Annex B

B.1 Data Dictionary for "EnergyInfrastructureStatus"

B.1.1 "Classes" package

B.1.1.1 Location of "Classes" package

The location of "Classes" package is:

— D2Payload/PayloadPublication/AfirEnergyInfrastructure/Classes

B.1.1.2 Classes of the "Classes" package

Table B.1— Classes of the "Classes" package

Class name	Designation	Definition	Stereotype	Abstract
ElectricChargingPointStatus	Electric charging point status	Dynamic information on the status of the charging point.	D2Class	no
EnergyInfrastructureSiteStatus	Energy infrastructure site status	Dynamic information on the status of the energy supplying site	D2Class	no
EnergyInfrastructureStationStatus	Energy infrastructure station status	Dynamic information on the status of the station.	D2Class	no
RefillPointStatus	Refill point status	Dynamic information on the status of the refill point.	D2Class	no
ServiceType	Service type	A specification of service types for the fuelling/charging and payment process	D2Class	no

B.1.1.3 Specializations of the "Classes" package

Table B.2— Specializations of the "Classes" package

Class name	Parent Class Name
ElectricChargingPointStatus	AfirEnergyInfrastructure.RefillPointStatus
EnergyInfrastructureSiteStatus	AfirFacilities.FacilityStatus

Class name	Parent Class Name
EnergyInfrastructureStationStatus	AfirFacilities.FacilityStatus
RefillPointStatus	AfirFacilities.FacilityStatus

B.1.1.4 Associations of the "Classes" package

Table B.3— Associations of the "Classes" package

Class name	Association end	Designation	Definition	Multiplicity	Target
EnergyInfrastructureSiteStatus	energyInfrastructureStationStatus	Energy infrastructure station status	Specify the status of a charging station with dynamic information.	0..*	AfirEnergyInfrastructure.EnergyInfrastructureStationStatus
	serviceType	Service type	The service type for the site. If no period is given, the currently available service is meant.	0..*	AfirEnergyInfrastructure.ServiceType
EnergyInfrastructureStationStatus	energyRateUpdate	Energy rate update	Energy rate update for the associated EnergyInfrastructureStationStatus	0..*	AfirEnergyInfrastructure.EnergyRateUpdate
	refillPointStatus	Refill point status	Specify the status of a refill point with dynamic information.	0..*	AfirEnergyInfrastructure.RefillPointStatus
	serviceType	Service type	The service type for the station. If no period is given, the currently available service is meant.	0..*	AfirEnergyInfrastructure.ServiceType
RefillPointStatus	energyRateUpdate	Energy rate update	Energy rate update for the associated RefillPointStatus	0..*	AfirEnergyInfrastructure.EnergyRateUpdate
	plannedRefillPointStatus	Planned refill point status	Planned refill point status for the associated RefillPointStatus	0..*	AfirEnergyInfrastructure.PlannedRefillPointStatus
	waitingTime	Waiting time	Estimated waiting time for customers without reservation	0..1	AfirFacilities.DurationValue

Class name	Association end	Designation	Definition	Multiplicity	Target
ServiceType	overallPeriod	Overall period	Overall period for the associated ServiceType	0..1	Common.OverallPeriod

B.1.1.5   Attributes of the "Classes" package

Table B.4— Attributes of the "Classes" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
ElectricChargingPointStatus	currentChargingPower	Current charging power	The current power in Watts.	0..1	AfirEnergyInfrastructure.Watt
	currentVoltage	Current voltage	Current used voltage.	0..1	AfirEnergyInfrastructure.Volt
	nextAvailableChargingSlots	Next available charging slots	One or more points of time in the future, at which the charging point will be available (not occupied and not reserved).	0..*	Common.DateTime
	remainingChargingTime	Remaining charging time	If known, the approximate remaining charging time for the current vehicle on this refill point can be specified.	0..1	Common.Seconds
EnergyInfrastructureSiteStatus	availableCarParkingPlaces	Available car parking places	Parking places available for cars.	0..1	Common.NonNegativeInteger
	availableTruckParkingPlaces	Available truck parking places	Parking places available for trucks.	0..1	Common.NonNegativeInteger
EnergyInfrastructureStationStatus	isAvailable	Is available	Information whether the specific station is available or not. It might be unavailable for example because of a fault, damage or maintenance. It does not inform, if the corresponding refill points are currently occupied or not.	0..1	Common.Boolean
RefillPointStatus	status	Status	Status of the refill point	1..1	AfirEnergyInfrastructure.RefillPointStatusEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	unitsInStock	Units in stock	Amount of delivery units still in stock (with delivery units as defined in the static information model)	0..1	AfirEnergyInfrastructure.Units
ServiceType	serviceType	Service type	Information on different service types for the fuelling/charging and payment process.	1..1	AfirEnergyInfrastructure.ServiceTypeEnum

B.1.2 "Classes" package

B.1.2.1   Location of "Classes" package

The location of "Classes" package is:

