference	1..1	PkCommon.OpenlrRectangle

A.1.17.5 Attributes of the "OpenlrArea" package

Table A.54— Attributes of the "OpenlrArea" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
OpenlrCircleLocationReference	openlrRadius	Openlr radius	Radius of corresponding circular area.	1..1	PkCommon.MetresAsNonNegativeInteger
OpenlrGridLocationReference	openlrNumColumns	Openlr num columns	Number that the base rectangle should be multiplied in the east direction	1..1	PkCommon.NonNegativeInteger
	openlrNumRows	Openlr num rows	The number that the base rectangle should be multiplied in the north direction	1..1	PkCommon.NonNegativeInteger

A.1.18 "OpenlrLinear" package

A.1.18.1 Location of "OpenlrLinear" package

The location of "OpenlrLinear" package is:

— D2Payload/Extension/Parking/PkCommon/Location/OpenLR/OpenlrLinear

A.1.18.2 Classes of the "OpenlrLinear" package

Table A.55— Classes of the "OpenlrLinear" package

Class name	Designation	Definition	Stereotype	Abstract
OpenlrLinear	Openlr linear	OpenLR line location reference	D2Class	no
OpenlrLineLocationReference	Openlr line location reference	A line location reference is defined by an ordered sequence of location reference points and a terminating last location reference point.	D2Class	no

A.1.18.3 Specializations of the "OpenlrLinear" package

There are no defined specializations in the "OpenlrLinear" package.

A.1.18.4 Associations of the "OpenlrLinear" package

Table A.56— Associations of the "OpenlrLinear" package

Class name	Association end	Designation	Definition	Multiplicity	Target
OpenlrLinear	firstDirection	First direction	First OpenLR reference in first/main direction.	1..1	PkCommon.OpenlrLineLocationReference
	oppositeDirection	Opposite direction	If both direction, this is the reference in the opposite direction against firstDirection.	0..1	PkCommon.OpenlrLineLocationReference

Class name	Association end	Designation	Definition	Multiplicity	Target
OpenlrLineLocationReference	openlrLocationReferencePoint	Openlr location reference point	Openlr location reference point for the associated OpenlrLineLocationReference	1..*	PkCommon.OpenlrLocationReferencePoint
	openlrLastLocationReferencePoint	Openlr last location reference point	Openlr last location reference point for the associated OpenlrLineLocationReference	1..1	PkCommon.OpenlrLastLocationReferencePoint
	openlrOffsets	Openlr offsets	Allows for adding offsets to the line location path defined by nodes when the starting (respectively ending) point does not coincide with a node.	0..1	PkCommon.OpenlrOffsets

A.1.18.5 Attributes of the "OpenlrLinear" package

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

A.1.19"OpenlrPoint" package

A.1.19.1 Location of "OpenlrPoint" package

The location of "OpenlrPoint" package is:

— D2Payload/Extension/Parking/PkCommon/Location/OpenLR/OpenlrPoint

A.1.19.2 Classes of the "OpenlrPoint" package

Table A.57— Classes of the "OpenlrPoint" package

Class name	Designation	Definition	Stereotype	Abstract
OpenlrBasePointLocation	Openlr base point location	Holds common data that are used both in OpenlrPointAccessPoint and OpenlrPointAlongLine.	D2Class	yes
OpenlrGeoCoordinate	Openlr geo coordinate	A geo-coordinate pair is a position in a map defined by its longitude and latitude coordinate values.	D2Class	no
OpenlrLastLocationReferencePoint	Openlr last location reference point	The sequence of location reference points is terminated by a last location reference point.	D2Class	no
OpenlrLocationReferencePoint	Openlr location reference point	The basis of a location reference is a sequence of location reference points (LRPs).	D2Class	no
OpenlrPointAlongLine	Openlr point along line	Point along a line	D2Class	no
OpenlrPointAttributes	Openlr point attributes	Holds common data that are used both in OpenlrPointAccessPoint and OpenlrPointAlongLine.	D2Class	no
OpenlrPointLocationReference	Openlr point location reference	A point location is a zero-dimensional element in a map that specifies a geometric location.	D2Class	yes
OpenlrPoiWithAccessPoint	Openlr poi with access point	A point of interest (POI) along a line with access is a point location which is defined by a linear reference path,an offset value (defining the access point) from the starting node of this path and a coordinate pair that defines the POI itself.	D2Class	no

A.1.19.3 Specializations of the "OpenlrPoint" package

Table A.58— Specializations of the "OpenlrPoint" package

Class name	Parent Class Name
OpenlrBasePointLocation	PkCommon.OpenlrPointLocationReference
OpenlrGeoCoordinate	PkCommon.OpenlrPointLocationReference
OpenlrLastLocationReferencePoint	PkCommon.OpenlrBaseReferencePoint

Class name	Parent Class Name
OpenlrLocationReferencePoint	PkCommon.OpenlrBaseReferencePoint
OpenlrPointAlongLine	PkCommon.OpenlrBasePointLocation
OpenlrPoiWithAccessPoint	PkCommon.OpenlrBasePointLocation

A.1.19.4 Associations of the "OpenlrPoint" package

Table A.59— Associations of the "OpenlrPoint" package

Class name	Association end	Designation	Definition	Multiplicity	Target
OpenlrBasePointLocation	openlrLocationReferencePoint	Openlr location reference point	Openlr location reference point for the associated OpenlrBasePointLocation	1..1	PkCommon.OpenlrLocationReferencePoint
	openlrLastLocationReferencePoint	Openlr last location reference point	Openlr last location reference point for the associated OpenlrBasePointLocation	1..1	PkCommon.OpenlrLastLocationReferencePoint
	openlrOffsets	Openlr offsets	Openlr offsets for the associated OpenlrBasePointLocation	0..1	PkCommon.OpenlrOffsets
OpenlrGeoCoordinate	openlrCoordinates	Openlr coordinates	Openlr coordinates for the associated OpenlrGeoCoordinate	1..1	PkCommon.PointCoordinates
OpenlrLastLocationReferencePoint	openlrCoordinates	Openlr coordinates	Openlr coordinates for the associated OpenlrLastLocationReferencePoint	1..1	PkCommon.PointCoordinates
OpenlrLocationReferencePoint	openlrPathAttributes	Openlr path attributes	Openlr path attributes for the associated OpenlrLocationReferencePoint	1..1	PkCommon.OpenlrPathAttributes
OpenlrPoiWithAccessPoint	openlrCoordinates	Openlr coordinates	Openlr coordinates for the associated OpenlrPoiWithAccessPoint	1..1	PkCommon.PointCoordinates

A.1.19.5 Attributes of the "OpenlrPoint" package

Table A.60— Attributes of the "OpenlrPoint" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
OpenlrBasePointLocation	openlrOrientation	Openlr orientation	Orientation of the driving direction in relation with the direction of the underlying linear	1..1	PkCommon.OpenlrOrientationEnum
	openlrSideOfRoad	Openlr side of road	Provides the of road where the corresponding point lies.	1..1	PkCommon.OpenlrSideOfRoadEnum
OpenlrPointAttributes	openlrOrientation	Openlr orientation	Orientation of the driving direction in relation with the direction of the underlying linear	0..1	PkCommon.OpenlrOrientationEnum
	openlrSideOfRoad	Openlr side of road	Provides the of road where the corresponding point lies.	0..1	PkCommon.OpenlrSideOfRoadEnum

A.1.20 "Parking" package

A.1.20.1 Location of "Parking" package

The location of "Parking" package is:

— D2Payload/Extension/Parking

A.1.20.2 Classes of the "Parking" package

Table A.61— Classes of the "Parking" package

Class name	Designation	Definition	Stereotype	Abstract
ParkingPublication	Parking publication	A publication supporting exchange of data concepts defined in the parking model.	D2ModelRoot	no

A.1.20.3 Specializations of the "Parking" package

There are no defined specializations in the "Parking" package.

A.1.20.4 Associations of the "Parking" package

Table A.62— Associations of the "Parking" package

Class name	Association end	Designation	Definition	Multiplicity	Target
ParkingPublication	hierarchyElementGeneral	Hierarchy element general	Hierarchy element general for the associated ParkingPublication	1..*	Place.HierarchyElementGeneral

A.1.20.5 Attributes of the "Parking" package

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

A.1.21"PaymentMethod" package

A.1.21.1 Location of "PaymentMethod" package

The location of "PaymentMethod" package is:

— D2Payload/Extension/Parking/Place/PaymentMethod

A.1.21.2 Classes of the "PaymentMethod" package

Table A.63— Classes of the "PaymentMethod" package

Class name	Designation	Definition	Stereotype	Abstract
BrandsAcceptedCodeList	Brands accepted code list	Use this class to identify the code (short identification) of the payment brands that are accepted.	D2Class	no
BrandsAcceptedText	Brands accepted text	Use this class to describe details of the payment brands that are accepted.	D2Class	no
PaymentMethod	Payment method	provides information on the means of payment available	D2Class	no

A.1.21.3 Specializations of the "PaymentMethod" package

There are no defined specializations in the "PaymentMethod" package.

A.1.21.4 Associations of the "PaymentMethod" package

Table A.64— Associations of the "PaymentMethod" package

Class name	Association end	Designation	Definition	Multiplicity	Target
PaymentMethod	brandsAcceptedCodeList	Brands accepted code list	Brands accepted code list for the associated PaymentMethod	0..*	Place.BrandsAcceptedCodeList
	brandsAcceptedText	Brands accepted text	Brands accepted text for the associated PaymentMethod	0..*	Place.BrandsAcceptedText

A.1.21.5 Attributes of the "PaymentMethod" package

Table A.65— Attributes of the "PaymentMethod" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
BrandsAcceptedCodeList	list	List	List of accepted brands for payment cards.	1..1	PkCommon.ReferencedCodeListEntry
BrandsAcceptedText	brands	Brands	Accepted brands for payment cards.	1..1	PkCommon.String
PaymentMethod	means	Means	the means of payment available	0..*	Place.MeansOfPaymentEnum
	timing	Timing	Defines the timing of the parking or other mobility related payment (e.g. pay in advance, pay on exit, etc).	0..*	Place.PaymentTimingEnum

A.1.22"PedestrianAccess" package

A.1.22.1 Location of "PedestrianAccess" package

The location of "PedestrianAccess" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy/IdentifiedArea/PedestrianAccess

A.1.22.2 Classes of the "PedestrianAccess" package

Table A.66— Classes of the "PedestrianAccess" package

Class name	Designation	Definition	Stereotype	Abstract
PedestrianAccess	Pedestrian access	A specialisation of an identifiedArea defining a PedestrianAccess area.	D2Class	no

A.1.22.3 Specializations of the "PedestrianAccess" package

Table A.67— Specializations of the "PedestrianAccess" package

Class name	Parent Class Name
PedestrianAccess	Place.IdentifiedArea

A.1.22.4 Associations of the "PedestrianAccess" package

Table A.68— Associations of the "PedestrianAccess" package

Class name	Association end	Designation	Definition	Multiplicity	Target
PedestrianAccess	accessAndEgress	Access and egress	Access and egress for the associated PedestrianAccess	0..1	PkCommon.AccessAndEgress

A.1.22.5 Attributes of the "PedestrianAccess" package

Table A.69— Attributes of the "PedestrianAccess" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
PedestrianAccess	flow	Flow	Provides characterisation of the nature of the vehicular access area.	0..1	Place.AccessTypeEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	numberOfPortals	Number of portals	Indicates the number of door portals present at the pedestrian access area.	0..1	PkCommon.NonNegativeInteger
	pedestrianAccessType	Pedestrian access type	Provides information concerning the function of the pedestrian access.	1..1	Place.PedestrianAccessTypeEnum

A.1.23"Place" package

A.1.23.1 Location of "Place" package

The location of "Place" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy/Place

A.1.23.2 Classes of the "Place" package

Table A.70— Classes of the "Place" package

Class name	Designation	Definition	Stereotype	Abstract
Place	Place	a place or location used for parking, loading, unloading, standing, or some other mobility or transport related activity	D2Class	no

A.1.23.3 Specializations of the "Place" package

Table A.71— Specializations of the "Place" package

Class name	Parent Class Name
Place	Place.HierarchyElementGeneral

A.1.23.4 Associations of the "Place" package

Table A.72— Associations of the "Place" package

Class name	Association end	Designation	Definition	Multiplicity	Target
Place	commonComponents	Common components	Common components for the associated Place	0..1	Place.CommonComponents
	indicativePlacePointLocation	Indicative place point location	Indicative place point location for the associated Place	0..*	PkCommon.PointLocation
	placeBoundedZone	Place bounded zone	Place bounded zone for the associated Place	0..*	PkCommon.AreaLocation
	placeStreetAddress	Place street address	Place street address for the associated Place	0..*	PkCommon.Address

A.1.23.5 Attributes of the "Place" package

Table A.73— Attributes of the "Place" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Place	timeZone	Time zone	IANA time-zone (see http://www.iana.org/time-zones)	1..1	PkCommon.String

A.1.24"PlaceHierarchy" package

A.1.24.1 Location of "PlaceHierarchy" package

The location of "PlaceHierarchy" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy

A.1.24.2 Classes of the "PlaceHierarchy" package

Table A.74— Classes of the "PlaceHierarchy" package

Class name	Designation	Definition	Stereotype	Abstract
Campus	Campus	typically defines a large facility (such as a university campus, or an airport), or a large geographic zone (such as a city or a town), which may contain numerous places that can be logically reported together	D2Class	no
HierarchyElementGeneral	Hierarchy element general	a generalised component of a place hierarchy, that forms one element in the tree-like hierarchy	D2VersionedIdentifiable	yes
OccupancyLevel	Occupancy level	Defines an occupancy level as specified by the data supplier.	D2Class	no

A.1.24.3 Specializations of the "PlaceHierarchy" package

Table A.75— Specializations of the "PlaceHierarchy" package

Class name	Parent Class Name
Campus	Place.HierarchyElementGeneral

A.1.24.4 Associations of the "PlaceHierarchy" package

Table A.76— Associations of the "PlaceHierarchy" package

Class name	Association end	Designation	Definition	Multiplicity	Target
HierarchyElementGeneral	occupancyLevel	Occupancy level	Occupancy level for the associated HierarchyElementGeneral	0..1	Place.OccupancyLevel
	recordType	Record type	Record type for the associated HierarchyElementGeneral	1..1	PkCommon.RecordType
	responsibilityRoleAssignment	Responsibility role assignment	Responsibility role assignment for the associated HierarchyElementGeneral	0..*	PkCommon.ResponsibilityRoleAssignment

A.1.24.5 Attributes of the "PlaceHierarchy" package

Table A.77— Attributes of the "PlaceHierarchy" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
HierarchyElementGeneral	alias	Alias	Alternative name for the hierarchy element	0..*	PkCommon.MultilingualString
	childId	Child id	the identity of one or several child node directly related to this hierarchy element.	0..*	PkCommon.VersionedReference (plc:HierarchyElementGeneral)
	description	Description	User defined free-text name for the hierarchy element	0..1	PkCommon.MultilingualString
	layer	Layer	indicator of the position of this hierarchy element in the specific hierarchy, with the top of the hierarchy numbered layer 0.	1..1	PkCommon.NonNegativeInteger
	name	Name	User defined free-text name for the hierarchy element	1..1	PkCommon.MultilingualString
	operatorDefinedReference	Operator defined reference	Allows a data owner to associate to a data owner's internal location identification	0..1	PkCommon.VersionedReference (pkcmn:OperatorDefinedPlace)
	parentId	Parent id	the identity of a parent node in the next layer up of the hierarchy - for the hierarchy element at layer 0 no parent id shall be defined.	0..1	PkCommon.VersionedReference (plc:HierarchyElementGeneral)
	type	Type	identifies the type of the hierarchy element	1..1	Place.HierarchyElementTypeEnum
OccupancyLevel	occupancyIndicator	Occupancy indicator	User-defined occupancy indicator (e.g. red = occupied), referencing specified user defined code list	1..1	PkCommon.ReferencedCodeListEntry

A.1.25"PointLocation" package

A.1.25.1 Location of "PointLocation" package

The location of "PointLocation" package is:

— D2Payload/Extension/Parking/PkCommon/Location/PointLocation

A.1.25.2 Classes of the "PointLocation" package

Table A.78— Classes of the "PointLocation" package

Class name	Designation	Definition	Stereotype	Abstract
HeightCoordinate	Height coordinate	Third coordinate for points defined geodetically	D2Class	no
PointByCoordinates	Point by coordinates	A single point defined only by a coordinate set with an optional bearing direction.	D2Class	no
PointCoordinates	Point coordinates	A pair of planar coordinates defining the geodetic position of a single point using a defined Coordinate Reference System.	D2Class	no
PointLocation	Point location	Location representing a single geospatial point.	D2Class	no

A.1.25.3 Specializations of the "PointLocation" package

Table A.79— Specializations of the "PointLocation" package

Class name	Parent Class Name
PointLocation	PkCommon.Location

A.1.25.4 Associations of the "PointLocation" package

Table A.80— Associations of the "PointLocation" package

Class name	Association end	Designation	Definition	Multiplicity	Target
PointByCoordinates	pointCoordinates	Point coordinates	Point coordinates for the associated PointByCoordinates	1..1	PkCommon.PointCoordinates
PointCoordinates	heightCoordinate	Height coordinate	Height coordinate for the associated PointCoordinates	0..3	PkCommon.HeightCoordinate

Class name	Association end	Designation	Definition	Multiplicity	Target
PointLocation	openlrPointLocationReference	Openlr point location reference	Openlr point location reference for the associated PointLocation	0..1	PkCommon.OpenlrPointLocationReference
	pointByCoordinates	Point by coordinates	Point by coordinates for the associated PointLocation	0..1	PkCommon.PointByCoordinates
	geoJSONPoint	Geo j s o n point	Geo j s o n point for the associated PointLocation	0..1	PkCommon.GeoJSONPoint

A.1.25.5 Attributes of the "PointLocation" package

Table A.81— Attributes of the "PointLocation" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
HeightCoordinate	heightType	Height type	Type of measured height. When omitted, it is the ellipsoidal height.	0..1	PkCommon.HeightTypeEnum
	heightValue	Height value	Value in defined unit for the height measured vertically at to the planar coordinates the point corresponding. Note alteration from DATEXII definition.	1..1	PkCommon.MetresAsFloat
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	PkCommon.AngleInDegrees
PointCoordinates	epsgCode	Epsg code	code referencing a specific Coordinate Reference System in the EPSG (European Petroleum Survey Group) register	1..1	PkCommon.EPSGCode
	x	X	X coordinate in the defined Coordinate Referencing System indicated by the EPSG code	1..1	PkCommon.Float
	y	Y	Y coordinate in the defined Coordinate Referencing System indicated by the EPSG code	1..1	PkCommon.Float

A.1.26 "Quote" package

A.1.26.1 Location of "Quote" package

The location of "Quote" package is:

— D2Payload/Extension/Parking/Quote

A.1.26.2 Classes of the "Quote" package

Table A.82— Classes of the "Quote" package

Class name	Designation	Definition	Stereotype	Abstract
FinancialQuote	Financial quote	Class containing information on financial value of a Quote	D2Class	no
Identifiers	Identifiers	Class containing information referencing one rateTable and one related rightSpecification	D2Class	no
Option	Option	Class providing one option to a quote request. An option is a specific price option, a quote can have multiple price options presented.	D2VersionedIdentifiable	no
QuoteExpiration	Quote expiration	Class defining conditions indicating the end of the validity of a Quote	D2Class	no
QuoteRightRequest	Quote right request	class containing data elements required to request a quote for a new transaction	D2VersionedIdentifiable	no
QuoteRightResponse	Quote right response	class containing data to support response to request for quote for a new transaction	D2VersionedIdentifiable	no
QuoteSessionExtensionRequest	Quote session extension request	class containing detail required to initiate a request for a quote to extend an existing session	D2VersionedIdentifiable	no
QuoteSessionExtensionResponse	Quote session extension response	class containing data to support response to request for quote to extend an existing Session	D2VersionedIdentifiable	no
ReferencedRightSpecification	Referenced right specification	class to support reference to a RightSpecification	D2VersionedIdentifiable	no

A.1.26.3 Specializations of the "Quote" package

There are no defined specializations in the "Quote" package.

