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| CHANGE REQUEST | |
| Meeting ID:\* | RDM#51 |
| Source:\* | Cyrille Bareau, Orange, [cyrille.bareau@orange.com](mailto:cyrille.bareau@orange.com)  Bob Flynn, Exacta, [bob.flynn@exactagss.com](mailto:bob.flynn@exactagss.com)  Andreas Kraft, Deutsche Telekom, [Andreas.Kraft@t-systems.com](mailto:Andreas.Kraft@t-systems.com)  Marianne Mohali, Orange, [marianne.mohali@orange.com](mailto:marianne.mohali@orange.com) |
| Date:\* | 2021-09-07 |
| Reason for Change/s:\* | See the introduction. |
| CR against: Release\* | Release 4 |
| CR against: WI\* | Active WI-0084  MNT maintenance / < Work Item number(optional)>  Is this a mirror CR? Yes  No  mirror CR number: (Note to Rapporteur - use latest agreed revision)  STE Small Technical Enhancements / < Work Item number (optional)>  Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TS-0023 4.8.0 |
| Clauses \* | New clauses 5.3.9.1 to 5.3.9.4  Changed clauses 5.2.2, 6.2.2, 6.2.7, 6.3.2, 6.3.3, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.4.5, 6.5.1 |
| Type of change: \* | Editorial change  Bug Fix or Correction  Change to existing feature or functionality  New feature or functionality  Only ONE of the above shall be ticked |
| Other TS/TR(s) impacted | N/A |
| Post Freeze checking:\* | This CR contains only essential changes and corrections? YES  NO  This CR may break backwards compatibility with the last approved version of the TS? YES  NO |
| Template Version: January 2020 (do not modify) | |

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GUIDELINES for Change Requests:

Provide an informative introduction containing the problem(s) being solved, and a summary list of proposals.

Each CR should contain changes related to only one particular issue/problem.

If this is a correction, and the change applies to previous releases, a separate “mirror CR” should be posted at the same time as this CR

Mirror CR: applies only when the text, including clause numbering are exactly the same.

Companion CR: applies when the change means the same but the baselines differ in some way (e.g. clause number).

Follow the principle of completeness, where all changes related to the issue or problem within a deliverable are simultaneously proposed to be made e.g. a change impacting 5 tables should not only include a proposal to change only 3 tables. Include any changes to references, definitions, and abbreviations in the same deliverable.

Follow the drafting rules.

All pictures must be editable.

Check spelling and grammar.

Use change bars for modifications.

The change should include the current and surrounding clauses to clearly show where a change is located and to provide technical context of the proposed change. Additions of complete clauses need not show surrounding clauses as long as the proposed clause number clearly shows where the proposed new clause is located.

Multiple changes in a single CR shall be clearly separated by horizontal lines with embedded text such as, start of change 1, end of change 1, start of new clause, end of new clause.

When subsequent changes are made to the content of a CR, then the accepted version should not show changes over changes. The accepted version of the CR should only show changes relative to the baseline approved text.

## Introduction

In SDT ModuleClasses, datapoints represent the **functional** information of a service (e.g. *humidity* for a *airQualitySensor*). Device properties represent **non-functional** information (e.g. *serialNumber*).

But there is a need for representing contextual **metadata** information that is horizontal (not specific to a module), dynamic, writable, ‘fuzzy’… Examples: metadata ‘open’ strings, location, origin, precision, localized / friendly name, etc.

Currently, 2 solutions are possible:

* use labels, but it lacks semantic, normalized information.
* use <semanticDescriptor>, but it is a heavy price (for both the implementor and the developer).

We propose to define a new domain called metadata, which contains various meta-informational modules, and make these modules otional children of each flexContainer mapping a SDT device, subdevice, module or action.

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### Description rules for Module Classes and DeviceClasses

### …

* Rule 4: Definition of the Domain:
* The Domains are specified as “org.onem2m.[domain]”, where [domain] is one of the domain names defined in 6.4.1. The name is chosen according to the domain in which the element is defined.
* The sub-domains for DeviceClasses, SubDevices, ModuleClasses and Actions shall be specified as "org.onem2m.[domain].device", “org.onem2m.[domain].subdevice”, “org.onem2m.[domain].moduleclass”, and “org.onem2m.[domain].action” respectively.

### …

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### Metadata Domain

#### features

This ModuleClass provides metadata information on the parent device.