— D2Payload/Common/Classes

B.1.2.2   Classes of the "Classes" package

Table B.5— Classes of the "Classes" package

Class name	Designation	Definition	Stereotype	Abstract
HeaderInformation	Header information	Management information relating to the data contained within a publication.	D2Class	no
InternationalIdentifier	International identifier	An identifier/name whose range is specific to the particular country.	D2Class	no
PayloadPublication	Payload publication	A payload publication of traffic related information or associated management information created at a specific point in time that can be exchanged via a DATEX II interface.	D2ModelRoot	yes

B.1.2.3   Specializations of the "Classes" package

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

B.1.2.4   Associations of the "Classes" package

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

Class name	Association end	Designation	Definition	Multiplicity	Target
PayloadPublication	publicationCreator	Publication creator	Publication creator for the associated PayloadPublication	1..1	Common.Internat ionalIdentifier

B.1.2.5 Attributes of the "Classes" package

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

Class name	Attribute name	Designation	Definition	Multiplicity	Type
HeaderInformation	confidentiality	Confidentiality	The extent to which the related information may be circulated, according to the recipient type.	0..1	Common.Confide ntialityValueEnu m
	informationStatus	Information status	The status of the related information (real, test, exercise ....).	1..1	Common.Informa tionStatusEnum
InternationalIdentifier	country	Country	EN ISO 3166-1 two-character country code.	1..1	Common.Country Code
	nationalIdentifier	National identifier	Identifier or name unique within the specified country.	1..1	Common.String
PayloadPublication	defaultLanguage	Default language	The default language used throughout the payload publication.	1..1	Common.Languag e
	publicationTime	Publication time	Date/time at which the payload publication was created.	1..1	Common.DateTim e

B.1.3 "DataValue" package

B.1.3.1 Location of "DataValue" package

The location of "DataValue" package is:

— D2Payload/PayloadPublication/AfirFacilities/DataValue

B.1.3.2 Classes of the "DataValue" package

5

Table B.8— Classes of the "DataValue" package

Class name	Designation	Definition	Stereotype	Abstract
DurationValue	Duration value	A measured or calculated value of a period of time.	D2Class	no

B.1.3.3   Specializations of the "DataValue" package

Table B.9— Specializations of the "DataValue" package

Class name	Parent Class Name
DurationValue	Common.DataValue

B.1.3.4   Associations of the "DataValue" package

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

B.1.3.5   Attributes of the "DataValue" package

Table B.10— Attributes of the "DataValue" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
DurationValue	duration	Duration	A period of time expressed in seconds.	1..1	Common.Seconds

B.1.4 "DataValue" package

B.1.4.1   Location of "DataValue" package

The location of "DataValue" package is:

— D2Payload/Common/Classes/DataValue

B.1.4.2   Classes of the "DataValue" package

Table B.11— Classes of the "DataValue" package

Class name	Designation	Definition	Stereotype	Abstract
DataValue	Data value	A data value of something that can be measured or calculated. Any provided meta-data values specified in the attributes override any specified generic characteristics such as defined for a specific measurement in the MeasurementSiteTable.	D2Class	yes

B.1.4.3   Specializations of the "DataValue" package

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

B.1.4.4   Associations of the "DataValue" package

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

B.1.4.5   Attributes of the "DataValue" package

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

B.1.5 "EnergyInfrastructureStatusPublication" package

B.1.5.1   Location of "EnergyInfrastructureStatusPublication" package

The location of "EnergyInfrastructureStatusPublication" package is:

— D2Payload/PayloadPublication/AfirEnergyInfrastructure/EnergyInfrastructureStatusPublication

B.1.5.2   Classes of the "EnergyInfrastructureStatusPublication" package

Table B.12— Classes of the "EnergyInfrastructureStatusPublication" package

Class name	Designation	Definition	Stereotype	Abstract
EnergyInfrastructureStatusPublication	Energy infrastructure status publication	Dynamic information on the status of energy supplying sites.	D2Class	no
EnergyRateUpdate	Energy rate update	Updates a rate defined in the static part of the model.	D2Class	no
PlannedRefillPointStatus	Planned refill point status	Planned status information for a refill point, for example reservatons	D2Class	no

B.1.5.3 Specializations of the "EnergyInfrastructureStatusPublication" package

Table B.13— Specializations of the "EnergyInfrastructureStatusPublication" package

Class name	Parent Class Name
EnergyInfrastructureStatusPublication	Common.PayloadPublication

B.1.5.4 Associations of the "EnergyInfrastructureStatusPublication" package

Table B.14— Associations of the "EnergyInfrastructureStatusPublication" package

Class name	Association end	Designation	Definition	Multiplicity	Target
EnergyInfrastructureStatusPublication	energyInfrastructureSiteStatus	Energy infrastructure site status	Energy infrastructure site status for the associated EnergyInfrastructureStatusPublication	0..*	AfirEnergyInfrastructure.EnergyInfrastructureSiteStatus
	headerInformation	Header information	Header information for the associated EnergyInfrastructureStatusPublication	0..1	Common.HeaderInformation
EnergyRateUpdate	energyPrice	Energy price	Energy price for the associated EnergyRateUpdate	0..*	AfirEnergyInfrastructure.EnergyPrice
PlannedRefillPointStatus	overallPeriod	Overall period	Overall period for the associated PlannedRefillPointStatus	1..1	Common.OverallPeriod