A.1.26.4 Associations of the "Quote" package

Table A.83— Associations of the "Quote" package

Class name	Association end	Designation	Definition	Multiplicity	Target
FinancialQuote	value	Value	The total monetary value associated with this Quote to be received by PLACE owner or operator	1..1	PkCommon.AmountInCurrency
Option	quoteExpiration	Quote expiration	Quote expiration for the associated Option	1..1	Quote.QuoteExpiration
	identifiers	Identifiers	Identifiers for the associated Option	1..*	Quote.Identifiers
	financialQuote	Financial quote	Financial quote for the associated Option	1..1	Quote.FinancialQuote
QuoteRightRequest	referencedRightSpecification	Referenced right specification	Referenced right specification for the associated QuoteRightRequest	1..*	Quote.ReferencedRightSpecification
	recordType	Record type	Record type for the associated QuoteRightRequest	0..1	PkCommon.RecordType
QuoteRightResponse	option	Option	Option for the associated QuoteRightResponse	0..*	Quote.Option
	recordType	Record type	Record type for the associated QuoteRightResponse	0..1	PkCommon.RecordType
QuoteSessionExtensionRequest	recordType	Record type	Record type for the associated QuoteSessionExtensionRequest	0..1	PkCommon.RecordType
QuoteSessionExtensionResponse	option	Option	Option for the associated QuoteSessionExtensionResponse	0..*	Quote.Option
	recordType	Record type	Record type for the associated QuoteSessionExtensionResponse	0..1	PkCommon.RecordType

A.1.26.5 Attributes of the "Quote" package

Table A.84— Attributes of the "Quote" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
FinancialQuote	serviceProvider	Service provider	Entity name of the service provider that is responsible for selling/collecting fees associated to the Quote.	0..1	PkCommon.VersionedReference (pkcmn:Organisation)
	taxIncluded	Tax included	Whether tax is included in monetary value, if yes (TRUE), if not (FALSE).	1..1	PkCommon.Boolean
	transactionId	Transaction id	Identifier for the transaction (e.g. reservation number, credit card transaction reference) as agreed upon by the two entities sharing data.	0..1	PkCommon.String
Identifiers	rateTableId	Rate table id	Reference to a specific identifiable versioned reference of a rate table	1..1	PkCommon.VersionedReference (pkrt:RateTable)
	rightSpecificationId	Right specification id	Reference to a specific identifiable versioned reference of a right specification	1..1	PkCommon.VersionedReference (pkrit:RightSpecification)
Option	elementId	Element id	Versioned Reference to a Place Hierarchy element	0..1	PkCommon.VersionedReference (plc:HierarchyElementGeneral)
	exact	Exact	indicates the supplied Option fully covers the time period requested	0..1	PkCommon.Boolean
QuoteExpiration	expiryValidUsagePeriod	Expiry valid usage period	defines a specific date/time that the Option and thus the FinancialQuote is valid	0..1	PkCommon.DateTime

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	firstComeFirstServed	First come first served	a Boolean value shows that the availability of an Option and thus FinancialQuote are available to the requester on a first come first served basis, with no assurance that the advertised RightSpecification will be available based on actual demand	1..1	PkCommon.Boolean
QuoteRightRequest	quoteEnd	Quote end	requested date/time for the end of a proposed new transaction (i.e. parking ending at 10pm on Friday)	0..1	PkCommon.DateTime
	quoteStart	Quote start	requested date/time for the start of a proposed new transaction (i.e. parking starting at 8am on Friday)	1..1	PkCommon.DateTime
	requestTime	Request time	date/time at which the request for a quote was made	1..1	PkCommon.DateTime
	timePeriod	Time period	requested duration for the proposed new transaction	0..*	PkCommon.Duration
QuoteRightResponse	quoteEnd	Quote end	date/time for the end of the proposed new transaction as defined in the option presented by the supplier	1..1	PkCommon.DateTime
	quoteRequestId	Quote request id	Versioned reference to an instance of QuoteRightRequest	1..1	PkCommon.VersionedReference (pkquo:QuoteRightRequest)
	quoteStart	Quote start	date/time for the start of the proposed new transaction as defined in the option presented by the supplier	1..1	PkCommon.DateTime
	reason	Reason	provides a reason if the QuoteRightRequest cannot be fulfilled	0..1	Quote.ResponseReasonEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	requestTime	Request time	date/time at which the request for a quote was recorded/registered by the supplier	1..1	PkCommon.DateTime
	responseTime	Response time	date/time at which the response is made by the supplier	1..1	PkCommon.DateTime
QuoteSessionExtensionRequest	quoteEnd	Quote end	proposed date/time at which the proposed extended Session would end	1..1	PkCommon.DateTime
	requestTime	Request time	reference date/time at which the request for a quote for a session extension is made	1..1	PkCommon.DateTime
	sessionId	Session id	Versioned reference to an instance of a Session	1..1	PkCommon.VersionedReference (pkses:Session)
	suppliedCredential	Supplied credential	Versioned reference to an instance of a supplied Credential	1..1	PkCommon.VersionedReference (pkrit:CredentialAssigned)
QuoteSessionExtensionResponse	quoteEnd	Quote end	Date/time of the revised session end time	1..1	PkCommon.DateTime
	reason	Reason	provides a reason if the QuoteSessionExtensionResponse cannot be fullfilled	0..1	Quote.QuoteRightResponseExtensionReasonEnum
	requestSessionExtensionId	Request session extension id	Versioned reference to an instance of QuoteSessionExtensionRequest	1..1	PkCommon.VersionedReference (pkquo:QuoteSessionExtensionRequest)
	requestTime	Request time	date/time at which the request for a quote was recorded/registered by the supplier	1..1	PkCommon.DateTime
	responseTime	Response time	date/time at which the response is made by the supplier	1..1	PkCommon.DateTime

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	sessionId	Session id	Versioned reference to an existing Session intended to be extended	1..1	PkCommon.VersionedReference (pkses:Session)
ReferencedRightSpecification	elementId	Element id	Reference to an element within the Parking Place Hierarchy	0..1	PkCommon.VersionedReference (plc:HierarchyElementGeneral)
	rightSpecificationId	Right specification id	Versioned reference to a RightSpecification	1..1	PkCommon.VersionedReference (pkrit:RightSpecification)

A.1.27"Rates" package

A.1.27.1 Location of "Rates" package

The location of "Rates" package is:

— D2Payload/Extension/Parking/Rates

A.1.27.2 Classes of the "Rates" package

Table A.85— Classes of the "Rates" package

Class name	Designation	Definition	Stereotype	Abstract
PerUnitInformation	Per unit information	Class containing information of the nature and delivery unit for a delivered substance, typically fuel of some nature.	D2Class	no
RateLine	Rate line	A specific rate element of a rate line collection within a specific rate table.	D2VersionedIdentifiable	no

Class name	Designation	Definition	Stereotype	Abstract
RateLineCollection	Rate line collection	A group of rate line elements that logically group together within one rate table, e.g. such as the rate lines for the different tiers of a time-based tier rate table.	D2VersionedIdentifiable	no
RateLineTax	Rate line tax	Class containing details of tax to be applied to a RateLine	D2Class	no
RateMatrix	Rate matrix	A collection of rate tables as supplied by the data supplier. These may relate to different locations.	D2VersionedIdentifiable	no
RateTable	Rate table	A specific set of rate charges relating to one or more locations and optionally one set of eligibility criteria.	D2VersionedIdentifiable	no
RelativeTimeRates	Relative time rates	A class supporting the specification of times for defining rate applicability that are relative to a defined referenceTimeStart of an event. (e.g. 2 hours from the start of an event)	D2Class	no
Surcharge	Surcharge	A class supporting the definition of surcharges that should be incorporated into a fee calculation within a rate table. An example is a convenience fee.	D2Class	no

A.1.27.3 Specializations of the "Rates" package

Table A.86— Specializations of the "Rates" package

Class name	Parent Class Name
RelativeTimeRates	Rates.RateLineCollection

A.1.27.4 Associations of the "Rates" package

Table A.87— Associations of the "Rates" package

Class name	Association end	Designation	Definition	Multiplicity	Target
RateLine	surcharge	Surcharge	Surcharge for the associated RateLine	0..*	Rates.Surcharge
	rateLineTax	Rate line tax	Rate line tax for the associated RateLine	0..*	Rates.RateLineTax
	perUnitInformation	Per unit information	Per unit information for the associated RateLine	0..1	Rates.PerUnitInformation

Class name	Association end	Designation	Definition	Multiplicity	Target
RateLineCollection	rateLine	Rate line	Rate line for the associated RateLineCollection	1..*	Rates.RateLine
RateMatrix	rateTable	Rate table	Rate table for the associated RateMatrix	1..*	Rates.RateTable
	recordType	Record type	Record type for the associated RateMatrix	1..1	PkCommon.RecordType
RateTable	rateLineCollection	Rate line collection	Rate line collection for the associated RateTable	1..*	Rates.RateLineCollection
	rateTableRecordUpdate	Rate table record update	Rate table record update for the associated RateTable	0..1	PkCommon.RecordType
	rateTableValidity	Rate table validity	Rate table validity for the associated RateTable	1..1	PkCommon.OverallPeriod

A.1.27.5 Attributes of the "Rates" package

Table A.88— Attributes of the "Rates" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
PerUnitInformation	deliverySubstance	Delivery substance	Multilingual text string providing the name of the substance being delivered.	1..1	PkCommon.MultilingualString
	deliveryUnit	Delivery unit	the unit measure for delivery of the defined substance	1..1	EnergyInfrastructure.DeliveryUnitEnum
RateLine	description	Description	free-text description associated with this rate line.	0..1	PkCommon.MultilingualString
	durationEnd	Duration end	If used, indicates the end time for the applicability of the specific rate line, generally with respect to the start of the parking or other mobility session. e.g. the end of a time-based tier charge rate.	0..1	PkCommon.Time
	durationStart	Duration start	If used, indicates the start time for the applicability of the specific rate line, generally with respect to the start of the parking or other mobility session. e.g. the start of a time-based tier charge rate.	0..1	PkCommon.Time

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	incrementPeriod	Increment period	the time period for incrementing the rate line charge. If set to the same as the duration of the period between the durationStart and durationEnd the increment will occur once per period, i.e. a flat rate time-based tier charge rate.	0..1	PkCommon.Duration
	maxValue	Max value	The maximum monetary amount to be applied in conjunction with use of this rate line collection, regardless of the actual calculated value of the rate line.	0..1	PkCommon.AmountOfMoney
	minValue	Min value	The minimum monetary amount to be applied in conjunction with use of this rate line collection, regardless of the actual calculated value of the rate line.	0..1	PkCommon.AmountOfMoney
	sequence	Sequence	the ordered sequence of this RateLine instance within the RateLineCollection. Used to define the order of operation of multiple rate lines. Typically used to ensure taxes and surcharges are applied correctly.	1..1	PkCommon.Integer
	type	Type	indicates the nature of the rate line	1..1	Rates.RateLineTypeEnum
	usageCondition	Usage condition	Indicates conditions on the use of this rate line	0..1	Rates.RateUsageConditionsTypeEnum
	value	Value	the value of the fee to be charged in respect of this rate line	1..1	PkCommon.AmountOfMoney
RateLineCollection	applicableCurrency	Applicable currency	The monetary currency that rates are specified in this rate line collection.	1..1	PkCommon.CurrencyCode
	endValidUsagePeriod	End valid usage period	the end time for the validity of this rate line collection	0..1	PkCommon.DateTime

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	maxTime	Max time	A maximum session duration to be applied to this rate line collection.	0..1	PkCommon.Duration
	maxValueCollection	Max value collection	The maximum monetary amount to be applied in conjunction with use of this rate line collection.	0..1	PkCommon.AmountOfMoney
	minTime	Min time	A minimum session duration to be applied to this rate line collection.	0..1	PkCommon.Duration
	minValueCollection	Min value collection	The minimum monetary amount to be applied in conjunction with use of this rate line collection.	0..1	PkCommon.AmountOfMoney
	relativeTimes	Relative times	[TRUE] Indicates whether times relative to the start of an external event are used as the basis for rate calculation. [FALSE] indicates that rate calculation definitions are based on local or UTC times (for example the duration of a parking session).	1..1	PkCommon.Boolean
	resetTime	Reset time	Time that rate resets. Example a rate table that charges $2 per hour with a max value collection of $10, resets at 2am. At 2 am the $2 per hour fee would start to charge until the $10 is reached.	0..1	PkCommon.Time
	sequence	Sequence	An indicator giving the place in sequence of this rate line collection	1..1	PkCommon.Integer
	startValidUsagePeriod	Start valid usage period	the start time for the validity of this rate line collection	1..1	PkCommon.DateTime
	taxIncluded	Tax included	[TRUE] Indication that tax to be applied is included within the total rate associated with this rate line collection. [FALSE] indicates that the tax is added additionally to the total.	1..1	PkCommon.Boolean
	taxRate	Tax rate	The percentage rate of tax to be applied.	0..1	PkCommon.Percentage

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	taxValue	Tax value	The monetary amount of tax to be applied.	0..1	PkCommon.AmountOfMoney
RateLineTax	labelForDisplay	Label for display	Free-text for display on a receipt and/or in a user interface	0..1	PkCommon.MultilingualString
	taxIncluded	Tax included	[TRUE] Indication that tax to be applied is included within the total rate associated with this rate line. [FALSE] indicates that the tax is added additionally to the total.	1..1	PkCommon.Boolean
	taxRate	Tax rate	The percentage rate of tax to be applied.	0..1	PkCommon.Percentage
	taxValue	Tax value	The monetary amount of tax to be applied.	0..1	PkCommon.AmountOfMoney
	triggerDescription	Trigger description	Free-text definition of boundary condition setting applicability of the tax	0..1	PkCommon.MultilingualString
	triggerType	Trigger type	Nature of the use of trigger	0..1	Rates.TriggerTypeEnum
RateMatrix	description	Description	supplier-defined free-text description for the rate matrix	0..1	PkCommon.MultilingualString
	name	Name	supplier-defined name for the rate matrix	0..1	PkCommon.MultilingualString
	versionTime	Version time	Timestamp indicating the issuance of this rate matrix	1..1	PkCommon.DateTime
RateTable	additionalInformation	Additional information	URI locator for supplementary additional information concerning use of the rate table	0..1	PkCommon.Url
	availability	Availability	Availability of Rate to the public.	1..1	Rates.RateAvailabilityTypeEnum
	name	Name	Name of the Rate Table	1..1	PkCommon.MultilingualString
	rateSupersedeLink	Rate supersede link	Identify the rate table that this rate table supersedes. Temporarily supersedes the identified rate table. Use the Rate expiration times to define duration.	0..1	PkCommon.VersionedReference (pkrt:RateTable)

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	responsibleParty	Responsible party	Entity responsible for fee collection. Identifies the entity that actually collects payment (e.g. mobile payment provider, online reservation firm, on-site operations)	0..1	PkCommon.VersionedReference (pkcmn:Organisation)
	type	Type	Defines the type of rate in use.	0..1	Rates.RateTypeEnum
	validation	Validation	Are validations accepted when using this rate table? [TRUE] = validations can be applied to transactions using this rate table; [FALSE] validations cannot be applicated to transactions using this rate table.	0..1	PkCommon.Boolean
RelativeTimeRates	referenceTimeEnd	Reference time end	Event-related reference end time	0..1	PkCommon.DateTime
	referenceTimeStart	Reference time start	Event-related reference start time	0..1	PkCommon.DateTime
Surcharge	idCode	Id code	Unique cost code identifier, potentially agreed bi-laterally between data supplier and data receiver	0..1	PkCommon.String
	labelForDisplay	Label for display	Free-text for display on a receipt and/or in a user interface	0..1	PkCommon.MultilingualString
	rate	Rate	the percentage rate surcharge to be applied	0..1	PkCommon.Percentage
	refund	Refund	indicates the nature of the refund of the surcharge that is available. Can the surcharge be refunded?	0..1	Rates.RefundTypeEnum
	triggerDescription	Trigger description	Free-text definition of boundary condition setting applicability of the surcharge value.	0..1	PkCommon.MultilingualString
	triggerType	Trigger type	Nature of the use of trigger	0..1	Rates.TriggerTypeEnum
	type	Type	indicates the nature of the surcharge to be applied	1..1	Rates.SurchargeTypeEnum
	value	Value	the monetary amount of the surcharge	0..1	PkCommon.AmountOfMoney