Table 5.3.9.1-1: DataPoints of features ModuleClass

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Type | R/W | Optional | Unit | Documentation |
| metadata | list of xs:string | RW | true |  | Free metadata information. |
| precision | xs:integer | R | true | % | Approximated precision of the device data. |
| reliability | xs:integer | R | true | % | Approximated reliability of the device data. |
| weight | xs:float | R | true | g | The weight of the device. |
| size | list of xs:float | R | true | cm | The size of the device [length, width, height]. |

#### location

This ModuleClass provides information on the location of the parent device.

Table 5.3.9.2-1: DataPoints of location ModuleClass

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Type | R/W | Optional | Unit | Documentation |
| postalAddress | xs:string | RW | true |  | Postal address |
| geoJSON | xs:string | R | true |  | Coordinates in GeoJSON format |
| friendlyLocation | xs:string | RW | true |  | Friendly location (e.g. ‘kitchen’) |

#### localization

This ModuleClass provides capabilities for localizing friendly names.

Table 5.3.9.3-1: DataPoints of localization ModuleClass

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Type | R/W | Optional | Unit | Documentation |
| locale | xs:string | R | false |  | Code in ISO 639-1 |
| friendlyName | xs:string | RW | true |  | Friendly name for the parent device, in the given locale. |
| description | xs:string | RW | true |  | Friendly description for the parent device, in the given locale. |
| friendlyLocation | xs:string | RW | true |  | Friendly location, in the given locale (e.g. ‘cuisine’ for locale ‘fr’). |

#### origin

This ModuleClass provides information on the origin of the parent device data.

Table 5.3.9.4-1: DataPoints of origin ModuleClass

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Type | R/W | Optional | Unit | Documentation |
| originID | xs:string | R | true |  | ID of the original data |
| dataType | xs:string | R | true |  | Data type of the original data |
| dataSourceID | xs:string | R | true |  | ID of the data source that created the original data |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 3 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 6.2.2 Resource mapping for Device model

…

* Rule 1-10: Each <flexContainer> associated to a Device model may have as child resource any <flexContainer> associated to a ModuleClass model of the Metadata domain defined in clause 5.3.9.

In other words, all devices implicitly have the following lines in their modules table:

Table 5.5.x.y-1: Modules of deviceXXX model

|  |  |  |  |
| --- | --- | --- | --- |
| Module Instance Name | Module Class Name | Multiplicity | Description |
| <any module in mdd domain> | <any module in mdd domain> | 0..N | See clauses 5.3.9. |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 3 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 4 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 6.2.7 Resource mapping for SubDevice model

…

Rule 7-5: Each <flexContainer> associated to a SubDevice model may have as child resource any <flexContainer> associated to a ModuleClass model of the Metadata domain defined in clause 5.3.9.In other words, all subdevices implicitly have the following lines in their modules table:

Table 5.4.x.y-1: Modules of subDeviceXXX model

|  |  |  |  |
| --- | --- | --- | --- |
| Module Instance Name | Module Class Name | Multiplicity | Description |
| <any module in mdd domain> | <any module in mdd domain> | 0..N | See clauses 5.3.9. |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 4 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 5 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 6.3.2 Resource types

…

Table 6.3.2‑3: Specialization type short names (ModuleClasses and Module Instances)