B.1.5.5 Attributes of the "EnergyInfrastructureStatusPublication" package

Table B.15— Attributes of the "EnergyInfrastructureStatusPublication" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
EnergyInfrastructureStatusPublication	tableReference	Table reference	Reference to static tables containing the sites referenced in this publication.	0..*	Common.VersionedReference (aegi:EnergyInfrastructureTable)
EnergyRateUpdate	additionalInformation	Additional information	Free text field for additional information regarding the energy rates.	0..1	Common.MultilingualString

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	energyRateReference	Energy rate reference	Specifies the EnergyRate that is updated here.	1..1	Common.Reference (aegi:EnergyRate)
	lastUpdated	Last updated	The date/time at which this information was last updated.	1..1	Common.DateTime
PlannedRefillPointStatus	status	Status	Status of the refill point	1..1	AfirEnergyInfrastructure.RefillPointStatusEnum

B.1.6 "EnergyInfrastructureTablePublication" package

B.1.6.1 Location of "EnergyInfrastructureTablePublication" package

The location of "EnergyInfrastructureTablePublication" package is:

— D2Payload/PayloadPublication/AfirEnergyInfrastructure/EnergyInfrastructureTablePublication

B.1.6.2 Classes of the "EnergyInfrastructureTablePublication" package

Table B.16— Classes of the "EnergyInfrastructureTablePublication" package

Class name	Designation	Definition	Stereotype	Abstract
EnergyPrice	Energy price	A price definition for energy refueling	D2Class	no

B.1.6.3 Specializations of the "EnergyInfrastructureTablePublication" package

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

B.1.6.4 Associations of the "EnergyInfrastructureTablePublication" package

Table B.17— Associations of the "EnergyInfrastructureTablePublication" package

Class name	Association end	Designation	Definition	Multiplicity	Target
EnergyPrice	overallPeriod	Overall period	Overall period for the associated EnergyPrice	0..1	Common.OverallPeriod

B.1.6.5 Attributes of the "EnergyInfrastructureTablePublication" package

Table B.18— Attributes of the "EnergyInfrastructureTablePublication" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
EnergyPrice	additionalInformation	Additional information	Free text field for additional information regarding the price.	0..1	Common.Multilin gualString
	priceType	Price type	The type of price for the energy supply	1..1	AfirEnergyInfrast ructure.PriceType Enum
	taxIncluded	Tax included	[TRUE] Indication that tax to be applied is included [FALSE] indicates that the tax is added additionally to the total.	0..1	Common.Boolean
	taxRate	Tax rate	The percentage rate of tax to be applied.	0..1	Common.Percent age
	value	Value	The price for the energy according to the price type	1..1	AfirFacilities.Amo untOfMoney

B.1.7 "Facility" package

B.1.7.1 Location of "Facility" package

The location of "Facility" package is:

— D2Payload/PayloadPublication/AfirFacilities/Facility

B.1.7.2 Classes of the "Facility" package

Table B.19— Classes of the "Facility" package

Class name	Designation	Definition	Stereotype	Abstract
FacilityObjectStatus	Facility object status	Dynamic status information for a facility object.	D2Class	no
FacilityStatus	Facility status	Dynamic status information for a facility.	D2Class	no

B.1.7.3 Specializations of the "Facility" package

Table B.20— Specializations of the "Facility" package

Class name	Parent Class Name
FacilityStatus	AfirFacilities.FacilityObjectStatus

B.1.7.4 Associations of the "Facility" package

Table B.21— Associations of the "Facility" package

Class name	Association end	Designation	Definition	Multiplicity	Target
FacilityObjectStatus	fault	Fault	Fault for the associated FacilityObjectStatus	0..1	Common.Fault
	newOperatingHours	New operating hours	Overrides the operating hours information specified in the static part either with a new reference or with a new defined version. An existing version should not be changed.	0..1	AfirFacilities.OperatingHours
FacilityStatus	supplementalFacilityStatus	Supplemental facility status	Supplemental facility status for the associated FacilityStatus	0..*	AfirFacilities.SupplementalFacilityStatus

B.1.7.5 Attributes of the "Facility" package

Table B.22— Attributes of the "Facility" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
FacilityObjectStatus	lastUpdated	Last updated	Information on the time when the information has been updated the last time	0..1	Common.DateTime
	openingStatus	Opening status	The opening status of this facility (open or not).	0..1	AfirFacilities.OpeningStatusEnum
	operationStatus	Operation status	The operation status of this facility.	0..1	AfirFacilities.OperationStatusEnum
	reference	Reference	Reference to the corresponding static facility object.	1..1	Common.VersionedReference (afac:FacilityObject)