A.1.28 "Right" package

A.1.28.1 Location of "Right" package

The location of "Right" package is:

— D2Payload/Extension/Parking/Right

A.1.28.2 Classes of the "Right" package

Table A.89— Classes of the "Right" package

Class name	Designation	Definition	Stereotype	Abstract
AssignedRight	Assigned right	AssignedRight indicates the granting of a specific RightSpecification to a specific RightHolder, and indicates one instance of a planned use of the Right.	D2VersionedIdentifiable	no
Credential	Credential	Contains details of credential which is a form of trusted proof of permission, status, etc. Various forms exist	D2Identifiable	no
CredentialAssigned	Credential assigned	Information concerning a specific credential that is used for verification for one AssignedRight. Specialisation of a general credential.	D2VersionedIdentifiable	no
CustomerCredential	Customer credential	Details of a credential identifying an individual or organisation as a customer user.	D2Identifiable	no
HolderCredential	Holder credential	Details of a generic credential held by a holder. A holder can be a vehicle or a specific individual or entity allowed to transfer credential to various vehicles.	D2Identifiable	no
MonetaryValue	Monetary value	Lightweight record of the monetary financial value of the associated AssignedRight (temporary)	D2Class	no
MonetaryValueLine	Monetary value line	Individual line item for a payment for associated AssignedRight (temporary)	D2VersionedIdentifiable	no
OtherCredential	Other credential	Details of a credential for identification, not for use in connection with a specific vehicle or customer.	D2Identifiable	no

Class name	Designation	Definition	Stereotype	Abstract
Payment	Payment	Lightweight record of payment for associated AssignedRight (temporary)	D2VersionedIdentifiable	no
PaymentAssignment	Payment assignment	Record of association of a payment to an AssignedRight	D2VersionedIdentifiable	no
PaymentLine	Payment line	Individual line item for a payment for associated AssignedRight (temporary)	D2VersionedIdentifiable	no
PlannedUse	Planned use	A specific future instance when an AssignedRight is to be used/initiated. Example is a reservation to park at a future date/time.	D2Class	no
RateDiscount	Rate discount	Class defining discount rates to be applied to a RateTable	D2Class	no
ReferenceQuoteExtension	Reference quote extension	Class providing a versioned reference to a quote for a session extension	D2Class	no
ReferenceQuoteNew	Reference quote new	Class providing a versioned reference to a new quote	D2Class	no
ReferenceToQuote	Reference to quote	Class defining a reference to a specific Quote	D2Class	no
RightHolder	Right holder	Information concerning a specific holder of a granted right, corresponding to a defined RightSpecification.	D2VersionedIdentifiable	no
RightPool	Right pool	The number of AssignedRights that are available for use, in use, or intended for use within a specific RightSpecification in specific date/time periods by a specific AssignedRightIssuer	D2VersionedIdentifiable	no
RightSpecification	Right specification	A Right Specification explicitly defines what the owner/manager of a Place is granting specific users or vehicles the ability to do (e.g. park, delivery, pick up).	D2VersionedIdentifiable	no
VehicleCredential	Vehicle credential	Details of a credential identifying a specific vehicle.	D2Identifiable	no

Specializations of the "Right" package

Table A.90— Specializations of the "Right" package

Class name	Parent Class Name
CredentialAssigned	Right.Credential
CustomerCredential	Right.HolderCredential
OtherCredential	Right.HolderCredential
ReferenceQuoteExtension	Right.ReferenceToQuote
ReferenceQuoteNew	Right.ReferenceToQuote
VehicleCredential	Right.HolderCredential

A.1.28.3 Associations of the "Right" package

Table A.91— Associations of the "Right" package

Class name	Association end	Designation	Definition	Multiplicity	Target
AssignedRight	referenceToQuote	Reference to quote	Reference to quote for the associated AssignedRight	0..1	Right.ReferenceToQuote
	plannedUse	Planned use	Planned use for the associated AssignedRight	0..*	Right.PlannedUse
	monetaryValue	Monetary value	Monetary value for the associated AssignedRight	0..1	Right.MonetaryValue
	remainingValue	Remaining value	The monetary value unused of the Assigned Right held by the RightHolder.	0..1	PkCommon.AmountInCurrency
	totalRightValue	Total right value	The total monetary value of the Assigned Right held by the RightHolder.	0..1	PkCommon.AmountInCurrency
HolderCredential	credentialAssigned	Credential assigned	Credential assigned for the associated HolderCredential	1..1	Right.CredentialAssigned

Class name	Association end	Designation	Definition	Multiplicity	Target
MonetaryValue	monetaryValueLine	Monetary value line	Monetary value line for the associated MonetaryValue	1..*	Right.MonetaryValueLine
MonetaryValue Line	value	Value	Value for the associated MonetaryValueLine	1..1	PkCommon.AmountInCurrency
Payment	paymentLine	Payment line	Payment line for the associated Payment	1..*	Right.PaymentLine
PaymentLine	value	Value	Value for the associated PaymentLine	1..1	PkCommon.AmountInCurrency
PlannedUse	credentialAssigned	Credential assigned	Credential assigned for the associated PlannedUse	1..*	Right.CredentialAssigned
RateDiscount	fixedValue	Fixed value	Fixed value discount (-) or surcharge (+) to be applied to all values in the referenced RateTable	0..1	PkCommon.AmountInCurrency
RightHolder	holderCredential	Holder credential	Holder credential for the associated RightHolder	0..*	Right.HolderCredential
	assignedRight	Assigned right	Assigned right for the associated RightHolder	0..*	Right.AssignedRight
RightPool	rightHolder	Right holder	Right holder for the associated RightPool	0..*	Right.RightHolder
	assignedRight	Assigned right	Assigned right for the associated RightPool	0..*	Right.AssignedRight
	rightPoolValidity	Right pool validity	Right pool validity for the associated RightPool	0..1	PkCommon.OverallPeriod
RightSpecification	rightPool	Right pool	Right pool for the associated RightSpecification	0..*	Right.RightPool
	credential	Credential	Credential for the associated RightSpecification	0..*	Right.Credential
	recordType	Record type	Record type for the associated RightSpecification	1..1	PkCommon.RecordType

Class name	Association end	Designation	Definition	Multiplicity	Target
	rightSpecificationValidity	Right specification validity	Right specification validity for the associated RightSpecification	1..1	PkCommon.OverallPeriod

A.1.28.4 Attributes of the "Right" package

Table A.92— Attributes of the "Right" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
AssignedRight	endValidUsagePeriod	End valid usage period	The date/time when the specific AssignedRight expires, and is no longer available for use. Decimal minutes	0..1	PkCommon.DateTime
	instancesAvailable	Instances available	The total number of instances under a specified RightSpecification that are available for use.	0..1	PkCommon.Integer
	instancesUsed	Instances used	The total number of instances under a specified RightSpecification that have been used.	0..1	PkCommon.Integer
	issuanceTime	Issuance time	The date/time that a specific AssignedRight was issued.	0..1	PkCommon.DateTime
	issueMethod	Issue method	The method used for issuing a specified Right.	0..1	Right.IssueMethodEnum
	issuer	Issuer	The identity of the issuer of the AssignedRight.	0..1	PkCommon.Reference
	minutesAvailable	Minutes available	Number of minutes under a specified Assigned Right that are available for use. Decimal minutes. Remaining time.	0..1	PkCommon.Float

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	minutesUsed	Minutes used	Number of minutes under a specified Assigned Right that have been used. Decimal minutes	0..1	PkCommon.Float
	totalInstances	Total instances	The total number of instances under a specified Assigned Right that have been issued.	0..1	PkCommon.Integer
	totalMinutes	Total minutes	Number of minutes under a specified Assigned Right that have been issued initially. Decimal minutes	0..1	PkCommon.Float
Credential	additionalInformation	Additional information	Free-text description containing additional information about the credential	0..1	PkCommon.String
	type	Type	Type of credential	1..1	Right.CredentialTypeEnum
CredentialAssigned	issuer	Issuer	Identity of the credential issuer.	1..1	PkCommon.VersionedReference (pkcmn:Organisation)
	localIdentifier	Local identifier	User defined identifier issued by credential issuer.	0..1	PkCommon.String
MonetaryValue	serviceProvider	Service provider	Entity name of the service provider responsible for selling/collecting fees associated to the session or Assigned Right.	1..1	PkCommon.VersionedReference (pkcmn:Organisation)
	taxIncluded	Tax included	Whether tax included in monetary value, if yes (TRUE), if not (FALSE).	1..1	PkCommon.Boolean
MonetaryValueLine	idCode	Id code	Unique cost code identifier, potentially agreed bi-laterally between data supplier and data receiver	0..1	PkCommon.String
	paymentType	Payment type	Indicates the nature of the payment identified in a specific monetary value line.	1..1	Right.PaymentTypeEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
OtherCredential	additionalInformation	Additional information	Free-text description containing additional information about the credential	0..1	PkCommon.String
	type	Type	A type of credential as indicated in the CredentialTypeEnum list.	1..1	Right.CredentialTypeEnum
Payment	dateCollected	Date collected	Date / time that the payment related to this financial transaction is documented as being paid and collected	0..1	PkCommon.DateTime
	endPeriodCovered	End period covered	Date / time identifying the end of period that the payment covers	0..1	PkCommon.DateTime
	idCode	Id code	Unique cost code identifier, potentially agreed bi-laterally between data supplier and data receiver	0..1	PkCommon.String
	serviceProvider	Service provider	Entity name of the service provider that is responsible for selling/collecting fees associated to the AssignedRight	1..1	PkCommon.VersionedReference (pkcmn:Organisation)
	startPeriodCovered	Start Period covered	Date / time identifying the start of period that the payment covers	0..1	PkCommon.DateTime
	transactionID	Transaction id	Identifier for the transaction (e.g. reservation number, credit card transaction reference) as agreed upon by the two entities sharing data.	0..1	PkCommon.String
PaymentAssignment	assignedFrom	Assigned from	Party (entity) indicated as the origin of a payment	1..1	PkCommon.VersionedReference
	assignedTo	Assigned to	Party (entity) indicated as the recipient of a payment	1..1	PkCommon.VersionedReference
	assignmentID	Assignment id	Identifier for an association between AssignedRight and Payment	0..1	PkCommon.String

Class name	Attribute name	Designation	Definition	Multiplicity	Type
PaymentLine	idCode	Id code	Unique cost code identifier, potentially agreed bi-laterally between data supplier and data receiver	0..1	PkCommon.String
	identifierID	Identifier i d	Identifier for the transaction (e.g. reservation number, credit card transaction reference) as agreed upon by the two entities sharing data.	0..1	PkCommon.String
	paymentType	Payment type	Indicates the nature of the payment made against an AssignedRight.	1..1	Right.PaymentTypeEnum
PlannedUse	cancelTime	Cancel time	Date/time instance when a specific Planned Use has been cancelled by the right holder.	0..1	PkCommon.DateTime
	estimatedEnd	Estimated end	Date/time instance when a Planned Use in considered to end, and no longer is available for use.	0..1	PkCommon.DateTime
	estimatedStart	Estimated start	Date/time instance when a Planned Use is considered to start, and be available for use.	1..1	PkCommon.DateTime
	expiryValidUsagePeriod	Expiry valid usage period	Date/time instance when a Planned Use expires, and is no longer available for use.	0..1	PkCommon.DateTime
	issuanceTime	Issuance time	Date/time when a specific planned use instance was issued.	0..1	PkCommon.DateTime
	issueMethod	Issue method	The method used to issue the specific PlannedUse.	0..1	Right.IssueMethodEnum
	issuer	Issuer	Identification of the issuer of a specific PlannedUse.	0..1	PkCommon.VersionedReference (pkcmn:Organisation)
RateDiscount	discountRate	Discount rate	proportionate discount (-) or premium (+) to be applied to all values in the referenced RateTable	0..1	PkCommon.Percentage

Class name	Attribute name	Designation	Definition	Multiplicity	Type
ReferenceQuoteExtension	optionId	Option id	Versioned reference to a specified Option within an identifiable Quote	1..1	PkCommon.VersionedReference (pkquo:Option)
	quoteResponseId	Quote response id	Versioned reference to a specified Quote	1..1	PkCommon.VersionedReference (pkquo:QuoteSessionExtensionResponse)
ReferenceQuoteNew	optionId	Option id	Versioned reference to a specified Option within an identifiable Quote	1..1	PkCommon.VersionedReference (pkquo:Option)
	quoteResponseId	Quote response id	Versioned reference to a specified Quote	1..1	PkCommon.VersionedReference (pkquo:QuoteRightResponse)
RightPool	assignedRightsIssuer	Assigned rights issuer	Identification of the issuer of an AssignedRight	1..1	PkCommon.VersionedReference (pkcmn:Organisation)
	availableAssignedRights	Available assigned rights	The number of Assigned Rights that have been issued by the Rights creator to a specific Rights Issuer that are still available to be assigned.	1..1	PkCommon.Integer
	distributedAssignedRights	Distributed assigned rights	The number of Assigned Rights that have been issued by the Rights creator to a specific Rights Issuer.	1..1	PkCommon.Integer
	qtyRelation	Qty relation	An integer defining the number of actions or parking included in a RightSpecification.	1..1	PkCommon.Integer
RightSpecification	description	Description	Free-text description of a RightSpecification.	0..*	PkCommon.MultilingualString

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	elementId	Element id	Reference to an element within the Parking Place Hierarchy	1..*	PkCommon.VersionedReference (plc:HierarchyElementGeneral)
	financialReference	Financial reference	Creater defined free-text reference to financial transactions associated to the specific Right Specification.	0..1	PkCommon.String
	issuer	Issuer	a versioned reference identifying the entity issuing the RightsSpecification.	1..1	PkCommon.VersionedReference (pkcmn:Organisation)
	transferable	Transferable	indication that the RightSpecification is available to be transferred between Assigned Right Holder(s) or users	1..1	PkCommon.Boolean
	transferableConditions	Transferable conditions	statement of the conditions under which a RightSpecification may be transferred	0..1	PkCommon.MultilingualString
	type	Type	Defines the type of Right Specification.	0..1	Right.RightTypeEnum

A.1.29 "Road" package

A.1.29.1 Location of "Road" package

The location of "Road" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy/IdentifiedArea/VehicularAccess/Road

A.1.29.2 Classes of the "Road" package

Table A.93— Classes of the "Road" package

Class name	Designation	Definition	Stereotype	Abstract
Road	Road	Identification of a road by its name,identifier,type ...	D2Class	no
RoadNode	Road node	A road node as part of the specialised road identified by the name of a junction on this road.	D2Class	no

A.1.29.3 Specializations of the "Road" package

Table A.94— Specializations of the "Road" package

Class name	Parent Class Name
RoadNode	Place.Road

A.1.29.4 Associations of the "Road" package

There are no defined associations in the "Road" package.

A.1.29.5 Attributes of the "Road" package

Table A.95— Attributes of the "Road" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Road	distanceToThisRoad	Distance to this road	Distance to the road (from the calling component/object).	0..1	PkCommon.LinearDimension
	nameOfRoad	Name of road	The name of the road.	0..1	PkCommon.MultilingualString
	roadDestination	Road destination	Name of some city, area, compass direction or other identification the road is leading to (to determine the direction in question).	0..*	PkCommon.MultilingualString
	roadIdentifier	Road identifier	Identifier/number of the road.	0..1	PkCommon.MultilingualString
	roadOrigination	Road origination	Name of some city, area, compass direction or other identification this road comes from.	0..*	PkCommon.MultilingualString
	typeOfRoad	Type of road	Type of the road.	0..1	Place.RoadTypeEnum
RoadNode	junctionName	Junction name	Name of the junction.	1..1	PkCommon.MultilingualString

A.1.30"Session" package

A.1.30.1 Location of "Session" package

The location of "Session" package is:

— D2Payload/Extension/Parking/Session

A.1.30.2 Classes of the "Session" package

Table A.96— Classes of the "Session" package

Class name	Designation	Definition	Stereotype	Abstract

Segment	Segment	An elementary portion of a Session, that relates to the use of one AssignRight, one RateTable and one Rate, if applicable.	D2VersionedIdentifiable	no
Session	Session	A Session describes the actual act of using a Right Specification (or other use of a Right Specification), and may contain multiple segments. Example parking session may start at 9:01am and end at 3:23pm	D2VersionedIdentifiable	no

A.1.30.3 Specializations of the "Session" package

There are no defined specializations in the "Session" package.