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	regularOperatingHoursInForce	Regular operating hours in force	If true, regular operating hours are in force (can be open or closed).	0..1	Common.Boolean
	statusDescription	Status description	A description for the status of this facility.	0..1	Common.MultilingualString

B.1.8 "Fault" package

B.1.8.1 Location of "Fault" package

The location of "Fault" package is:

— D2Payload/Common/Classes/Fault

B.1.8.2 Classes of the "Fault" package

Table B.23— Classes of the "Fault" package

Class name	Designation	Definition	Stereotype	Abstract
Fault	Fault	Information about a fault relating to a specific piece of equipment or process.	D2Class	no

B.1.8.3 Specializations of the "Fault" package

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

B.1.8.4 Associations of the "Fault" package

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

B.1.8.5 Attributes of the "Fault" package

Table B.24— Attributes of the "Fault" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
Fault	faultCreationTime	Fault creation time	The date and time at which the fault was originally recorded/reported.	0..1	Common.DateTime

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	faultDescription	Fault description	Textual description of the fault.	0..1	Common.Multilingual String
	faultIdentifier	Fault identifier	Unique identifier of the fault.	0..1	Common.String
	faultImpactSeverity	Fault impact severity	The severity of the fault in terms of how it affects the usability of the equipment or the reliability of the data generated by the equipment.	0..1	Common.FaultSeverityEnum
	faultLastUpdateTime	Fault last update time	The date and time at which the fault information as specified in this instance was last updated.	1..1	Common.DateTime
	faultUrgencyToRectify	Fault urgency to rectify	The urgency to rectify the fault.	0..1	Common.FaultUrgencyEnum
	manufacturerFaultCode	Manufacturer fault code	A manufacturer specific code for the fault.	0..1	Common.String

B.1.9 "OperatingHoursPublication" package

B.1.9.1   Location of "OperatingHoursPublication" package

The location of "OperatingHoursPublication" package is:

— D2Payload/PayloadPublication/AfirFacilities/OperatingHoursPublication

B.1.9.2   Classes of the "OperatingHoursPublication" package

Table B.25— Classes of the "OperatingHoursPublication" package

Class name	Designation	Definition	Stereotype	Abstract
ClosureInformation	Closure information	Information about temporary or permanent closure.	D2Class	no
OpenAllHours	Open all hours	Open or available all the time (24/7)	D2Class	no
OperatingHours	Operating hours	Operating hours, either by reference or by specification.	D2Class	yes
OperatingHoursByReference	Operating hours by reference	Operating hours information that is addressed via a reference.	D2Class	no

Class name	Designation	Definition	Stereotype	Abstract
OperatingHoursSpecification	Operating hours specification	A specification of operating hours (e.g. for a parking site, a service facility, an access or the availability for equipment).	D2VersionedIdentifiable	no
UndefinedOperatingHours	Undefined operating hours	There are no operating hours specified.	D2Class	no
UnknownOperatingHours	Unknown operating hours	The operating hours are not known.	D2Class	no

B.1.9.3 Specializations of the "OperatingHoursPublication" package

Table B.26— Specializations of the "OperatingHoursPublication" package

Class name	Parent Class Name
OpenAllHours	AfirFacilities.OperatingHours
OperatingHoursByReference	AfirFacilities.OperatingHours
OperatingHoursSpecification	AfirFacilities.OperatingHours
UndefinedOperatingHours	AfirFacilities.OperatingHours
UnknownOperatingHours	AfirFacilities.OperatingHours

B.1.9.4 Associations of the "OperatingHoursPublication" package

Table B.27— Associations of the "OperatingHoursPublication" package

Class name	Association end	Designation	Definition	Multiplicity	Target
OperatingHours	closureInformation	Closure information	Closure information for the associated OperatingHours	0..1	AfirFacilities.ClosureInformation
OperatingHoursSpecification	overallPeriod	Overall period	The specification of operating hours by an overall period combined with valid or exceptional periods.	1..1	Common.OverallPeriod

B.1.9.5 Attributes of the "OperatingHoursPublication" package

Table B.28— Attributes of the "OperatingHoursPublication" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
ClosureInformation	closedFrom	Closed from	Permanently or temporarily closed from the given date on. May lie in the future - in this case the scene is not closed now.	0..1	Common.DateTime
	permananentlyClosed	Permananently closed	Permanently closed, i.e. it is not intended to open again.	0..1	Common.Boolean
	temporarilyClosed	Temporarily closed	Temporarily closed for an unspecified period.	0..1	Common.Boolean
	temporarilyClosedUntil	Temporarily closed until	Temporarily closed until the given date (i.e. closure still includes this date).	0..1	Common.DateTime
OperatingHoursByReference	operatingHoursReference	Operating hours reference	The reference to an operating hours specification.	1..1	Common.VersionedReference (afac:OperatingHoursSpecification)
	operatingHoursTableReference	Operating hours table reference	Operation hours table in question defined by a reference.	0..1	Common.VersionedReference (afac:OperatingHoursTable)
OperatingHoursSpecification	label	Label	A label, name or identifier for this operating hours specification.	0..1	Common.String
	lastUpdated	Last updated	The date/time at which this information was last updated.	0..1	Common.DateTime
	operatingAllYear	Operating all year	The facility or organisation is not closed on a seasonal base.	0..1	Common.Boolean
	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	Common.Url

B.1.10 "SupplementalFacility" package

B.1.10.1 Location of "SupplementalFacility" package

The location of "SupplementalFacility" package is:

— D2Payload/PayloadPublication/AfirFacilities/SupplementalFacility

B.1.10.2 Classes of the "SupplementalFacility" package

Table B.29— Classes of the "SupplementalFacility" package

Class name	Designation	Definition	Stereotype	Abstract
SupplementalFacilityStatus	Supplemental facility status	Information on current status and availability of supplemental facilities (for example number of free electric charging stations).	D2Class	no

B.1.10.3 Specializations of the "SupplementalFacility" package

Table B.30— Specializations of the "SupplementalFacility" package

Class name	Parent Class Name
SupplementalFacilityStatus	AfirFacilities.FacilityObjectStatus

B.1.10.4 Associations of the "SupplementalFacility" package

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

B.1.10.5 Attributes of the "SupplementalFacility" package

Table B.31— Attributes of the "SupplementalFacility" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
SupplementalFacilityStatus	equipmentOperationStatus	Equipment operation status	Specifies whether this supplemental equipment is available / is in operation or not.	0..1	AfirFacilities.OperationStatusEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
	numberOfSubitemsOverride	Number of subitems override	Overrides the static value 'numberOfSubitems' (for example because of long- or midterm closures, such as renovation).	0..1	Common.NonNegativeInteger
	quantityOverride	Quantity override	Overrides the static quantity information (for example because of long- or midterm closures, such as renovation).	0..1	Common.NonNegativeInteger
	vacantSubitems	Vacant subitems	Sets the number of currently vacant elements of either equipment (e.g. free toilets) or service facility subitems (e.g. free restaurant places).	0..1	Common.NonNegativeInteger

B.1.11 "Validity" package

B.1.11.1 Location of "Validity" package

The location of "Validity" package is:

— D2Payload/Common/Classes/Validity

B.1.11.2 Classes of the "Validity" package

Table B.32— Classes of the "Validity" package

Class name	Designation	Definition	Stereotype	Abstract
CalendarWeekWithinMonth	Calendar week within month	Specification of periods defined by relevant calendar weeks in a month, see ISO8601. Note: Calendar weeks start with Monday. First week is the week containing the first of the month.	D2Class	no
DayWeekMonth	Day week month	Specification of periods defined by the intersection of days or instances of them, calendar weeks and months.	D2Class	no
InstanceOfDayWithinMonth	Instance of day within month	Specification of periods defined by the instance of a specific weekday within a month (e.g. 3rd Tuesday in May)	D2Class	no

Class name	Designation	Definition	Stereotype	Abstract
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

B.1.11.3 Specializations of the "Validity" package

Table B.33— Specializations of the "Validity" package

Class name	Parent Class Name
CalendarWeekWithinMonth	Common.DayWeekMonth
InstanceOfDayWithinMonth	Common.DayWeekMonth
PublicHoliday	Common.SpecialDay

B.1.11.4 Associations of the "Validity" package

Table B.34— 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..*	Common.Period

18

Class name	Association end	Designation	Definition	Multiplicity	Target
	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..*	Common.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..*	Common.DayWeekMonth
	recurringSpecialDay	Recurring special day	A recurring period in terms of special days.	0..*	Common.SpecialDay
	recurringTimePeriodOfDay	Recurring time period of day	A recurring period of a day.	0..*	Common.TimePeriodOfDay
SpecialDay	namedArea	Named area	Named area for the associated SpecialDay	0..*	Common.NamedArea

B.1.11.5 Attributes of the "Validity" package

Table B.35— Attributes of the "Validity" package

Class name	Attribute name	Designation	Definition	Multiplicity	Type
CalendarWeekWithinMonth	applicableCalenderWeekWithinMonth	Applicable calender week within month	Calender week in month. See ISO8601. "All weeks of the month" is expressed by not using the CalendarWeekOfMonth class. Note: Calendar weeks start with Monday. First week is the week containing the first of the month.	1..6	Common.CalendarWeekWithinMonthEnum
DayWeekMonth	applicableDay	Applicable day	Applicable day of the week. "All days of the week" is expressed by non-inclusion of this attribute.	0..7	Common.DayEnum
	applicableMonth	Applicable month	Applicable month of the year. "All months of the year" is expressed by non-inclusion of this attribute.	0..12	Common.MonthOfYearEnum
InstanceOfDayWithinMonth	applicableInstanceOfDayWithinMonth	Applicable instance of day within month	The specified integer instance of the specified applicable day within a month.	1..5	Common.InstanceOfDayEnum