A.1.30.4 Associations of the "Session" package

Table A.97— Associations of the "Session" package

Class name	Association end	Designation	Definition	Multiplicity	Target
Session	segment	Segment	Segment for the associated Session	1..*	Session.Segment
	recordType	Record type	Record type for the associated Session	1..1	PkCommon.RecordType
	identifiedCredential	Identified credential	Identified credential for the associated Session	1..*	Right.Credential
	identifiedVehicle	Identified vehicle	Identified vehicle for the associated Session	0..1	PkCommon.VehicleAncillaryIdentification

A.1.30.5 Attributes of the "Session" package

Table A.98— Attributes of the "Session" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Segment	actualEnd	Actual end	The date/time of the end of the segment.	0..1	PkCommon.DateTime
	actualStart	Actual start	The date/time of the start of the segment.	1..1	PkCommon.DateTime
	assignedRightId	Assigned right id	Identification of a specific AssignedRight that is associated to the segment.	0..1	PkCommon.VersionedReference (pkrit:AssignedRight)
	credentialId	Credential id	Specific credential identification associated to the segment.	0..1	PkCommon.Reference (pkrit:Credential)
	notes	Notes	Free-text description associated to the segment.	0..*	PkCommon.MultilingualString
	spaceId	Space id	Identification of a specific space, if one is associated with the segment.	0..1	PkCommon.Reference
	validationId	Validation id	Specific validation identification associated to the segment.	0..1	PkCommon.String
	validationType	Validation type	The form of validation (the nature of credential) that is used in conjunction with the specific segment.	1..*	Right.CredentialTypeEnum
Session	actualEnd	Actual end	The date/time of the end of the session.	0..1	PkCommon.DateTime
	actualStart	Actual start	The date/time of the start of the session.	1..1	PkCommon.DateTime
	elementId	Element id	Reference to an element within the Place Hierarchy	0..1	PkCommon.VersionedReference (plc:HierarchyElementGeneral)
	initiator	Initiator	Identification of the party initiating the session.	1..1	PkCommon.VersionedReference (pkcmn:Organisation)

A.1.31"Space" package

A.1.31.1 Location of "Space" package

The location of "Space" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy/Space

A.1.31.2 Classes of the "Space" package

Table A.99— Classes of the "Space" package

Class name	Designation	Definition	Stereotype	Abstract
Dimensions	Dimensions	A component that provides dimension information concerning an identifiable space.	D2Class	no
Space	Space	a single space for parking or other mobility related purposes, usually designed for one vehicle, which may, but not necessarily, be denoted by painted or other road surface marker	D2Class	no

A.1.31.3 Specializations of the "Space" package

Table A.100— Specializations of the "Space" package

Class name	Parent Class Name
Space	Place.HierarchyElementGeneral

A.1.31.4 Associations of the "Space" package

Table A.101— Associations of the "Space" package

Class name	Association end	Designation	Definition	Multiplicity	Target
Space	operatingRestriction	Operating restriction	Operating restriction for the associated Space	0..*	Place.OperatingRestriction

Class name	Association end	Designation	Definition	Multiplicity	Target
	accessToSpaceDimensions	Access to space dimensions	Access to space dimensions for the associated Space	0..1	Place.DimensionsMaximum Dimensions
	indicativePointLocation	Indicative point location	Indicative point location for the associated Space	0..1	PkCommon.PointLocation
	spaceBoundedZone	Space bounded zone	Space bounded zone for the associated Space	0..1	PkCommon.AreaLocation
	spaceMaximumUseableDimensions	Space maximum useable dimensions	Space maximum useable dimensions for the associated Space	0..1	Place.MaximumDimensions Dimensions

A.1.31.5 Attributes of the "Space" package

Table A.102— Attributes of the "Space" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Dimensions	area	Area	The area measured in square metres, that is available for some specific purpose.	0..1	PkCommon.AreaDimension
	height	Height	Minimum declared clearance height.	0..1	PkCommon.LinearDimension
	length	Length	Minimum declared clearance length.	0..1	PkCommon.LinearDimension
	weight	Weight	Weight limit for the space.	0..1	PkCommon.WeightDimension
	width	Width	Minimum declared clearance width.	0..1	PkCommon.LinearDimension
Space	detection	Detection	indicates the form of detection that is used to determine space occupancy	0..1	PkCommon.ParkingSpaceOccupancyDetectionEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	externalIdentifier	External identifier	given provided supplied identifier for a parking space (typically also used to identify the space in physical world – e.g. space #23such as written in the space)	1..1	PkCommon.String

A.1.32"SpecificArea" package

A.1.32.1 Location of "SpecificArea" package

The location of "SpecificArea" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy/IdentifiedArea/SpecificArea

A.1.32.2 Classes of the "SpecificArea" package

Table A.103— Classes of the "SpecificArea" package

Class name	Designation	Definition	Stereotype	Abstract
SpecificArea	Specific area	An identifiable discrete bounded geographic zone that shares common characteristics and that may be used for a function other than vehicular access	D2Class	no

A.1.32.3 Specializations of the "SpecificArea" package

Table A.104— Specializations of the "SpecificArea" package

Class name	Parent Class Name
SpecificArea	Place.IdentifiedArea

A.1.32.4 Associations of the "SpecificArea" package

Table A.105— Associations of the "SpecificArea" package

Class name	Association end	Designation	Definition	Multiplicity	Target
SpecificArea	characteristics	Characteristics	Characteristics for the associated SpecificArea	0..1	Place.Characteristics

A.1.32.5 Attributes of the "SpecificArea" package

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

A.1.33 "SubplaceElement" package

A.1.33.1 Location of "SubplaceElement" package

The location of "SubplaceElement" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy/SubplaceElement

A.1.33.2 Classes of the "SubplaceElement" package

Table A.106— Classes of the "SubplaceElement" package

Class name	Designation	Definition	Stereotype	Abstract
SubplaceElement	Subplace element	a sub-division of a place for the convenience of the operator to segment the place and identify varied uses for parking and mobility related operations or other purposes	D2Class	no

A.1.33.3 Specializations of the "SubplaceElement" package

Table A.107— Specializations of the "SubplaceElement" package

Class name	Parent Class Name
SubplaceElement	Place.HierarchyElementGeneral

Associations of the "SubplaceElement" package

Table A.108— Associations of the "SubplaceElement" package

Class name	Association end	Designation	Definition	Multiplicity	Target
SubplaceElement	commonComponents	Common components	Common components for the associated SubplaceElement	0..1	Place.CommonComponents
	elementAreaLocation	Element area location	Element area location for the associated SubplaceElement	0..*	PkCommon.AreaLocation
	elementStreetAddress	Element street address	Element street address for the associated SubplaceElement	0..*	PkCommon.Address
	notionalElementLocation	Notional element location	Notional element location for the associated SubplaceElement	0..*	PkCommon.PointLocation

A.1.33.4 Attributes of the "SubplaceElement" package

Table A.109— Attributes of the "SubplaceElement" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
SubplaceElement	subplaceType	Subplace type	Subplace element type.	0..1	Place.ElementDescriptorEnum

A.1.34"SupplementalFacility" package

A.1.34.1 Location of "SupplementalFacility" package

The location of "SupplementalFacility" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy/IdentifiedArea/SupplementalFacility

A.1.34.2 Classes of the "SupplementalFacility" package

Table A.110— Classes of the "SupplementalFacility" package

Class name	Designation	Definition	Stereotype	Abstract
SupplementalEquipment	Supplemental equipment	One type of supplemental equipment, which is available on some site, for example on a rest area.	D2Class	no
SupplementalFacility	Supplemental facility	One type of supplemental facility which can be supplemental equipment or a supplemental service facility.	D2Class	yes
SupplementalServiceFacility	Supplemental service facility	One type of supplemental service facility. You can specify the number of this service facility type (e.g. 5 restaurants) as well as the number of subitems (e.g. 200 restaurant places).	D2Class	no

A.1.34.3 Specializations of the "SupplementalFacility" package

Table A.111— Specializations of the "SupplementalFacility" package

Class name	Parent Class Name
SupplementalEquipment	Place.SupplementalFacility
SupplementalFacility	Place.IdentifiedArea
SupplementalServiceFacility	Place.SupplementalFacility

A.1.34.4 Associations of the "SupplementalFacility" package

Table A.112— Associations of the "SupplementalFacility" package

Class name	Association end	Designation	Definition	Multiplicity	Target
SuppleentalEquipment	refillPoint	Refill point	Refill point for the associated SupplementalEquipment	0..*	EnergyInfrastructure.RefillPoint

A.1.34.5 Attributes of the "SupplementalFacility" package

Table A.113— Attributes of the "SupplementalFacility" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
SupplementalEquipment	equipmentType	Equipment type	One type of equipment.	1..1	Place.EquipmentTypeEnum
SupplementalFacility	accessibility	Accessibility	Information on accessibility, easements and marking for handicapped people.	0..*	Place.AccessibilityEnum
	additionalDescription	Additional description	Provides an additional description.	0..1	PkCommon.MultilingualString
	applicableForUser	Applicable for user	Limitation to a set of special users.	0..*	Place.UserTypeEnum
	comment	Comment	A free text comment that can be used by the operator to convey un-coded observations/information.	0..1	PkCommon.MultilingualString
	externalIdentifier	External identifier	An external identifier for the supplemental facility, e.g. an inventory number. This attribute has an unbounded multiplicity to support identifiers for multiple occurrences of this element.	0..*	PkCommon.String
	nameOrBrand	Name or brand	Name or brand of the supplemental facility, e.g. brand of petrol station, name of the WC-Service etc.	0..1	PkCommon.MultilingualString
	otherSupplementalFacility	Other supplemental facility	Any other supplemental facility if enumeration literal 'other' is used.	0..1	PkCommon.MultilingualString
	photoUrl	Photo URL	Specifies a Universal resource locator (URL) at which a photo of the supplemental facility can be found.	0..1	PkCommon.Url

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	quantity	Quantity	Number of the supplemental facility (e.g. number of toilets, restaurants, park & ride places, etc.) with respect to given restrictions. Dynamic overridable.	0..1	PkCommon.NonNegativeInteger
	regularlyCleaned	Regularly cleaned	Indication, if the supplemental facility is cleaned on a regular basis.	0..1	PkCommon.Boolean
	rightSpecificationId	Right specification id	Specific hierarchy element associated to this Supplementary Facility	0..*	PkCommon.VersionedReference
	specificallyReferencePlace	Specifically reference place	Identifier to an identifiable element in the Place hierarchy.	0..*	PkCommon.VersionedReference
	supplementalFacilityIndex	Supplemental facility index	An index to link this supplemental facility between the static and dynamic publications.	1..1	PkCommon.Integer
SupplementalServiceFacility	distanceFromOriginFacility	Distance from origin facility	Approximate distance (given in metres) between this supplemental facility and some origin facility to which it is clearly related (typically a larger facility, e.g. a parking site).	0..1	PkCommon.MetresAsNonNegativeInteger
	numberOfSubitems	Number of subitems	The quantity of sub items to this service facility type, e.g. the total number of restaurant places or fuel dispensers etc.	0..1	PkCommon.NonNegativeInteger
	serviceFacilityType	Service facility type	One type of service.	1..1	Place.ServiceFacilityTypeEnum

A.1.35"Supply" package

A.1.35.1 Location of "Supply" package

The location of "Supply" package is:

— D2Payload/Extension/Parking/Occupancy/Supply

A.1.35.2 Classes of the "Supply" package

Table A.114— Classes of the "Supply" package

Class name	Designation	Definition	Stereotype	Abstract
Supply	Supply	A class defining concepts relating the parameters of the supply of parking or others uses in a Place. This is the total number of spaces usable for parking or other mobility operations. It can be defined as demarcated spaces or non-demarcated.	D2Class	no

A.1.35.3 Specializations of the "Supply" package

There are no defined specializations in the "Supply" package.

Associations of the "Supply" package

Table A.115— Associations of the "Supply" package

Class name	Association end	Designation	Definition	Multiplicity	Target
Supply	space	Space	Space for the associated Supply	0..*	Place.Space
	recordType	Record type	Record type for the associated Supply	1..1	PkCommon.RecordType

A.1.35.4 Attributes of the "Supply" package

Table A.116— Attributes of the "Supply" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Supply	elementId	Element id	Reference to an element within the Parking Place Hierarchy	1..1	PkCommon.VersionedReference (plc:HierarchyElementGeneral)
	endValidUsagePeriod	End valid usage period	Valid end date/time for the supply	0..1	PkCommon.DateTime
	quantity	Quantity	Indicates the numeric value of available parking or other space uses.	1..1	PkCommon.Integer
	startValidUsagePeriod	Start valid usage period	Valid start date/time for the supply	0..1	PkCommon.DateTime
	viewType	View type	Indicates the nature of the supply view that is being provided, as defined by the supply view type.	1..1	Occupancy.SupplyViewTypeEnum

A.1.36 "Times" package

A.1.36.1 Location of "Times" package

The location of "Times" package is:

— D2Payload/Extension/Parking/PkCommon/Times

A.1.36.2 Classes of the "Times" package

Table A.117— Classes of the "Times" package

Class name	Designation	Definition	Stereotype	Abstract
AccessAndEgress	Access and egress	Time periods specified for access to or from a parking facility.	D2Class	no

Class name	Designation	Definition	Stereotype	Abstract
EntranceOpenTime	Entrance open time	Specification of periods of times when parking entrance(s) are open for vehicle movements.	D2Class	no
ExitOpenTime	Exit open time	Specification of periods of times when parking exit(s) are open for vehicle movements.	D2Class	no
OperatingTime	Operating time	The times of operation of a parking facility - this is the time that the facility operates, not times of accessibility	D2Class	no
Times	Times	Defines forms of time period for specific purposes.	D2Class	no

A.1.36.3 Specializations of the "Times" package

There are no defined specializations in the "Times" package.

A.1.36.4 Associations of the "Times" package

Table A.118— Associations of the "Times" package

Class name	Association end	Designation	Definition	Multiplicity	Target
AccessAndEgress	validity	Validity	Validity for the associated AccessAndEgress	0..1	PkCommon.Validity
	entranceOpenTime	Entrance open time	Entrance open time for the associated AccessAndEgress	0..*	PkCommon.EntranceOpenTime
	exitOpenTime	Exit open time	Exit open time for the associated AccessAndEgress	0..*	PkCommon.ExitOpenTime
EntranceOpenTime	validity	Validity	Validity for the associated EntranceOpenTime	0..1	PkCommon.Validity
ExitOpenTime	validity	Validity	Validity for the associated ExitOpenTime	0..1	PkCommon.Validity
OperatingTime	validity	Validity	Validity for the associated OperatingTime	0..1	PkCommon.Validity
Times	accessAndEgress	Access and egress	Access and egress for the associated Times	0..*	PkCommon.AccessAndEgress

Class name	Association end	Designation	Definition	Multiplicity	Target
	operatingTime	Operating time	Operating time for the associated Times	0..1	PkCommon.OperatingTime

A.1.36.5 Attributes of the "Times" package

Table A.119— Attributes of the "Times" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
AccessAndEgress	exitPossibleAtAnyTime	Exit possible at any time	If [TRUE], specifies that the specified access is available for exit at all times.	0..1	PkCommon.Boolean
Times	available24hours	Available24hours	If [TRUE], the identified parking hierarchy entities is available 24 hours per day.	1..1	PkCommon.Boolean
	openAllYear	Open all year	If [TRUE], the identified parking hierarchy entities is available every day each year.	1..1	PkCommon.Boolean
	openingTimesNotSpecified	Opening times not specified	If [TRUE], the time periods are not specified.	1..1	PkCommon.Boolean
	openingTimesUnknown	Opening times unknown	If [TRUE], the time periods are not known.	1..1	PkCommon.Boolean

A.1.37"Validity" package

A.1.37.1 Location of "Validity" package

The location of "Validity" package is:

— D2Payload/Extension/Parking/PkCommon/Times/Validity

A.1.37.2 Classes of the "Validity" package

Table A.120— Classes of the "Validity" package

Class name	Designation	Definition	Stereotype	Abstract
DayWeekMonth	Day week month	Specification of periods defined by the intersection of days, weeks and months.	D2Class	no
FuzzyTimePeriod	Fuzzy time period	Specifies the time period with non-precise characteristics.	D2Class	no
OverallPeriod	Overall period	A continuous or discontinuous period of validity defined by overall bounding start and end times and the possible intersection of valid periods (potentially recurring) with the complement of exception periods (also potentially recurring).	D2Class	no
Period	Period	A continuous time period or a set of discontinuous time periods defined by the intersection of a set of criteria all within an overall delimiting interval.	D2Class	no
PublicHoliday	Public holiday	Specification of a specific public holiday in case specialDayType is set to 'publicHoliday'.	D2Class	no
SpecialDay	Special day	Specification of a special type of day, possibly also a public holiday. Can be country or region specific.	D2Class	no
TimePeriodOfDay	Time period of day	Specification of a continuous period of time within a 24 hour period.	D2Class	no
Validity	Validity	Specification of validity, either explicitly or by a validity time period specification which may be discontinuous.	D2Class	no
WeekInMonth	Week in month	Provides information concerning an identifiable calendar week in a calendar month - in accordance with ISO8601 calendar weeks start on a Monday.	D2Class	no
WeekOfMonth	Week of month	Provides information concerning an identifiable week in a calendar month - where the week starts on the same day of the week as the month.	D2Class	no
WindowStartEnd	Window start end	Specifies the limits to a recurring time of day validity pattern to be used in conunction with TimePeriodOfDay.	D2Class	no

A.1.37.3 Specializations of the "Validity" package

Table A.121— Specializations of the "Validity" package

Class name	Parent Class Name
PublicHoliday	PkCommon.SpecialDay
WeekInMonth	PkCommon.DayWeekMonth
WeekOfMonth	PkCommon.DayWeekMonth

A.1.37.4 Associations of the "Validity" package

Table A.122— Associations of the "Validity" package

Class name	Association end	Designation	Definition	Multiplicity	Target
OverallPeriod	exceptionPeriod	Exception period	A single time period, a recurring time period or a set of different recurring time periods during which validity is false.	0..*	PkCommon.Period
	validPeriod	Valid period	A single time period, a recurring time period or a set of different recurring time periods during which validity is true.	0..*	PkCommon.Period
Period	recurringDayWeekMonthPeriod	Recurring day week month period	A recurring period defined in terms of days of the week, weeks of the month and months of the year.	0..*	PkCommon.DayWeekMonth
	recurringFuzzyTimePeriod	Recurring fuzzy time period	Recurring fuzzy time period for the associated Period	0..*	PkCommon.FuzzyTimePeriod
	recurringSpecialDay	Recurring special day	A recurring period in terms of special days.	0..*	PkCommon.SpecialDay
	recurringTimePeriodOfDay	Recurring time period of day	A recurring period of a day.	0..*	PkCommon.TimePeriodOfDay
SpecialDay	namedArea	Named area	Named area for the associated SpecialDay	0..*	PkCommon.NamedArea

Class name	Association end	Designation	Definition	Multiplicity	Target
TimePeriodOfDay	windowStartEnd	Window start end	Window start end for the associated TimePeriodOfDay	0..1	PkCommon.WindowStartEnd
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	PkCommon.OverallPeriod

A.1.37.5 Attributes of the "Validity" package

Table A.123— Attributes of the "Validity" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
DayWeekMonth	applicableDay	Applicable day	Applicable day of the week. "All days of the week" is expressed by non-inclusion of this attribute.	0..7	PkCommon.DayEnum
	applicableMonth	Applicable month	Applicable month of the year. "All months of the year" is expressed by non-inclusion of this attribute.	0..12	PkCommon.MonthEnum
FuzzyTimePeriod	beginOrDuration	Begin or duration	Time period begins with a fuzzy time or the duration is a fuzzy time	1..1	PkCommon.FuzzyTimeTypeEnum
	endOrDuration	End or duration	Time period ends with a fuzzy time or the duration is a fuzzy time	1..1	PkCommon.FuzzyTimeTypeEnum
OverallPeriod	end	End	End of bounding period of validity defined by date and time.	0..1	PkCommon.DateTime
	start	Start	Start of bounding period of validity defined by date and time.	1..1	PkCommon.DateTime
Period	endOfPeriod	End of period	End of a period.	0..1	PkCommon.DateTime
	periodName	Period name	The name of the period.	0..1	PkCommon.MultilingualString