Class name	Attribute name	Designation	Definition	Multiplicity	Type
OverallPeriod	overallEndTime	Overall end time	End of bounding period of validity defined by date and time.	0..1	Common.DateTime
	overallStartTime	Overall start time	Start of bounding period of validity defined by date and time.	1..1	Common.DateTime
Period	endOfPeriod	End of period	End of a period.	0..1	Common.DateTime
	periodName	Period name	The name of the period.	0..1	Common.MultilingualString
	startOfPeriod	Start of period	Start of period.	0..1	Common.DateTime
PublicHoliday	publicHolidayName	Public holiday name	Specification of a specific public holiday by its name.	1..1	Common.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	Common.Boolean
	publicEvent	Public event	Type of public event on this special day.	0..1	Common.PublicEventTypeEnum
	specialDayType	Special day type	Specification of a special day, for example schoolDay, publicHoliday, ...	1..1	Common.SpecialDayTypeEnum
TimePeriodOfDay	endTimeOfPeriod	End time of period	End of time period.	1..1	Common.Time
	startTimeOfPeriod	Start time of period	Start of time period.	1..1	Common.Time

B.2 Data Dictionary of <<D2Datatype>> for "EnergyInfrastructureStatus"

B.2.1 Introduction

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

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

A monetary value expressed to two decimal places.

B.2.3 The <<D2Datatype>> "Boolean"

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

B.2.4 The <<D2Datatype>> "CountryCode"

EN ISO 3166-1 alpha-2 two-letter country code

B.2.5 The <<D2Datatype>> "DateTime"

A combination of integer-valued year, month, day, hour, minute properties, a decimal-valued second property and a time zone property from which it is possible to determine the local time, the equivalent UTC time and the time zone offset from UTC.

B.2.6 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 $i \times 10^{-n}$ where i and n are integers and n >= 0.

B.2.7 The <<D2Datatype>> "Float"

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

B.2.8 The <<D2Datatype>> "Integer"

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

B.2.9 The <<D2Datatype>> "Language"

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

B.2.10 The <<D2Datatype>> "MultilingualString"

A multilingual string, whereby the same text may be expressed in more than one language.

B.2.11 The <<D2Datatype>> "NonNegativeInteger"

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

B.2.12 The <<D2Datatype>> "Percentage"

A ratio expressed as an amount per hundred, such that for example the value 100 represents the case where a quantity is equal to the reference value it is compared with, while the value 50 represents a ratio of one half.

B.2.13 The <<D2Datatype>> "Reference"

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

B.2.14 The <<D2Datatype>> "Seconds"

Seconds.

B.2.15 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.

B.2.16 The <<D2Datatype>> "Time"

An instant of time that recurs every day. The value space of time is the space of time of day values as defined in § 5.3 of [ISO 8601]. Specifically, it is a set of zero-duration daily time instances.

B.2.17 The <<D2Datatype>> "Units"

Amount in units, which are specified by unitTypeEnum.

B.2.18 The <<D2Datatype>> "Url"

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

B.2.19 The <<D2Datatype>> "VersionedReference"

A reference to an identifiable version managed object where the combination of the identifier and version is unique. It comprises an identifier (e.g. UUID), a version (NonNegativeInteger) and a string identifying the class of the referenced object.

B.2.20 The <<D2Datatype>> "Volt"

Volt.

B.2.21 The <<D2Datatype>> "Watt"

Watt.

B.3 Data Dictionary of <<D2Enumeration>> for "EnergyInfrastructureStatus"

B.3.1 Introduction

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

B.3.2 The <<D2Enumeration>> "CalendarWeekWithinMonthEnum"

Calendar week within month (see ISO8601).

Table B.36— Values contained in the enumeration "CalendarWeekWithinMonthEnum"

Enumerated value name	Designation	Definition
fifthWeek	Fifth week	Fifth week of the month.
firstWeek	First week	Calendar week containing the first of the month. Several days of the first week of the month may occur in the previous calendar month. By construction, the last week of a preceding month can also be the first week of a subsequent month.
fourthWeek	Fourth week	Fourth week of the month.
lastWeek	Last week	Last calendar week within month, regardless of its actual number. The last calendar week is the week beginning with Monday and containing the last of the month.
secondWeek	Second week	Second week of the month.
sixthWeek	Sixth week	Sixth week of the month.
thirdWeek	Third week	Third week of the month.

B.3.3 The <<D2Enumeration>> "ConfidentialityValueEnum"

Values of confidentiality.

Table B.37— Values contained in the enumeration "ConfidentialityValueEnum"

Enumerated value name	Designation	Definition
internalUse	Internal use	For internal use only of the recipient organisation.
noRestriction	No restriction	No restriction on usage.

B.3.4 The <<D2Enumeration>> "DayEnum"

Days of the week.

Table B.38— 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.

B.3.5 The <<D2Enumeration>> "FaultSeverityEnum"

Classification of the severity of faults.

Table B.39— Values contained in the enumeration "FaultSeverityEnum"

Enumerated value name	Designation	Definition
high	High	The fault is of high severity which will render the equipment unusable or any data generated by the equipment to be of no value.
low	Low	The fault is of low severity and has only limited impact on the usability of the equipment or the value of the data generated by the equipment.
medium	Medium	The fault is of medium severity which will significantly limit the usability of the equipment or devalue the usefulness of the data generated by the equipment.
unknown	Unknown	The fault is of unknown severity and hence its effect on the usability of the equipment or the usefulness of the data generated by the equipment can not be assessed.

B.3.6 The <<D2Enumeration>> "FaultUrgencyEnum"

Classification of the urgency to rectify a fault.

Table B.40— Values contained in the enumeration "FaultUrgencyEnum"

Enumerated value name	Designation	Definition
extremelyUrgent	Extremely urgent	It is extremely urgent to rectify this fault.
normal	Normal	The urgency to rectify this fault is normal.
unknown	Unknown	The urgency to rectify this fault is not known.
urgent	Urgent	It is urgent to rectify this fault.

B.3.7 The <<D2Enumeration>> "InformationStatusEnum"

Status of the related information (i.e. real, test or exercise).

Table B.41— Values contained in the enumeration "InformationStatusEnum"

Enumerated value name	Designation	Definition
real	Real	The information is real. It is not a test or exercise.
test	Test	The information is part of a test for checking the exchange of this type of information.

B.3.8 The <<D2Enumeration>> "InstanceOfDayEnum"

Instances of a day of the week in a month

Table B.42— Values contained in the enumeration "InstanceOfDayEnum"

Enumerated value name	Designation	Definition
fifthInstance	Fifth instance	Fifth instance of specified day of week in month.
firstInstance	First instance	First instance of specified day of week in month.
fourthInstance	Fourth instance	Fourth instance of specified day of week in month.
lastInstance	Last instance	Last instance of specified day of week in month (regardless its actual instance number).
secondInstance	Second instance	Second instance of specified day of week in month.
thirdInstance	Third instance	Third instance of specified day of week in month.

B.3.9 The <<D2Enumeration>> "MonthOfYearEnum"

A list of the months of the year.

Table B.43— Values contained in the enumeration "MonthOfYearEnum"

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.
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.

B.3.10 The <<D2Enumeration>> "OpeningStatusEnum"

The opening status of some entity (e.g. parking site, service facility, access,...)

Table B.44— Values contained in the enumeration "OpeningStatusEnum"

Enumerated value name	Designation	Definition
closed	Closed	Closed, usually because of the regular opening times.
closedOnHoliday	Closed on holiday	Closed because of a holiday or holidays.
closedOnMaintenance	Closed on maintenance	Closed because of maintenance activities.
open	Open	Open resp. available.
openWithServiceLimitation	Open with service limitation	Open, but with limited services.
other	Other	Other.
statusUnknown	Status unknown	The opening status is unknown.
temporarilyClosed	Temporarily closed	Temporarily closed.

B.3.11 The <<D2Enumeration>> "OperationStatusEnum"

Specifies whether some facility, scenario or equipment is in operation or not.

Table B.45— Values contained in the enumeration "OperationStatusEnum"

Enumerated value name	Designation	Definition
inOperation	In operation	The specified element is in operation right now.
limitedOperation	Limited operation	The specified element is in operation on a limited basis.
notInOperation	Not in operation	The specified element is not operating right now.
notInOperationAbnormal	Not in operation abnormal	The specified element is not operating due to abnormal conditions (holidays, restoration-works, long-term closure, ...).
technicalDefect	Technical defect	The specified element is not in operation due to a technical defect.
unknown	Unknown	There is no information about the operation status.

B.3.12 The <<D2Enumeration>> "PriceTypeEnum"

The type of price for energy.

Table B.46— Values contained in the enumeration "PriceTypeEnum"

Enumerated value name	Designation	Definition
basePrice	Base price	The given price is a base price, which has to be added.
flatRate	Flat rate	The given price is a flatrate price, independent of the fueled amunt.
free	Free	Charging or refueling is free.
other	Other	Other method of pricing.
pricePerKWh	Price per k wh	The given price is per kWh of electric energy.
pricePerMinute	Price per minute	The given price is per minute of charging.

B.3.13 The <<D2Enumeration>> "PublicEventTypeEnum"

Types of public events.