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	startOfPeriod	Start of period	Start of period.	0..1	PkCommon.DateTime
PublicHoliday	publicHolidayName	Public holiday name	Specification of a specific public holiday by its name.	1..1	PkCommon.MultilingualString
SpecialDay	intersectWithApplicableDays	Intersect with applicable days	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.	1..1	PkCommon.Boolean
	specialDayType	Special day type	Specification of a special day, for example schoolDay, publicHoliday, ...	1..1	PkCommon.SpecialDayTypeEnum
TimePeriodOfDay	endTimeOfPeriod	End time of period	End of time period.	1..1	PkCommon.Time
	startTimeOfPeriod	Start time of period	Start of time period.	1..1	PkCommon.Time
Validity	validityStatus	Validity status	Specification of validity, either explicitly overriding the validity time specification or confirming it.	1..1	PkCommon.ValidityStatusEnum
WeekInMonth	weekInMonth	Week in month	Indicates the week number within a month (see ISO 8601, i.e. with weeks commencing on a Monday).	1..1	PkCommon.CalendarWeekInMonthEnum
WeekOfMonth	applicableWeek	Applicable week	Applicable week of the month (1 to 5). "All weeks of the month" is expressed by non-inclusion of this attribute.	0..5	PkCommon.WeekOfMonthEnum
WindowStartEnd	endAfter	End after	Time period defining a valid event ending window between endAfter time and the later endTimeOfPeriod time, which occurs before startOfTimePeriod.	0..1	PkCommon.Time
	startBefore	Start before	Time period defining a valid event start window defined between the startTimeOfPeriod and a later startBefore time, which occurs before endOfTimePeriod.	0..1	PkCommon.Time

A.1.38 "VehicularAccess" package

A.1.38.1 Location of "VehicularAccess" package

The location of "VehicularAccess" package is:

— D2Payload/Extension/Parking/Place/PlaceHierarchy/IdentifiedArea/VehicularAccess

A.1.38.2 Classes of the "VehicularAccess" package

Table A.124— Classes of the "VehicularAccess" package

Class name	Designation	Definition	Stereotype	Abstract
AccessLaneSpecific	Access lane specific	Defines the sequence and nature of a specific entrance or exit lane.	D2Class	no
MaximumDimensions	Maximum dimensions	A class defining information relating to the maximum physical dimensions for the defined purpose.	D2Class	no
VehicularAccess	Vehicular access	A specialisation of an identifiedArea defining a VehicularAccess areas.	D2Class	no

A.1.38.3 Specializations of the "VehicularAccess" package

Table A.125— Specializations of the "VehicularAccess" package

Class name	Parent Class Name
VehicularAccess	Place.IdentifiedArea

A.1.38.4 Associations of the "VehicularAccess" package

Table A.126— Associations of the "VehicularAccess" package

Class name	Association end	Designation	Definition	Multiplicity	Target
AccessLaneSpecific	entranceOpenTime	Entrance open time	Entrance open time for the associated AccessLaneSpecific	0..*	PkCommon.EntranceOpenTime

Class name	Association end	Designation	Definition	Multiplicity	Target
	exitOpenTime	Exit open time	Exit open time for the associated AccessLaneSpecific	0..*	PkCommon.ExitOpenTime
	maxDimension	Max dimension	Max dimension for the associated AccessLaneSpecific	0..1	Place.MaximumDimensions
VehicularAccess	accessAndEgress	Access and egress	Access and egress for the associated VehicularAccess	0..1	PkCommon.AccessAndEgress
	accessLaneSpecific	Access lane specific	Access lane specific for the associated VehicularAccess	0..*	Place.AccessLaneSpecific
	primaryRoad	Primary road	Primary road for the associated VehicularAccess	0..*	Place.Road

A.1.38.5 Attributes of the "VehicularAccess" package

Table A.127— Attributes of the "VehicularAccess" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
AccessLaneSpecific	laneType	Lane type	Provides characterisation of the nature of the access lane (e.g. entry lane, exit lane, reversible lane).	1..1	Place.AccessLaneTypeEnum
	sequenceNumber	Sequence number	Defines a unique sequence number for this specific lane within the identifiedArea. No specific method of numbering is defined. Preferred practice numbers lanes from right to left as seen in-bound into the parking facility.	1..1	PkCommon.NonNegativeInteger
MaximumDimensions	groundClearanceIssue	Ground clearance issue	if True a restriction concerning ground clearance is defined	1..1	PkCommon.Boolean
	groundClearanceIssueDescription	Ground clearance issue description	free-text description to describe a ground clearance issue	0..1	PkCommon.MultilingualString

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	maximumHeight	Maximum height	The maximum height allowed	0..1	PkCommon.LinearDimension
	maximumLength	Maximum length	The maximum length allowed	0..1	PkCommon.LinearDimension
	maximumWidth	Maximum width	The maximum width allowed	0..1	PkCommon.LinearDimension
VehicularAccess	flow	Flow	Provides characterisation of the nature of the vehicular access area and the direction of access	1..1	Place.AccessTypeEnum

A.2 Data Dictionary of <<D2Datatype>> for "Parking"

A.2.1 Introduction

This clause contains the definitions of all data types which are used in the " Parking".

A.2.2 The <<D2Datatype>> "AmountOfMoney"

A monetary value expressed to two decimal places.

A.2.3 The <<D2Datatype>> "Ampere"

Ampere.

A.2.4 The <<D2Datatype>> "AngleInDegrees"

An integer number representing an angle in whole degrees between 0 and 359.

A.2.5 The <<D2Datatype>> "Base64Binary"

Binary data in base 64 encoding,for example for image data.

A.2.6 The <<D2Datatype>> "Boolean"

Boolean has the value space required to support the mathematical concept of binary-valued logic: {true,false}.

A.2.7 The <<D2Datatype>> "CountryCode"

ISO 3166-1 two-character country code.

A.2.8 The <<D2Datatype>> "CurrencyCode"

ISO 4217 standard specified three-letter ("Alpha-3") codes for currencies worldwide

A.2.9 The <<D2Datatype>> "Date"

RFC3339 - 5.6. Internet Date/Time Format 'full-date'

A.2.10 The <<D2Datatype>> "DateTime"

RFC3339 - 5.6. Internet Date/Time Format 'date-time'

A.2.11 The <<D2Datatype>> "Decimal"

A decimal number whose value space is the set of numbers that can be obtained by multiplying an integer by a non-positive power of ten, i.e., expressible as i × 10^-n where i and n are integers and n >= 0.

A.2.12 The <<D2Datatype>> "Double"

A double precision number whose value space consists of the values m × 2^e, where m is an integer whose absolute value is less than 2^53, and e is an integer between -1024 and 1023, inclusive.

A.2.13 The <<D2Datatype>> "Duration"

ISO8601 format definition of an interval of time - format [PnnYnnMnnDTnnHnnMnnS]

A.2.14 The <<D2Datatype>> "EPSGCode"

Entry from the European Petroleum Survey Group (EPSG) codes for map projections and coordinate systems

A.2.15 The <<D2Datatype>> "Float"

A floating point number whose value space consists of the values m × 2^e, where m is an integer whose absolute value is less than 2^24, and e is an integer between -149 and 104, inclusive.

A.2.16 The <<D2Datatype>> "GmlPosList"

List of coordinates, space-separated, within the same coordinate reference system, defining a geometric entity. Modelled on DirectPositionListType in GML (EN ISO 19136), but constrained to represent a 2D or 3D polyline.

A.2.17 The <<D2Datatype>> "Integer"

An integer number whose value space is the set {-2147483648,-2147483647,-2147483646,...,-2,-1,0,1,2,2147483645,2147483646,2147483647}.

A.2.18 The <<D2Datatype>> "LanguageCode"

A language datatype, identifies a specified language by an ISO 639-1 2-alpha code.

A.2.19 The <<D2Datatype>> "LongString"

A character string with no specified length limit, whose value space is the set of finite-length sequences of characters. Every character has a corresponding Universal Character Set code point (as defined in ISO/IEC 10646), which is an integer.

A.2.20 The <<D2Datatype>> "MetresAsFloat"

A measure of distance defined in metres in a floating point format.

A.2.21 The <<D2Datatype>> "MetresAsNonNegativeInteger"

A measure of distance defined in metres in a non negative integer format.

A.2.22 The <<D2Datatype>> "MultilingualString"

String data type with embedded language code.

A.2.23 The <<D2Datatype>> "NonNegativeInteger"

An integer number whose value space is the set {0,1,2,...,2147483645,2147483646,2147483647}.

A.2.24 The <<D2Datatype>> "NutsCode"

A NUTS code (Nomenclature of territorial units for statistics)

A.2.25 The <<D2Datatype>> "Percentage"

A measure of percentage.

A.2.26 The <<D2Datatype>> "Reference"

reference to an identifiable managed object where the identifier is unique. It comprises an identifier (e.g. UUID as specified in RFC4122) and a string identifying the class of the referenced object

A.2.27 The <<D2Datatype>> "String"

A character string whose value space is the set of finite-length sequences of characters. Every character has a corresponding Universal Character Set code point (as defined in ISO/IEC 10646), which is an integer.

A.2.28 The <<D2Datatype>> "SubdivisionCode"

ISO 3166-2 country sub-division code (up to 3 characters).

A.2.29 The <<D2Datatype>> "Time"

RFC3339 - 5.6. Internet Date/Time Format 'full-time'

A.2.30 The <<D2Datatype>> "Tonnes"

A measure of weight defined in metric tonnes.

A.2.31 The <<D2Datatype>> "Units"

Amount in units,which are specified by unitTypeEnum.

A.2.32 The <<D2Datatype>> "Url"

A Uniform Resource Locator (URL) address comprising a compact string of characters for a resource available on the Internet.

A.2.33 The <<D2Datatype>> "VersionedReference"

reference to an identifiable versioned object where the combination of identifier & version is unique. It comprises an identifier (e.g. UUID as defined by RFC4122), a version (NonNegativeInteger) and a string identifying the class of the referenced object

A.2.34 The <<D2Datatype>> "Volt"

Volt.

A.2.35 The <<D2Datatype>> "Watt"

Watt.

A.3 Data Dictionary of <<D2Enumeration>> for "Parking"

A.3.1 Introduction

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

A.3.2 The <<D2Enumeration>> "AccessibilityEnum"

Special forms of accessibility, easements and marking for disabled people.

Table A.128— Values contained in the enumeration "AccessibilityEnum"

Enumerated value name	Designation	Definition
accessForPersonsWithDisabilities	Access for persons with disabilities	Accessible for disabled people. Wheelchair accessible is a special form of it.
barrierFreeAccessible	Barrier free accessible	Accessible without any steps or other barriers. Does not ensure the same access as disabledAccessible.
disabledEasements	Disabled easements	There are special easements for disabled people, like handrails or disabled-friendly furniture.
disabledMarked	Disabled marked	There is a visible mark to support access by disabled people (e.g. a wheelchair symbol).
none	None	No form of special accessibility, i.e. usually not convenient for disabled people, e.g. because of steps or barriers.

Enumerated value name	Designation	Definition
orientationSystemForBlindPeople	Orientation system for blind people	There is some orientation system, which helps blind or visually impaired people. Examples might be some acoustic system or tactile paving.
other	Other	Other.
unknown	Unknown	It is unknown, whether there is a special form of accessibility.
wheelChairAccessible	Wheel chair accessible	Accessible by people in a wheelchair.

A.3.3 The <<D2Enumeration>> "AccessLaneTypeEnum"

A list of the supported access lane characteristic types.

Table A.129— Values contained in the enumeration "AccessLaneTypeEnum"

Enumerated value name	Designation	Definition
entryOnly	Entry only	Lane used for entry to facility only.
exitOnly	Exit only	Lane used for exit from facility only.
reversibleLane	Reversible lane	Lane used for both entry and exit to/from facility, depending on operational conditions.
serviceVehicleLane	Service vehicle lane	Lane used by parking operator service vehicle, not for public use.

A.3.4 The <<D2Enumeration>> "AccessTypeEnum"

A list of the supported access area types.

Table A.130— Values contained in the enumeration "AccessTypeEnum"

Enumerated value name	Designation	Definition
entry	Entry	a zone or area that is a place for access into a facility
exit	Exit	a zone or area that is a place for access from a facility

reversible	Reversible	a zone or area that is a place for access to or egress from a facility. Conditions may be changed by operation circumstances, such as time of day.

A.3.5 The <<D2Enumeration>> "AddressLineTypeEnum"

A list of supported address line types.

Table A.131— Values contained in the enumeration "AddressLineTypeEnum"

Enumerated value name	Designation	Definition
apartment	Apartment	Element indicating a discrete element of a building forming the address
building	Building	Element identifying the number or name and type of the edifice or construction relevant for the address [derived from ISO19160-4]
districtTerritory	District territory	Element specifying the geographic or administrative area of the country for the address [Source: 19160-4]
floor	Floor	Element indicating the floor or level on which a delivery point is located in a multi-storey building [Source:ISO19160-4]
poBox	Po box	A postal delivery location identifier, not necessarily a physical location.
region	Region	Element indicating the name of the area within or adjacent to the town in which delivery address is.
street	Street	Element indicating road or street identifier or name
town	Town	Element indicating the name of the populated place in which a delivery point is located, or near to or via which the delivery point is accessed. [Source: ISO19160-4]
unit	Unit	An element representing a section of a building or organisation.

A.3.6 The <<D2Enumeration>> "AreaFaciltyPointLocationEnum"

A list of supported parking facility point location types.

Table A.132— Values contained in the enumeration "AreaFaciltyPointLocationEnum"

Enumerated value name	Designation	Definition
assistanceLocation	Assistance location	indicating the nature of the location point where assistance is available
entranceAndExitLocation	Entrance and exit location	indicating the nature of the location is both an entrance and an exit from the Facility
entranceLocation	Entrance location	indicating the nature of the location is an entrance to the Facility
exitLocation	Exit location	indicating the nature of the location is an exit from the Facility
sellingPointLocation	Selling point location	indicating the nature of the location is a position for the access to ticket machines, or similar vending facilities

A.3.7 The <<D2Enumeration>> "AuthenticationAndIdentificationEnum"

A table of authentication and/or identification methods

Table A.133— Values contained in the enumeration "AuthenticationAndIdentificationEnum"

Enumerated value name	Designation	Definition
activeRFIDChip	Active r f i d chip	Phone (active RFID chip)
apps	Apps	Apps
calypso	Calypso	RFID Calypso
cashPayment	Cash payment	No specific authentication by using cash
creditCard	Credit card	Credit card
debitCard	Debit card	Debit card
mifareClassic	Mifare classic	RFID Card / Phone NFC - Mifare Classic

Enumerated value name	Designation	Definition
mifareDesfire	Mifare desfire	RFID Card / Phone NFC - Mifare Desfire
nfc	Nfc	Nearfield communication
noAccess	No access	No access granted
overTheAir	Over the air	Over the air according to ISO 15118
phoneDialog	Phone dialog	phone (dialog with platform)
phoneSMS	Phone s m s	Phone (SMS)
pinpad	Pinpad	PINPAD
plc	Plc	PLC according to ISO 15118
prepaidCard	Prepaid card	Pre-Paid card
rfid	Rfid	RFID
unlimitedAccess	Unlimited access	No authentication/identification required.
website	Website	Using a website

A.3.8 The <<D2Enumeration>> "CalculationTypeEnum"

A list of the supported calculation types for demand.

Table A.134— Values contained in the enumeration "CalculationTypeEnum"

Enumerated value name	Designation	Definition
counted	Counted	Physical or visual determination if a space is occupied
derived	Derived	Space occupancy is estimated by using related data such as active payments or sold permits.
expected	Expected	Future prediction of occupancy levels.
verified	Verified	Defines an occupancy report that is considered a verified report.

A.3.9 The <<D2Enumeration>> "CalendarWeekInMonthEnum"

Defines permissible enumerations of identification of calendar weeks within a month

Table A.135— Values contained in the enumeration "CalendarWeekInMonthEnum"

Enumerated value name	Designation	Definition
fifthWeek	Fifth week	Fifth calendar week of the month. Calendars weeks commence on a Monday. The fifth week immediately follows the fourth week of the month.
firstWeek	First week	First calendar week of the month - in accordance with ISO8601. This is the first week, that starts on Monday, and contains the first day of the month.
fourthWeek	Fourth week	Fourth calendar week of the month. Calendars weeks commence on a Monday. The fourth week immediately follows the third week of the month.
secondWeek	Second week	Second calendar week of the month. Calendars weeks commence on a Monday. The second week immediately follows the first week of the month.
sixthWeek	Sixth week	Sixth calendar week of the month. Calendars weeks commence on a Monday. The sixth week immediately follows the fifth week of the month. NOTE: this may be the same week as the first calendar week of the following month.
thirdWeek	Third week	Third calendar week of the month. Calendars weeks commence on a Monday. The third week immediately follows the second week of the month.

A.3.10The <<D2Enumeration>> "ChargingModeEnum"

Charging mode according to IEC-61851 terminology

Table A.136— Values contained in the enumeration "ChargingModeEnum"

Enumerated value name	Designation	Definition
ccs	Ccs	Charging with a combined charging solution (CCS). AC and DC are used simultaneously.
legacyInductive	Legacy inductive	Legacy-Inductive
mode1AC1p	Mode1 a c1p	Mode 1, AC 1 phase

Enumerated value name	Designation	Definition
mode1AC3p	Mode1 a c3p	Mode 1, AC 3 phases
mode2AC1p	Mode2 a c1p	Mode 2, AC 1 phase
mode2AC3p	Mode2 a c3p	Mode 2, AC 3 phases
mode3AC3p	Mode3 a c3p	Mode 3, AC 3 phases
mode4DC	Mode4 d c	Mode 4, DC
other	Other	Some other charging mode
unknown	Unknown	The type of the charging mode is unknown

A.3.11The <<D2Enumeration>> "ChargingPointUsageTypeEnum"

Type of usage for an electric charging point..