Table B.47— Values contained in the enumeration "PublicEventTypeEnum"

Enumerated value name	Designation	Definition
agriculturalShow	Agricultural show	Agricultural show or event which could disrupt traffic.
airShow	Air show	Air show or other aeronautical event which could disrupt traffic.
artEvent	Art event	Art event
athleticsMeeting	Athletics meeting	Athletics event that could disrupt traffic.
ballGame	Ball game	Ball game event that could disrupt traffic.
baseballGame	Baseball game	Baseball game event that could disrupt traffic.
basketballGame	Basketball game	Basketball game event that could disrupt traffic.
beerFestival	Beer festival	Beer festival
bicycleRace	Bicycle race	Bicycle race that could disrupt traffic.
boatRace	Boat race	Regatta (boat race event of sailing, powerboat or rowing) that could disrupt traffic.
boatShow	Boat show	Boat show which could disrupt traffic.
boxingTournament	Boxing tournament	Boxing event that could disrupt traffic.
bullFight	Bull fight	Bull fighting event that could disrupt traffic.
ceremonialEvent	Ceremonial event	Formal or religious act, rite or ceremony that could disrupt traffic.
commercialEvent	Commercial event	Commercial event which could disrupt traffic.
concert	Concert	Concert event that could disrupt traffic.
cricketMatch	Cricket match	Cricket match that could disrupt traffic.
culturalEvent	Cultural event	Cultural event which could disrupt traffic.
exhibition	Exhibition	Major display or trade show which could disrupt traffic.

Enumerated value name	Designation	Definition
fair	Fair	Periodic (e.g. annual), often traditional, gathering for entertainment or trade promotion, which could disrupt traffic.
festival	Festival	Celebratory event or series of events which could disrupt traffic.
filmFestival	Film festival	Film festival
filmTVMaking	Film TV making	Film or TV making event which could disrupt traffic.
fireworkDisplay	Firework display	Firework display
flowerEvent	Flower event	Flower event
foodFestival	Food festival	Food festival
footballMatch	Football match	Football match that could disrupt traffic.
funfair	Funfair	Periodic (e.g. annual), often traditional, gathering for entertainment, which could disrupt traffic.
gardeningOrFlowerShow	Gardening or flower show	Gardening and/or flower show or event which could disrupt traffic.
golfTournament	Golf tournament	Golf tournament event that could disrupt traffic.
hockeyGame	Hockey game	Hockey game event that could disrupt traffic.
horseRaceMeeting	Horse race meeting	Horse race meeting that could disrupt traffic.
internationalSportsMeeting	International sports meeting	Large sporting event of an international nature that could disrupt traffic.
majorEvent	Major event	Significant organised event either on or near the roadway which could disrupt traffic.
marathon	Marathon	Marathon, cross-country or road running event that could disrupt traffic.
market	Market	Periodic (e.g. weekly) gathering for buying and selling, which could disrupt traffic.
match	Match	Sports match of unspecified type that could disrupt traffic.
motorShow	Motor show	Motor show which could disrupt traffic.

Enumerated value name	Designation	Definition
motorSportRaceMeeting	Motor sport race meeting	Motor sport race meeting that could disrupt traffic.
openAirConcert	Open air concert	Open air concert
other	Other	Other than as defined in this enumeration.
parade	Parade	Formal display or organised procession which could disrupt traffic.
procession	Procession	An organised procession which could disrupt traffic.
raceMeeting	Race meeting	Race meeting (other than horse or motor sport) that could disrupt traffic.
rugbyMatch	Rugby match	Rugby match that could disrupt traffic.
severalMajorEvents	Several major events	A series of significant organised events either on or near the roadway which could disrupt traffic.
show	Show	Entertainment event that could disrupt traffic.
showJumping	Show jumping	Horse showing jumping and tournament event that could disrupt traffic.
soundAndLightShow	Sound and light show	Sound and light show.
sportsMeeting	Sports meeting	Sports event of unspecified type that could disrupt traffic.
stateOccasion	State occasion	Public ceremony or visit of national or international significance which could disrupt traffic.
streetFestival	Street festival	Street festival
tennisTournament	Tennis tournament	Tennis tournament that could disrupt traffic.
theatricalEvent	Theatrical event	Theatrical event
tournament	Tournament	Sporting event or series of events of unspecified type lasting more than one day which could disrupt traffic.
tradeFair	Trade fair	A periodic (e.g. annual), often traditional, gathering for trade promotion, which could disrupt traffic.
unknown	Unknown	Service provider does not know at time of message generation.

Enumerated value name	Designation	Definition
waterSportsMeeting	Water sports meeting	Water sports meeting that could disrupt traffic.
wineFestival	Wine festival	Wine festival
winterSportsMeeting	Winter sports meeting	Winter sports meeting or event (e.g. skiing, ski jumping, skating) that could disrupt traffic.

B.3.14 The <<D2Enumeration>> "RefillPointStatusEnum"

The status of a refill point.

Table B.48— 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.
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).

Enumerated value name	Designation	Definition
unknown	Unknown	The status of the refill point is unknown (can also be offline).

B.3.15 The <<D2Enumeration>> "ServiceTypeEnum"

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

Table B.49— Values contained in the enumeration "ServiceTypeEnum"

Enumerated value name	Designation	Definition
physicalAttendance	Physical attendance	Presence of physical persons attending the recharging or refuelling station.
unattended	Unattended	Unattended station, fuelling and payment to be done without assistance.

B.3.16 The <<D2Enumeration>> "SpecialDayTypeEnum"

Collection of special types of days.

Table B.50— 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.