Table A.137— Values contained in the enumeration "ChargingPointUsageTypeEnum"

Enumerated value name	Designation	Definition
electricalDevices	Electrical devices	Provides a plug for electrical devices (e.g. shaver, mobile phones, hair dryer, ...)
electricBike	Electric bike	Charging of E-Bikes
electricBoat	Electric boat	Charging of electric boats
electricMotorcycle	Electric motorcycle	Charging of E-Motorcycles
electricVehicle	Electric vehicle	Charging of electric vehicles
lorryPowerConsumption	Lorry power consumption	Supply for lorries with power consumption, e.g. for refrigerated goods transports.
motorhomeOrCaravanSupply	Motorhome or caravan supply	Supply for motorhomes or caravans
other	Other	Other usage for the electric charging stations.
overheadLineDrivenVehicles	Overhead line driven vehicles	The charging point supplies a overhead line, usually connected via pantographs

A.3.12 The <<D2Enumeration>> "ComparisonOperatorEnum"

Logical comparison operations.

Table A.138— Values contained in the enumeration "ComparisonOperatorEnum"

Enumerated value name	Designation	Definition
equalTo	Equal to	Logical comparison operator of "equal to".
greaterThan	Greater than	Logical comparison operator of "greater than".
greaterThanOrEqualTo	Greater than or equal to	Logical comparison operator of "greater than or equal to".
lessThan	Less than	Logical comparison operator of "less than".
lessThanOrEqualTo	Less than or equal to	Logical comparison operator of "less than or equal to".

A.3.13 The <<D2Enumeration>> "ConnectorFormatTypeEnum"

A list of cable types used during the charging process.

Table A.139— Values contained in the enumeration "ConnectorFormatTypeEnum"

Enumerated value name	Designation	Definition
cableMode2	Cable mode2	The connector is an attached cable; the EV users car needs to have a fitting inlet for a mode 2 cable, common for most domestic sockets
cableMode3	Cable mode3	The connector is an attached cable; the EV users car needs to have a fitting inlet for a mode 3 cable, can be used for Type 1 and Type 2 sockets.
otherCable	Other cable	The connector is an attached cable; the EV users car needs to have a fitting inlet.
socket	Socket	The connector is a socket; the EV user needs to bring a fitting plug

A.3.14The <<D2Enumeration>> "ConnectorTypeEnum"

A table of commonly used connectors / charging interfaces

Table A.140— Values contained in the enumeration "ConnectorTypeEnum"

Enumerated value name	Designation	Definition
cee3	Cee3	CEE3, 230 V, 16 A
cee5	Cee5	CEE5, 400 V, 16-63 A
chademo	Chademo	CHAdeMO, 600 V DC. Used mostly in Japan.
domestic	Domestic	A domestic socket of unspecified type. Applicable countries should be specified in separate attribute.
domesticA	Domestic a	Domestic socket type A (mainly used in the USA, Canada, Mexico & Japan)
domesticB	Domestic b	Domestic socket type B (mainly used in the USA, Canada & Mexico)
domesticC	Domestic c	Domestic socket type C (commonly used in Europe, South America & Asia)
domesticD	Domestic d	Domestic socket type D (mainly used in India)
domesticE	Domestic e	Domestic socket type E (primarily used in France, Belgium, Poland, Slovakia & Czechia)
domesticF	Domestic f	Domestic socket type F (used almost everywhere in Europe & Russia, except for the UK & Ireland)
domesticG	Domestic g	Domestic socket type G (mainly used in the United Kingdom, Ireland, Malta, Malaysia, Singapore & the Arabian Peninsula)
domesticH	Domestic h	Domestic socket type H (used exclusively in Israel, the West Bank & the Gaza Strip)
domesticI	Domestic i	Domestic socket type I (mainly used in Australia, New Zealand, China & Argentina)
domesticJ	Domestic j	Domestic socket type J (used almost exclusively in Switzerland & Liechtenstein)
domesticK	Domestic k	Domestic socket type K (used almost exclusively in Denmark & Greenland)
domesticL	Domestic l	Domestic socket type L (used almost exclusively in Italy & Chile)

Enumerated value name	Designation	Definition
domesticM	Domestic m	Domestic socket type M (mainly used in South Africa)
domesticN	Domestic n	Domestic socket type N (used in Brazil and South Africa)
domesticO	Domestic o	Domestic socket type O (used exclusively in Thailand)
iec60309x2single16	Iec60309x2single16	IEC 60309-2 Industrial Connector single phase 16 amperes (usually blue)
iec60309x2three16	Iec60309x2three16	IEC 60309-2 Industrial Connector three phase 16 amperes (usually red)
iec60309x2three32	Iec60309x2three32	IEC 60309-2 Industrial Connector three phase 32 amperes (usually red)
iec60309x2three64	Iec60309x2three64	IEC 60309-2 Industrial Connector three phase 64 amperes (usually red)
iec62196T1	Iec62196 t1	IEC 62196 Type 1 "SAE J1772". Mostly used in USA and Asia.
iec62196T1COMBO	Iec62196 t1 c o m b o	Combo Type 1 based, DC
iec62196T2	Iec62196 t2	IEC 62196 Type 2 "Mennekes" - 400 V, 16-63 A. Mandatory in Europe
iec62196T2COMBO	Iec62196 t2 c o m b o	Combo Type 2 based, DC, Type 2 connector with extension for simultaneous DC-charging
iec62196T3A	Iec62196 t3 a	IEC 62196 Type 3A
iec62196T3C	Iec62196 t3 c	IEC 62196 Type 3C "Scame"
other	Other	Other charging interface.
pantographBottomUp	Pantograph bottom up	On-board Bottom-up-Pantograph typically for bus charging
pantographTopDown	Pantograph top down	Off-board Top-down-Pantograph typically for bus charging
teslaConnectorAmerica	Tesla connector america	Tesla connector used in America (Tesla specific)
teslaConnectorEurope	Tesla connector europe	Tesla Connector EU (modification of the Type 2 connector)
teslaR	Tesla r	Tesla Connector "Roadster"-type (round, 4 pin)
teslaS	Tesla s	Tesla Connector "Model-S"-type (oval, 5 pin)
yazaki	Yazaki	Yazaki, 400 VDC, 125 A, Asian standard.

A.3.15 The <<D2Enumeration>> "ContactTypeEnum"

Defines the supported lists of types of contact.

Table A.141— Values contained in the enumeration "ContactTypeEnum"

Enumerated value name	Designation	Definition
customerService	Customer service	Contact details for parking customer support for a facility or specific entity
emergencyContact	Emergency contact	Contact details for emergency assistance or support for a facility or specific entity specifically related to parking operations
operator	Operator	Contact details for the parking operator for a facility or specific entity
owner	Owner	Contact details for the owner of a facility or specific entity.
propertyManager	Property manager	Contact details for the property manager of a facility or related facility.
securityService	Security service	Contact details for security services for a facility or specific entity

A.3.16 The <<D2Enumeration>> "CoveredEnum"

Defines the supported lists of different types describing roof coverage of the facility or entity

Table A.142— Values contained in the enumeration "CoveredEnum"

Enumerated value name	Designation	Definition
covered	Covered	Indicates that the facility or specific entity has a roof to provide protection from direct overhead sun or adverse weather
notCovered	Not covered	Indicates that the facility or specific entity has no roof to provide protection from direct overhead sun or adverse weather
partiallyCovered	Partially covered	Indicates that the facility or specific entity has a roof offering partial coverage to provide protection from direct overhead sun or adverse weather
topLevelNotCovered	Top level not covered	Indicates that in a multi-level facility or specific entity the top level(s) have no roof to provide protection from direct overhead sun or adverse weather

A.3.17 The <<D2Enumeration>> "CredentialTypeEnum"

A list of the supported credential types available for reference.

Table A.143— Values contained in the enumeration "CredentialTypeEnum"

Enumerated value name	Designation	Definition
barcode	Barcode	Barcode or QR digital print pattern, held on any physical media.
bluetooth	Bluetooth	Specific bluetooth or BLE identification chip used to associate a BLE receiver to a specific user. Used for both one time and permit uses.
eticket	Eticket	Digital equivalent of a paper ticket, often presentable via smartphone or similar device for control.
hangtag	Hangtag	Visible, often removable, credential indicator, with visible markings
licensePlate	License plate	Fixed plate, in a defined format, used to identify a specific vehicle- Normally a permanent fixture.
other	Other	Other form of credential not covered by the other credentialtypeenum types
permit	Permit	Issued credential, often in the form of an adhesive label, often placed on the windscreen, credential indicator, with visible markings
qrCode	Qr code	Quick Reference (QR) code
rfid	Rfid	Specific RF identification associated to an RFID-related account. Used for permit uses.
ticket	Ticket	Typically issued paper with printed details, often with magnetic strips; typically single use disposable.

A.3.18 The <<D2Enumeration>> "DayEnum"

Defines permissible enumerations of identification of days within a week

Table A.144— Values contained in the enumeration "DayEnum"

Enumerated value name	Designation	Definition
friday	Friday	Friday.
monday	Monday	Monday.

saturday	Saturday	Saturday.
sunday	Sunday	Sunday.
thursday	Thursday	Thursday.
tuesday	Tuesday	Tuesday.
Wednesday	Wednesday	Wednesday.

A.3.19 The <<D2Enumeration>> "DeliveryUnitEnum"

Table with diffrent units in which the delivery is measured.

Table A.145— Values contained in the enumeration "DeliveryUnitEnum"

Enumerated value name	Designation	Definition
gasGallonEquivalent	Gas gallon equivalent	The amount of alternative fuel it takes to equal the energy content of one liquid gallon of gasoline. Used mostly in the US.
imperialGallon	Imperial gallon	Imperial Gallon (4.54609 litres)
kg	Kg	kilogram
kWh	K wh	kilowatt hour
litre	Litre	Litre
m3	M3	cubic meter
usGallon	Us gallon	US-Gallon (3.785411784 litres)

A.3.20 The <<D2Enumeration>> "ElementDescriptorEnum"

A list of the supported parking element descriptors (e.g. floor, row).

Table A.146— Values contained in the enumeration "ElementDescriptorEnum"

Enumerated value name	Designation	Definition
floorOrLevel	Floor or level	describes a place identified as a "floor", with typical use to describe a floor or level in a multi-level structure
garage	Garage	describes a place identified as a garage and/or distinct building, with typical use in a larger complex
row	Row	describes a place identified as a "row", with typical use to describe a quasi-line parking or other feature of common characteristics
Street	Street	describes a place identified as a "street", with typical use to describe a part of a road sharing a common given name.

A.3.21 The <<D2Enumeration>> "EMailTypeEnum"

Defines the supported lists of different email contact types

Table A.147— Values contained in the enumeration "EMailTypeEnum"

Enumerated value name	Designation	Definition
customerService	Customer service	The email contact is for customer service.
general	General	The email contact is general in nature.
helpdesk	Helpdesk	The email contact is a helpdesk.
individual	Individual	The email contact is for a specified individual.

A.3.22 The <<D2Enumeration>> "EnergySourceEnum"

Type of fuel used by a vehicle.

Table A.148— Values contained in the enumeration "EnergySourceEnum"

Enumerated value name	Designation	Definition
all	All	All sort of fuel is accepted.
battery	Battery	Battery.
biodiesel	Biodiesel	Biodiesel.
diesel	Diesel	Fuel used for compression-ignition (CI) engines.
dieselBatteryHybrid	Diesel battery hybrid	Diesel and battery hybrid.
ethanol	Ethanol	Ethanol.
hydrogen	Hydrogen	Hydrogen.
liquidGas	Liquid gas	Liquid gas of any type including LPG.
lpg	LPG	Liquid petroleum gas.
methane	Methane	Methane gas.
other	Other	Other.
petrol	Petrol	Fuel used for positive-ignition (PI) engines.
petrol95Octane	Petrol95 octane	Petrol with 95 octane.
petrol98Octane	Petrol98 octane	Petrol with 98 octane.
petrolBatteryHybrid	Petrol battery hybrid	Petrol and battery hybrid.
petrolLeaded	Petrol leaded	Leaded petrol.
petrolUnleaded	Petrol unleaded	Unleaded petrol.
unknown	Unknown	The sort of fuel is not known.

A.3.23The <<D2Enumeration>> "EquipmentTypeEnum"

Types of equipment.

Table A.149— Values contained in the enumeration "EquipmentTypeEnum"

Enumerated value name	Designation	Definition
bikeParking	Bike parking	Bike parking.
cargoShippingDoor	Cargo shipping door	Door/portal primarily intended for the handing and transfer of goods and cargo
cashMachine	Cash machine	Cash machine.
copyMachineOrService	Copy machine or service	A possibility to create copies of documents.
defibrillator	Defibrillator	Medical equipment to provide first aid after heart attacks.
door	Door	Door/portal without special characteristics - general pedestrian access
doorWithAccessCredential	Door with access credential	Door/portal with controlled access by use of defined credentials
doorWithSecurityReview	Door with security review	Door/portal with controlled access by security staff inspection
dropOffLocation	Drop off location	Designated area marked for drop-off or pick up from vehicles (cargo and/or people)
dsrcReceiver	Dsrc receiver	A system to manage digital short range communication (radio beacon transceivers), e.g. for tolling roadside equipment.
dumpingStation	Dumping station	Possibility to get rid of sewerage (especially for motorhomes).
electricChargingStation	Electric charging station	For charging vehicles, motorhome supply etc. The 'numberOf...' attribute specifies the number of charging stations.
elevator	Elevator	Indication of the availability of elevators.
emergencyExitDoor	Emergency exit door	Door/portal primarily intended for use in emergency evacuations circumstances - may be internal within sub-areas of a place
faxMachineOrService	Fax machine or service	A possibility to send and/or receive faxes.
fireExtinguisher	Fire extinguisher	Fire extinguisher

Enumerated value name	Designation	Definition
fireHose	Fire hose	A hose for water transport in case of fire.
fireHydrant	Fire hydrant	Fire hydrant
firstAidEquipment	First aid equipment	Equipment to support first aid on injured people. Note that 'defibrillator' is a separate literal.
iceFreeScaffold	Ice free scaffold	A technical equipment to remove ice and snow from the roof of lorries.
informationPoint	Information point	An information point with employees.
informationStele	Information stele	An unmanned information point.
internetTerminal	Internet terminal	Public internet terminal. Charges may be specified using the TariffsAndPayment section.
internetWireless	Internet wireless	Public wireless internet. Specifying an amount would be the number of hotspots/access points. Charges may be specified using the TariffsAndPayment section.
lprCamera	Lpr camera	Camera for the purpose of detecting and reading vehicle registration plates
luggageLocker	Luggage locker	Possibility to deposit luggage in a safe way.
none	None	None.
occupancyObjectSensingCamera	Occupancy object sensing camera	Camera capable of detecting presence of objects
occupancySensor	Occupancy sensor	Sensor capable of detecting presence of vehicles
other	Other	Some other equipment. Use 'otherSupplementalFacility' to specify it.
paymentMachine	Payment machine	A payment machine, for example a parking ticket machine.
picnicFacilities	Picnic facilities	Indication of whether any picnicking facilities, such as tables, chairs and shaded areas, are available.
playground	Playground	A playground for children.
publicCardPhone	Public card phone	Indicates a public telephone available that can be used with a card.

Enumerated value name	Designation	Definition
publicCoinPhone	Public coin phone	Indicates a public telephone available that can be used with coins.
publicPhone	Public phone	Indicates a public telephone available.
refuseBin	Refuse bin	Refuse bins for small amounts of garbage (see also 'wasteDisposal').
safeDeposit	Safe deposit	A possibility to store valuable possession in a safe way.
securityCamera	Security camera	Camera for the purpose of security/safety
shelter	Shelter	A shelter (against wind, sun, ...).
shower	Shower	Indicates, whether there are shower facilities available.
snowAndIceRemovalEquipment	Snow and ice removal equipment	Equipment to remove snow and ice.
toilet	Toilet	Indicates, whether there are toilets available.
tollTerminal	Toll terminal	A terminal, where toll charges can be paid manually (this does not mean a toll gate on the road)
tyreAirPressureEquipment	Tyre air pressure equipment	Equipment to measure and refill tyre air pressure.
unknown	Unknown	Unknown.
vendingMachine	Vending machine	A vending machine for snacks, coffee etc. (without manpower).
wasteDisposal	Waste disposal	Possibility to get rid of waste in a legal way (e.g. for truckers or motorhomes). Normal refuse bins are not intended here.
waterBasin	Water basin	A water basin to wash hands, clothes or dishes.
waterSupply	Water supply	Supply of fresh water, e.g. for motorhomes.
waterTap	Water tap	Fresh water out of a tap.

A.3.24The <<D2Enumeration>> "FunctionTypeEnum"

Defines the supported types of logical operator supported

Table A.150— Values contained in the enumeration "FunctionTypeEnum"

Enumerated value name	Designation	Definition
all	All	Operator to include all values
and	And	logical operation to determine if all conditions in a test are TRUE (AND logical operator)
not	Not	logical operation to determine one value is not equal to another (NOT logical operator)
or	Or	The OR operator function.

A.3.25The <<D2Enumeration>> "FuzzyTimeTypeEnum"

Specifies the time period with non-precise characteristics

Table A.151— Values contained in the enumeration "FuzzyTimeTypeEnum"

Enumerated value name	Designation	Definition
autumn	Autumn	Beginning of autumn/fall [Source: ISO 20524-1]
dawn	Dawn	Starts at dawn [Source: ISO 20524-1]
day	Day	Start of day [Source: ISO 20524-1]
drySeason	Dry season	Beginning of dry season [Source: ISO 20524-1]
dusk	Dusk	Starts at dusk [Source: ISO 20524-1]
external	External	Starting period controlled by external device [Source: ISO 20524-1]
highTide	High tide	Beginning of high tide [Source: ISO 20524-1]
highWater	High water	Beginning of high water [Source: ISO 20524-1]
holiday	Holiday	Starts at any holiday [Source: ISO 20524-1]

Enumerated value name	Designation	Definition
lowTide	Low tide	Beginning of low tide [Source: ISO 20524-1]
lowWater	Low water	Beginning of low water [Source: ISO 20524-1]
night	Night	Start of night [Source: ISO 20524-1]
offpeakHours	Offpeak hours	start of off-peak hours [Source: ISO 20524-1]
peakHours	Peak hours	Start of peak hours, peak hours include rush hour and activity/ scheduled event based times. These would vary by location and by season [Source: ISO 20524-1]
school	School	Starts at any school period (date and hour) [Source: ISO 20524-1]
spring	Spring	Beginning of spring [Source: ISO 20524-1]
summer	Summer	Beginning of summer [Source: ISO 20524-1]
wetSeason	Wet season	Beginning of wet season [Source: ISO 20524-1]
winter	Winter	Beginning of winter [Source: ISO 20524-1]

A.3.26The <<D2Enumeration>> "GeoJSONTypeEnum"

List of geometric concepts in GeoJSON encoding supported in this specification.

Table A.152— Values contained in the enumeration "GeoJSONTypeEnum"

Enumerated value name	Designation	Definition
lineString	Line string	see IETF rfc 7946, clause 3.1.4
multiLineString	Multi line string	see IETF rfc 7946, clause 3.1.5
multiPoint	Multi point	see IETF rfc 7946, clause 3.1.3.
multiPolygon	Multi polygon	see IETF rfc 7946, clause 3.1.7
point	Point	see IETF rfc 7946, clause 3.1.2
polygon	Polygon	see IETF rfc 7946, clause 3.1.6

A.3.27 The <<D2Enumeration>> "HeightGradeEnum"

List of height or vertical gradings of road sections.

Table A.153— Values contained in the enumeration "HeightGradeEnum"

Enumerated value name	Designation	Definition
aboveGrade	Above grade	Above or over the normal road grade elevation.
atGrade	At grade	At the normal road grade elevation.
belowGrade	Below grade	Below or under the normal road grade elevation.

A.3.28 The <<D2Enumeration>> "HeightTypeEnum"

Coded value for type of height

Table A.154— Values contained in the enumeration "HeightTypeEnum"

Enumerated value name	Designation	Definition
ellipsoidalHeight	Ellipsoidal height	Value measured vertically above the reference ellipsoid
gravityRelatedHeight	Gravity related height	Height type corresponding a value measured along direction of gravity above the reference geoid i.e. equipotential surface of the Earth's gravity field which globally approximates mean sea level.
relativeHeight	Relative height	Height type corresponding to value masured vertically above the ground level at this point.

A.3.29 The <<D2Enumeration>> "HierarchyElementTypeEnum"

Defines the supported lists of types of parking hierarchy elements permissible

Table A.155— Values contained in the enumeration "HierarchyElementTypeEnum"

Enumerated value name	Designation	Definition
campus	Campus	typically defines a large facility (such as a university campus, or an airport), or a large geographic zone (such as a city or a town), which may contain numerous places that can be logically reported together
identifiedArea	Identified area	an identifiable discrete bounded geographic zone that shares common characteristics and is used for parking and mobility related operations or other purposes
place	Place	a place or location used for parking, loading, unloading, standing, or some other mobility or transport related activity
space	Space	a single space for parking or other mobility related purposes, usually designed for one vehicle, which may, but not necessarily, be denoted by painted or other road surface marker
subplaceElement	Subplace element	a sub-division of a place for the convenience of the operator to segment the place and identify varied uses for parking and mobility related operations or other purposes

A.3.30 The <<D2Enumeration>> "InstanceOfDayInMonthEnum"

Defines permissible enumerations of the instance of a specific day (e.g. Monday, Tuesday) within a calendar month

Table A.156— Values contained in the enumeration "InstanceOfDayInMonthEnum"

Enumerated value name	Designation	Definition
fifthInstance	Fifth instance	Fifth instance of a specific day (e.g. Monday, Tuesday) within a calendar month
firstInstance	First instance	First instance of a specific day (e.g. Monday, Tuesday) within a calendar month
fourthInstance	Fourth instance	Fourth instance of a specific day (e.g. Monday, Tuesday) within a calendar month
secondInstance	Second instance	Second instance of a specific day (e.g. Monday, Tuesday) within a calendar month
thirdInstance	Third instance	Third instance of a specific day (e.g. Monday, Tuesday) within a calendar month

A.3.31 The <<D2Enumeration>> "IssueMethodEnum"

A list of the supported methods for issuing credentials.

Table A.157— Values contained in the enumeration "IssueMethodEnum"

Enumerated value name	Designation	Definition
electronic	Electronic	electronic issued, traceable
permit	Permit	physical identifier, typically visibly mounted within vehicle
ticket	Ticket	typically single use, paper based

A.3.32 The <<D2Enumeration>> "LowEmissionLevelEnum"

The emission level of a vehicle.

Table A.158— Values contained in the enumeration "LowEmissionLevelEnum"

Enumerated value name	Designation	Definition
freeOfEmission	Free of emission	Only vehicles that do not produce emissions (e.g. electric driven). Hybrid driven cars are allowed, when they switch to emission free mode within the considered situation.
lowLevelEmission	Low level emission	Vehicles with low level emission.

A.3.33 The <<D2Enumeration>> "MeansOfPaymentEnum"

Means of payment

Table A.159— Values contained in the enumeration "MeansOfPaymentEnum"

Enumerated value name	Designation	Definition
cashBillsOnly	Cash bills only	Cash payment using bills only.
cashCoinsAndBills	Cash coins and bills	Cash payment using bills and/or coins only.

Enumerated value name	Designation	Definition
cashCoinsOnly	Cash coins only	Cash payment with coins only.
mobileAccount	Mobile account	Payment method using an app or other functions typically via a smartphone, to a linked bank or card account.
paymentCreditCard	Payment credit card	Payment by electronic payment credit card which is a small plastic card issued by a bank, building society, or other financial institution (ISO/IEC 7813 and other related standards), allowing the holder to purchase goods or services on credit.
paymentDebitCard	Payment debit card	Payment by electronic payment debit card which is a small plastic card (ISO/IEC 7813 and other related standards), allowing the holder to transfer money electronically from their bank account when making a purchase.
paymentValueCard	Payment value card	Payment by electronic payment debit card which is a small plastic card (ISO/IEC 7813 and other related standards) with a monetary value stored on the card itself, not that may not be linked to an external account maintained by a financial institution.
prepay	Prepay	Advanced payment for parking right.
tollTag	Toll tag	toll tag (RFID) or similar, with associated account.
unknown	Unknown	Unknown.

A.3.34The <<D2Enumeration>> "MonthEnum"

Defines permissible enumerations of identification of calendar months within a year

Table A.160— Values contained in the enumeration "MonthEnum"

Enumerated value name	Designation	Definition
april	April	The month of April.
august	August	The month of August.
december	December	The month of December.
february	February	The month of February.

Enumerated value name	Designation	Definition
january	January	The month of January.
july	July	The month of July.
june	June	The month of June.
march	March	The month of March.
may	May	The month of May.
november	November	The month of November.
october	October	The month of October.
september	September	The month of September.

A.3.35The <<D2Enumeration>> "NilReasonType"

Provides a list of values that may be used in a property element that is nillable to indicate a reason for a nil value (source: ISO19136-1)

Table A.161— Values contained in the enumeration "NilReasonType"

Enumerated value name	Designation	Definition
inapplicable	Inapplicable	there is no value
missing	Missing	the correct value is not readily available to the sender of this data. Furthermore, a correct value may not exist
template	Template	the value will be available later
unknown	Unknown	the correct value is not known to, and not computable by, the sender of this data. However, a correct value probably exists
withheld	Withheld	the value is not divulged

A.3.36 The <<D2Enumeration>> "NutsCodeTypeEnum"

Types of NUTS codes (Nomenclature of territorial units for statistics) including LAU codes (Local Administrative Units).

Table A.162— Values contained in the enumeration "NutsCodeTypeEnum"

Enumerated value name	Designation	Definition
lau1Code	Lau1 code	LAU 1 code
lau2Code	Lau2 code	LAU 2 code
nuts1Code	Nuts1 code	NUTS 1 code
nuts2Code	Nuts2 code	NUTS 2 code
nuts3Code	Nuts3 code	NUTS 3 code

A.3.37 The <<D2Enumeration>> "ObservationTypeEnum"

A list of the supported observation types.

Table A.163— Values contained in the enumeration "ObservationTypeEnum"

Enumerated value name	Designation	Definition
anpr	Anpr	Automatic vehicle license plate recognition
chalk	Chalk	chalk-mark observation or similar
rfTransponder	Rf transponder	radio frequency transponder device, for toll tag or similar radio based devices
scanner	Scanner	Handheld or fixed scanning device (optical)
visual	Visual	Visual (human) observation

A.3.38 The <<D2Enumeration>> "OpenlrFormOfWayEnum"

Enumeration of form of way

Table A.164— Values contained in the enumeration "OpenlrFormOfWayEnum"

Enumerated value name	Designation	Definition
motorway	Motorway	Motorway
multipleCarriageway	Multiple carriageway	Multiple carriageway
other	Other	Other
roundabout	Roundabout	Roundabout
singleCarriageway	Single carriageway	Single carriageway
slipRoad	Slip road	Slip road
trafficSquare	Traffic square	Traffic square
undefined	Undefined	Undefined

A.3.39 The <<D2Enumeration>> "OpenlrFunctionalRoadClassEnum"

A list of supported values for functional road class

Table A.165— Values contained in the enumeration "OpenlrFunctionalRoadClassEnum"

Enumerated value name	Designation	Definition
frc0	Frc0	Main road, highest importance
frc1	Frc1	First class road
frc2	Frc2	Second class road
frc3	Frc3	Third class road
frc4	Frc4	Fourth class road

Enumerated value name	Designation	Definition
frc5	Frc5	Fifth class road
frc6	Frc6	Sixth class road
frc7	Frc7	Other class road, lowest importance

A.3.40 The <<D2Enumeration>> "OpenlrOrientationEnum"

Enumeration of side of road

Table A.166— Values contained in the enumeration "OpenlrOrientationEnum"

Enumerated value name	Designation	Definition
againstLineDirection	Against line direction	Against line direction
both	Both	Both directions
noOrientationOrUnknown	No orientation or unknown	No orientation or unknown
withLineDirection	With line direction	With line direction

A.3.41 The <<D2Enumeration>> "OpenlrSideOfRoadEnum"

Enumeration of side of road

Table A.167— Values contained in the enumeration "OpenlrSideOfRoadEnum"

Enumerated value name	Designation	Definition
both	Both	On both sides of the road.
left	Left	On the left side of the road.
onRoadOrUnknown	On road or unknown	On road or unknown
right	Right	On the right side of the road.

A.3.42 The <<D2Enumeration>> "OperatingRestrictionEnum"

Defines operating restrictions to use the of a facility.

Table A.168— Values contained in the enumeration "OperatingRestrictionEnum"

Enumerated value name	Designation	Definition
busOnly	Bus only	Only buses are permitted.
busStop	Bus stop	This is a stopping place of bus pick-up or drop-off; not to be used for parking.
carpoolOnly	Carpool only	Only carpool vehicles are permitted.
commercialVehicleOnly	Commercial vehicle only	Only commercial vehicles are permitted.
disabledPersonPermitOnly	Disabled person permit only	Only vehicles of registered disabled person permit holders permitted.
electricVehicleOnly	Electric vehicle only	Only electric vehicles permitted.
freeParking	Free parking	No fee for parking
governmentVehicleOnly	Government vehicle only	Only government vehicles permitted.
loadingZone	Loading zone	This is a loading zone; not to be used for parking.
loadingZoneCommercial	Loading zone commercial	Only government vehicles permitted.
media	Media	Only for use by the media
noParking	No parking	No parking permitted
noWaiting	No waiting	No waiting or parking of vehicles is permitted
parkingTimeLimit	Parking time limit	Time limited parking.
residentialPermitOnly	Residential permit only	Only for use by residential permit holders only
snow	Snow	Snow clearing zone; no parking
streetCleaning	Street cleaning	Street cleansing zone; no parking
taxiOnly	Taxi only	Only taxis are permitted.

Enumerated value name	Designation	Definition
valetOnly	Valet only	Only valet service vehicles are permitted.

A.3.43The <<D2Enumeration>> "ParkingActivationModeEnum"

A list of supported parking operation modes.

Table A.169— Values contained in the enumeration " ParkingActivationModeEnum"

Enumerated value name	Designation	Definition
app	App	App: payment and activation of a session is collected via an app that may also control access to the facility
payAndDisplay	Pay and display	PND (pay and display): vehicle displays a credential to show it is paid and a session is active Typically prepaid and short term.
payByPlate	Pay by plate	PBP - pay by plate - vehicle registration or license plate is used for recording and enforcement either on street or off street. Payment is collected on a prepaid basis or at the exit.
payBySpace	Pay by space	PBS (pay by space): vehicle makes a payment based on occupying a specific space and to activate the session. Typically prepaid.
permit	Permit	similar to PND but for long term parking. Activaction of the RIGHT is via the issuance of a permit. (e.g. monthly pass, quarterly, semester).
ticket	Ticket	payment is done with a ticket (e.g. with magnetic strip, barcode). Payment is collected at the exit. Session is activated upon issuance fo the ticket.

A.3.44The <<D2Enumeration>> "ParkingSpaceOccupancyDetectionEnum"

A list of supported methods for detection of occupancy by a vehicle in a parking space.

Table A.170— Values contained in the enumeration "ParkingSpaceOccupancyDetectionEnum"

Enumerated value name	Designation	Definition

anpr	Anpr	Automated License Plate Recognition information is tracked for inbound and outbound traffic. The difference between in and out counts enables an occupancy count.
imageAnalytics	Image analytics	Image analytics are used to evaluate a picture with known parking space geography and computer vision is used to determine occupancy at a point in time.
spaceSensor	Space sensor	A sensor in each space detects the presence of a vehicle.
userDeclaration	User declaration	User self-declared, where the user enters a space identifier and/or vehicle registration number, typically at the start of a parking session.
videoAnalytics	Video analytics	Video analytics are used to evaluate a video stream to identify objects (vehicles) and direction of travel. The difference between the inbound objects and outbound objects determines occupancy.
videoSpace	Video space	Video analytics or ANPR technologies are used to evaluate a video stream with known space geometry to identify objects (vehicles or license plates) occupying specific spaces.
visual	Visual	Operator/owner makes periodic visual counts of the facility.

A.3.45The <<D2Enumeration>> "PaymentTimingEnum"

Details of when payment is required.

Table A.171— Values contained in the enumeration "PaymentTimingEnum"

Enumerated value name	Designation	Definition
other	Other	Other.
payAfterExit	Pay after exit	Payment on account
payAndExit	Pay and exit	Pay directly at the exit with a payment card or other means of payment (usually, this payment card must have been used when entering as well).

Enumerated value name	Designation	Definition
payOnEntry	Pay on entry	pay at start of the parking session (e.g. for pay and display)
payPriorToExit	Pay prior to exit	Pay at machine on foot prior to returning to vehicle and use payment ticket to exit.
prepay	Prepay	pay before entry

A.3.46 The <<D2Enumeration>> "PaymentTypeEnum"

Indicates the list of acceptable payment types against as AssignedRight.

Table A.172— Values contained in the enumeration "PaymentTypeEnum"

Enumerated value name	Designation	Definition
base	Base	Indicates financial payment made
refund	Refund	Indicates financial value offset through use of refund
surcharge	Surcharge	Indicates financial value offset through use of refund
validation	Validation	Indicates financial value offset through use of validation coupon or similar
Vat	Vat	Indicates financial value offset through use of validation coupon or similar

A.3.47 The <<D2Enumeration>> "PedestrianAccessTypeEnum"

A list of the supported pedestrian access characteristic types.

Table A.173— Values contained in the enumeration "PedestrianAccessTypeEnum"

Enumerated value name	Designation	Definition
cargoShippingDoor	Cargo shipping door	Door/portal primarily intended for the handing and transfer of goods and cargo
door	Door	Door/portal without special characteristics - general pedestrian access

Enumerated value name	Designation	Definition
doorWithAccessCredential	Door with access credential	Door/portal with controlled access by use of defined credentials
doorWithSecurityReview	Door with security review	Door/portal with controlled access by security staff inspection
emergencyExitDoor	Emergency exit door	Door/portal primarily intended for use in emergency evacuations circumstances - may be internal within sub-areas of a place

A.3.48 The <<D2Enumeration>> "QuoteRightResponseExtensionReasonEnum"

A list of supported reasons if a requested session extension request is not provided

Table A.174— Values contained in the enumeration "QuoteRightResponseExtensionReasonEnum"

Enumerated value name	Designation	Definition
existingSessionNotFound	Existing session not found	Error – the existing session referenced is not found
incorrectCredentialsSupplied	Incorrect credentials supplied	Error – credential details supplied are incorrect
noExtensionPossible	No extension possible	Error – the requested extension is not possible

A.3.49 The <<D2Enumeration>> "RateAvailabilityTypeEnum"

A list of rate availability types.

Table A.175— Values contained in the enumeration "RateAvailabilityTypeEnum"

Enumerated value name	Designation	Definition
private	Private	where parking access limited to known and authorized individuals.
public	Public	Open to the public.
restricted	Restricted	Open to the public but need a direct purpose or permission to use from owner (e.g. doctor's surgery, storefront)

A.3.50 The <<D2Enumeration>> "RateLineTypeEnum"

A list of rate line types.

Table A.176— Values contained in the enumeration "RateLineTypeEnum"

Enumerated value name	Designation	Definition
flatRate	Flat rate	A rate applied to the rate line which is not time/duration dependent. i.e. a single fixed payment.
flatRateTier	Flat rate tier	A flat rate charge rate associated with a specific time-based tier. This is a special case of an incrementing rate.
incrementingRate	Incrementing rate	A charge rate that increases by a defined amount in a defined time.
perUnit	Per unit	A flat rate charge associated with a unit of delivered quantity

A.3.51 The <<D2Enumeration>> "RateTypeEnum"

A list of supported rate types.

Table A.177— Values contained in the enumeration "RateTypeEnum"

Enumerated value name	Designation	Definition
contract	Contract	Rate provided to contract holders only.
daily	Daily	Rate provided on a daily rate, per calendar day.
event	Event	Rate provided in combination with a specific event.
hourly	Hourly	Rate provided on an hourly basis.

A.3.52 The <<D2Enumeration>> "RateUsageConditionsTypeEnum"

A list of supported rate usage condition types.

Table A.178— Values contained in the enumeration "RateUsageConditionsTypeEnum"

Enumerated value name	Designation	Definition
fixedDuration	Fixed duration	Fixed duration - check Rate Usage Duration Limitation field
fixedNumber	Fixed number	check Rate Usage Count Limitation field
once	Once	Permit can be used once
unlimited	Unlimited	Unlimited usage.

A.3.53 The <<D2Enumeration>> "RefillPointStatusEnum"

The status of a refill point.

Table A.179— Values contained in the enumeration "RefillPointStatusEnum"

Enumerated value name	Designation	Definition
available	Available	The refill point is not occupied, has got enough energy resources and can be used.
blocked	Blocked	The refill point is not accessible because of a physical barrier, e.g. a car.
charging	Charging	The refill point is currently in use for charging.
faulted	Faulted	The refill point has got a fault.
inoperative	Inoperative	The refill point is not yet active or it is no longer available (deleted).
occupied	Occupied	The refill point is in use, this might include vehicle charging activity.
outOfOrder	Out of order	The refill point is currently out of order.
outOfStock	Out of stock	The refill point is out of stock, i.e. energy resources are empty.
planned	Planned	The refill point is planned, will be operating soon.

Enumerated value name	Designation	Definition
removed	Removed	The refill point was discontinued/removed.
reserved	Reserved	The refill point is reserved by a customer, i.e. it is not available for other users right now.
unavailable	Unavailable	There is no energy available at this refill point. This could be because of a failure or damage or a longer lasting delivery failure (note that there is a literal 'outOfStock' for a short-term shortage).
unknown	Unknown	The status of the refill point is unknown (can also be offline).

A.3.54The <<D2Enumeration>> "RefundTypeEnum"

A list of available refund categories.

Table A.180— Values contained in the enumeration "RefundTypeEnum"

Enumerated value name	Designation	Definition
surchargeFullyRefundable	Surcharge fully refundable	The surcharge amount is fully refundable, when termination conditions are met.
surchargeNonRefundable	Surcharge non refundable	The surcharge amount is non-refundable, when termination conditions are met.
surchargePartiallyRefundable	Surcharge partially refundable	The surcharge amount is partially but not fully refundable, when termination conditions are met

A.3.55The <<D2Enumeration>> "ReservationTypeEnum"

Different types of reservation.

Table A.181— Values contained in the enumeration "ReservationTypeEnum"

Enumerated value name	Designation	Definition
mandatory	Mandatory	Reservation is mandatory.
notAvailable	Not available	Reservation is not possible.
optional	Optional	Reservation is optional.

Enumerated value name	Designation	Definition
partly	Partly	There is a specific contingent, that can be reserved.
unknown	Unknown	Possibility of reservation is unknown,
unspecified	Unspecified	Possibility of reservation is not specified.

A.3.56 The <<D2Enumeration>> "ResponseReasonEnum"

A list of supported reasons if a requested quote response is not provided

Table A.182— Values contained in the enumeration "ResponseReasonEnum"

Enumerated value name	Designation	Definition
eligibilityRequirementNotMet	Eligibility requirement not met	a stated eligibility requirement is not considered to be met
noAvailability	No availability	No availability for request
noMatchingSpecification	No matching specification	No matching rights specification found
other	Other	other reason (reason not given)
rightSpecificationNotAvailableAtRequestedTimes	Right specification not available at requested times	the requested specification is not available at the requested time

A.3.57 The <<D2Enumeration>> "RightTypeEnum"

A list of the supported RightSpecification types available for reference.

Table A.183— Values contained in the enumeration "RightTypeEnum"

Enumerated value name	Designation	Definition
accessPermission	Access permission	RightSpecification intended grant access permission.
loadingUnloading	Loading unloading	RightSpecification intended granting permissions to load and unload vehicles.

Enumerated value name	Designation	Definition
oneTimeUseParking	One time use parking	RightSpecification intended for one time or limited parking usage.
permitParking	Permit parking	RightSpecification intended for multi-use parking usage.
setdownPickup	Setdown pickup	RightSpecification intended for passenger setdown and pickup.
waiting	Waiting	RightSpecification intended to grant permission for an accompanied vehicle to wait.

A.3.58 The <<D2Enumeration>> "RoadTypeEnum"

Categorisation of the road type (motorway, main road,...).

Table A.184— Values contained in the enumeration "RoadTypeEnum"

Enumerated value name	Designation	Definition
mainRoad	Main road	Main road.
motorway	Motorway	Motorway.
other	Other	Other.
trunkRoad	Trunk road	Trunk road.

A.3.59 The <<D2Enumeration>> "ServiceFacilityTypeEnum"

A service facility. Distinct to equipment, a service is usually manned.

Table A.185— Values contained in the enumeration "ServiceFacilityTypeEnum"

Enumerated value name	Designation	Definition
bikeGarage	Bike garage	A place where bikes are repaired.
bikeSharing	Bike sharing	Bike Sharing.
cafe	Cafe	Cafe.
carWash	Car wash	Car wash.

Enumerated value name	Designation	Definition
currencyExchange	Currency exchange	Service for the exchange of foreign currency
docstop	Docstop	The site is part of the Docstop project, http://www.docstoponline.eu, which means medical assistance for professional drivers.
foodShopping	Food shopping	Food shopping.
hotel	Hotel	A hotel.
kiosk	Kiosk	Kiosk.
laundry	Laundry	A possibility for washing clothes (might also be a laundromat with coins).
leisureActivities	Leisure activities	There are leisure activities offered on the site or in the very near surrounding. Use the additional description attribute to give details.
medicalFacility	Medical facility	Medical facility.
motel	Motel	Hotel located aside a motorway.
motorcycleGarage	Motorcycle garage	A place where motorcycles are repaired.
motorwayRestaurant	Motorway restaurant	Restaurant located on a motorway rest area.
motorwayRestaurantSmall	Motorway restaurant small	Smaller type of restaurant located on a motorway rest area. Might be with limited offers.
other	Other	Some other service facility. Use 'otherSupplementalFacility' to specify it.
overnightAccommodation	Overnight accommodation	An accommodation to stay overnight.
payDesk	Pay desk	A manned possibility to pay.
petrolStation	Petrol station	Indicates whether it is possible to get petrol.
pharmacy	Pharmacy	Pharmacy.
police	Police	Indicates whether a police station is on site or very close.
restaurant	Restaurant	Restaurant.

Enumerated value name	Designation	Definition
restaurantSelfService	Restaurant self service	A restaurant where people arrange and fetch their meal themselves, this might enclose a buffet.
shop	Shop	A shop of unspecified kind.
snackBar	Snack bar	A snack bar.
sparePartsShopping	Spare parts shopping	Spare parts shopping.
touristInformation	Tourist information	Tourist information with employees.
transportInterchange	Transport interchange	Interchange point with other modes of transport
truckRepair	Truck repair	Truck repair.
truckWash	Truck wash	Truck wash.
tyreRepair	Tyre repair	A tyre repair service.
unknown	Unknown	Unknown.
vehicleMaintenance	Vehicle maintenance	Garage repair service.

A.3.60 The <<D2Enumeration>> "ServiceTypeEnum"

A table of different service levels to be expected for fuelling/charging and payment.

Table A.186— Values contained in the enumeration "ServiceTypeEnum"

Enumerated value name	Designation	Definition
fullService	Full service	Full fuelling service carried out by an employee.
selfService	Self service	Self Service for fuelling
unattended	Unattended	Unattended station, fuelling and payment to be done without assistance.

A.3.61 The <<D2Enumeration>> "SpecialDayTypeEnum"

Collection of special types of days.

Table A.187— Values contained in the enumeration "SpecialDayTypeEnum"

Enumerated value name	Designation	Definition
dayBeforePublicHoliday	Day before public holiday	The day preceding a public holiday.
dayFollowingPublicHoliday	Day following public holiday	A day following a public holiday.
inLieuOfPublicHoliday	In lieu of public holiday	A holiday in lieu of a public holiday that falls on a weekend.
longWeekendDay	Long weekend day	A day between a public holiday and the weekend.
other	Other	Some other special day.
publicEventDay	Public event day	A day of a public event. You may use the publicEvent attribute to specify the corresponding event.
publicHoliday	Public holiday	A public holiday in general. You may use the PublicHoliday class to refer on a specific public holiday.
schoolDay	School day	A school day.
schoolHolidays	School holidays	A day within the school holidays.

A.3.62 The <<D2Enumeration>> "StaffEnum"

A list of supported values for staffing characteristics.

Table A.188— Values contained in the enumeration "StaffEnum"

Enumerated value name	Designation	Definition
staffed	Staffed	Normally staffed during operating hours
temporary	Temporary	Staffed on a temporary or part-time basis.
unstaffed	Unstaffed	Not normally staffed during operating hours

A.3.63 The <<D2Enumeration>> "StructureGradeEnum"

Types of layout of the parking site.

Table A.189— Values contained in the enumeration "StructureGradeEnum"

Enumerated value name	Designation	Definition
aboveGround	Above ground	Parking is above ground level (this may include ground level parking).
groundLevel	Ground level	Parking is at ground level.
underground	Underground	Parking is on one or more floors below ground level.

A.3.64 The <<D2Enumeration>> "StructureTypeEnum"

A list of types of parking structure.

Table A.190— Values contained in the enumeration "StructureTypeEnum"

Enumerated value name	Designation	Definition
offStreetStructure	Off street structure	Off-street multi-tier parking structure.
offStreetSurface	Off street surface	Off-street ground-level at grade parking.
onStreet	On street	On-street parking.

A.3.65 The <<D2Enumeration>> "SubdivisionTypeEnum"

ISO 3166-2 subdivison types.

Table A.191— Values contained in the enumeration "SubdivisionTypeEnum"

Enumerated value name	Designation	Definition
administrativeAtoll	Administrative atoll	Administrative atoll
administrativeRegion	Administrative region	Administrative region
administrativeTerritory	Administrative territory	Administrative territory
arcticRegion	Arctic region	Arctic region
autonomousCity	Autonomous city	Autonomous city
autonomousCityInNorthAfrica	Autonomous city in north africa	Autonomous city in North Africa
autonomousCommunity	Autonomous community	Autonomous community
autonomousDistrict	Autonomous district	Autonomous district
autonomousProvince	Autonomous province	Autonomous province
autonomousRegion	Autonomous region	Autonomous region
canton	Canton	Canton
capitalCity	Capital city	Capital city
city	City	City
cityMunicipality	City municipality	City municipality
cityOfCountyRight	City of county right	City of county right
commune	Commune	Commune
councilArea	Council area	Council area
country	Country	Country
county	County	County
department	Department	Department
dependency	Dependency	Dependency

Enumerated value name	Designation	Definition
district	District	District
districtMunicipality	District municipality	District municipality
districtWithSpecialStatus	District with special status	District with special status
entity	Entity	Entity
geographicalEntity	Geographical entity	Geographical entity
governorate	Governorate	Governorate
laender	Laender	Länder
localCouncil	Local council	Local Council
londonBorough	London borough	London borough
metropolitanArea	Metropolitan area	Metropolitan area
metropolitanDepartment	Metropolitan department	Metropolitan department
metropolitanDistrict	Metropolitan district	Metropolitan district
metropolitanRegion	Metropolitan region	Metropolitan region
municipality	Municipality	Municipality
other	Other	Other
overseasDepartment	Overseas department	Overseas department
overseasRegion	Overseas region	Overseas region
overseasTerritorialCollectivity	Overseas territorial collectivity	Overseas territorial collectivity
parish	Parish	Parish
province	Province	Province
quarter	Quarter	Quarter
region	Region	Region

Enumerated value name	Designation	Definition
republic	Republic	Republic
republicanCity	Republican city	Republic city
selfGovernedPart	Self governed part	Self-governed part
specialMunicipality	Special municipality	Special Municipality
state	State	State
territorialUnit	Territorial unit	Territorial unit
territory	Territory	Territory
twoTierCounty	Two tier county	Two tier country
unitaryAuthority	Unitary authority	Unitary Authority
ward	Ward	Ward

A.3.66 The <<D2Enumeration>> "SupplyViewTypeEnum"

Define if space quantity is demarcated or estimated.

Table A.192— Values contained in the enumeration "SupplyViewTypeEnum"

Enumerated value name	Designation	Definition
spaceView	Space view	Each space is physically marked and identifiable.
vehicleView	Vehicle view	The vehicle capacity in an area is estimated based on calculating a capacity (i.e. curb length divided by a length of vehicle). The distributing party decides on the appropriate length of vehicle to use.

A.3.67 The <<D2Enumeration>> "TriggerTypeEnum"

A list of available trigger condition types.

Table A.193— Values contained in the enumeration "TriggerTypeEnum"

Enumerated value name	Designation	Definition
firstUse	First use	Trigger is applied on first use of the facility.
withTransaction	With transaction	Trigger condition is met when the transaction is completed.

A.3.68 The <<D2Enumeration>> "UnitOfMeasureArea"

A list of the supported units of area measure.

Table A.194— Values contained in the enumeration "UnitOfMeasureArea"

Enumerated value name	Designation	Definition
squareFeet	Square feet	Unit of Square feet.
squareMetres	Square metres	Unit of Metres Square.
squareYards	Square yards	Unit of Square yards.

A.3.69 The <<D2Enumeration>> "UnitOfMeasureDistanceEnum"

A list of the supported units of linear measure.

Table A.195— Values contained in the enumeration "UnitOfMeasureDistanceEnum"

Enumerated value name	Designation	Definition
foot	Foot	Imperial foot = 12 inches
metres	Metres	SI - metre.

A.3.70 The <<D2Enumeration>> "UnitOfMeasureWeightEnum"

A list of the supported units of measure.

Table A.196— Values contained in the enumeration "UnitOfMeasureWeightEnum"

Enumerated value name	Designation	Definition
poundsWeight	Pounds weight	1 lb
tonnesMetric	Tonnes metric	1000 kilogrammes

A.3.71 The <<D2Enumeration>> "UnitOfTimeEnum"

A list of the supported units of measures of time..

Table A.197— Values contained in the enumeration "UnitOfTimeEnum"

Enumerated value name	Designation	Definition
day	Day	unit of time, equal to 24 hours [source ISO8601]
hour	Hour	unit of time, equal to 60 minutes [source ISO8601]
minute	Minute	unit of time, equal to 60 seconds [source ISO8601]
second	Second	base unit of measurement of time in the International System of Units (SI) as defined by the International Committee of Weights and Measures (CIPM, i.e. Comité International des Poids et Mesures) [source ISO8601]

A.3.72 The <<D2Enumeration>> "UserTypeEnum"

Types of different users,for example used in the context of parking.

Table A.198— Values contained in the enumeration "UserTypeEnum"

Enumerated value name	Designation	Definition
allUsers	All users	All users.

Enumerated value name	Designation	Definition
commuters	Commuters	Commuters.
customers	Customers	Customers.
disabled	Disabled	Physically impaired people.
elderlyUsers	Elderly users	Elderly users.
employees	Employees	Employees.
families	Families	Families.
handicapped	Handicapped	Persons with deficiencies in their daily life.
hearingImpaired	Hearing impaired	People with difficulties to hear.
hotelGuests	Hotel guests	Hotel guests.
longTermParkers	Long term parkers	Long-term parker.
members	Members	Members.
men	Men	Men.
other	Other	Other.
overnightParkers	Overnight parkers	Overnight parker.
parkAndCycleUser	Park and cycle user	Park and cycle user.
parkAndRideUsers	Park and ride users	Users that are exchanging into public transport at a park and ride station.
parkAndWalkUser	Park and walk user	Park and walk user.
pensioners	Pensioners	Pensioners.
pregnantWomen	Pregnant women	Pregnant women.
registeredDisabledUsers	Registered disabled users	Registered disabled persons.
reservationHolders	Reservation holders	Those who have a valid reservation, e.g. for the duration of parking.

Enumerated value name	Designation	Definition
residents	Residents	Local residents.
seasonTicketHolders	Season ticket holders	Season ticket holders.
shoppers	Shoppers	Shoppers.
shortTermParkers	Short term parkers	Short-term parker.
sportEventAwaySupporters	Sport event away supporters	Sport event away supporters.
sportEventHomeSupporters	Sport event home supporters	Sport event home supporters.
staff	Staff	Staff.
students	Students	Students.
subscribers	Subscribers	Subscribers.
unknown	Unknown	Unknown.
visitors	Visitors	Visitors.
visuallyImpaired	Visually impaired	People with difficulties to see.
wheelchairUsers	Wheelchair users	Wheelchair users.
women	Women	Women.

A.3.73The <<D2Enumeration>> "ValidityStatusEnum"

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

Table A.199— Values contained in the enumeration "ValidityStatusEnum"

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.
planned	Planned	The described event, action or item is currently planned regardless of 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.

A.3.74The <<D2Enumeration>> "VehicleToGridCommunicationTypeEnum"

A list of communication types for communication between vehicles and the grid.

Table A.200— Values contained in the enumeration "VehicleToGridCommunicationTypeEnum"

Enumerated value name	Designation	Definition
iec619802	Iec619802	Communication according to IEC 61980-2.
iso15118	Iso15118	Communication according to ISO15118.
none	None	No communication between vehicle and the grid.
other	Other	Communication according to other guidelines/specifications.
unknown	Unknown	The type of communication is unknown.

A.3.75 The <<D2Enumeration>> "WeekOfMonthEnum"

Weeks of the month.

Table A.201— Values contained in the enumeration "WeekOfMonthEnum"

Enumerated value name	Designation	Definition
fifthWeekOfMonth	Fifth week of month	Fifth week of the month (at most only 3 days and non in February when not a leap year).
firstWeekOfMonth	First week of month	First week of the month.
fourthWeekOfMonth	Fourth week of month	Fourth week of the month.
secondWeekOfMonth	Second week of month	Second week of the month.
thirdWeekOfMonth	Third week of month	Third week of the month.

A.3.76 The <<D2Enumeration>> "WeightTypeEnum"

Type of weight - describing the meaning of a vehicle weight value

Table A.202— Values contained in the enumeration "WeightTypeEnum"

Enumerated value name	Designation	Definition
actual	Actual	The weight is the actual weight of a specific vehicle
maximumPermitted	Maximum permitted	The weight is the maximum permitted weight for a vehicle