| Resource Type Name | Short Name |
| --- | --- |
| 3DPrinter | ***thDPr*** |
| acousticSensor | ***acoSr*** |
| airCleanOperationMode | ***aCOM0*** |
| airConJobMode | ***aCJMe*** |
| airConOperationMode | ***aCOMe*** |
| airFlow | ***airFw*** |
| airPurifierJobMode | ***aPJMe*** |
| airPurifierOperationMode | ***aPOMe*** |
| airQualitySensor | ***aiQSr*** |
| alarmSpeaker | ***alaSr*** |
| audioVolume | ***audVe*** |
| autoDocumentFeeder | ***auDFr*** |
| battery | ***bat*** |
| binaryObject | ***binOt*** |
| binarySwitch | ***binSh*** |
| bioElectricalImpedanceAnalysis | ***bEIAs*** |
| bodyCompositionAnalyser | ***boCAr*** |
| boiler | ***boilr*** |
| boilingSwitch | ***boiSh*** |
| brewing | ***brewg*** |
| brewingSwitch | ***breSh*** |
| brightness | ***brigs*** |
| channel | ***chanl*** |
| clock | ***clock*** |
| clothesDryerJobMode | ***cDJMe*** |
| clothesDryerOperationMode | ***cDOMe*** |
| clothesWasherDryerJobMode | ***cWDJM*** |
| clothesWasherDryerOperationMode | ***cWDOM*** |
| clothesWasherJobMode | ***cWJMe*** |
| clothesWasherJobModeOption | ***cWJMO*** |
| clothesWasherOperationMode | ***cWOMe*** |
| colour | ***color*** |
| colourSaturation | ***colSn*** |
| controlPanelLock | ***coPLk*** |
| cookerHoodJobMode | ***cHJMe*** |
| credentials | ***creds*** |
| customTemperature | ***cusTe*** |
| dataGenerationTime | ***dgt*** |
| dehumidifierJobMode | ***deJMe*** |
| dehumidifierOperationMode | ***deOMe*** |
| dishWasherJobMode | ***dWJMe*** |
| dmAgent | ***dmAgt*** |
| dmAreaNwkDeviceInfo | ***dANDo*** |
| dmCapability | ***dmCay*** |
| dmDataModelIO | ***dDMIO*** |
| dmDeviceInfo | ***dmDIo*** |
| dmEventLog | ***dmELg*** |
| dmFirmware | ***dmFie*** |
| dmPackage | ***dmPae*** |
| dmSoftware | ***dmSoe*** |
| dmStorage | ***dmSte*** |
| doorLock | ***dooLk*** |
| doorlock | ***doork*** |
| doorStatus | ***dooSs*** |
| electricVehicleConnector | ***elVCr*** |
| energyConsumption | ***eneCn*** |
| energyGeneration | ***eneGn*** |
| faultDetection | ***fauDn*** |
| features | ***feats*** |
| filterInfo | ***filIo*** |
| foaming | ***foamg*** |
| fridgeTemperature | ***friTe*** |
| frozenTemperature | ***froTe*** |
| geoLocation | ***geoLn*** |
| glucometer | ***glucr*** |
| grinder | ***grinr*** |
| heatingZone | ***heaZe*** |
| height | ***heigt*** |
| hotWaterSupply | ***hoWSy*** |
| impactSensor | ***impSr*** |
| keepWarm | ***keeWm*** |
| keypad | ***keypd*** |
| liquidLevel | ***liqLl*** |
| liquidRemaining | ***liqRg*** |
| location | ***locan*** |
| localization | ***loca0*** |
| lock | ***lock*** |
| mediaInput | ***medIt*** |
| mediaOutput | ***medOt*** |
| mediaSelect | ***medSt*** |
| milkFoaming | ***milFg*** |
| milkQuantity | ***milQy*** |
| milkStatus | ***milSs*** |
| motionSensor | ***motSr*** |
| numberValue | ***numVe*** |
| openLevel | ***opeLl*** |
| operationMode | ***opeMe*** |
| origin | ***orign*** |
| overcurrentSensor | ***oveSr*** |
| oximeter | ***oximr*** |
| ozoneMeter | ***ozoMr*** |
| phoneCall | ***phoCl*** |
| playerControl | ***plaCl*** |
| powerSave | ***powS0*** |
| printerRunState | ***prRSe*** |
| printQueue | ***priQe*** |
| pulsemeter | ***pulsr*** |
| pushButton | ***pusBn*** |
| recorder | ***recor*** |
| refrigeration | ***refrn*** |
| relativeHumidity | ***relHy*** |
| remoteControlEnable | ***reCEe*** |
| robotCleanerJobMode | ***rCJMe*** |
| robotCleanerOperationMode | ***rCOMe*** |
| runState | ***runSe*** |
| scannerRunState | ***scRSe*** |
| securityMode | ***secMe*** |
| sessionDescription | ***sesDn*** |
| signalStrength | ***sigSh*** |
| sleepTimer | ***sleTr*** |
| smokeSensor | ***smoSr*** |
| sphygmomanometer | ***sphyr*** |
| spinLevel | ***spiLl*** |
| steamClosetJobMode | ***sCJMe*** |
| steamClosetOperationMode | ***sCOMe*** |
| televisionChannel | ***telCl*** |
| temperature | ***tempe*** |
| temperatureAlarm | ***temAm*** |
| textMessage | ***texMe*** |
| timer | ***timer*** |
| turbo | ***turbo*** |
| uvSensor | ***uveSr*** |
| waterFilterInfo | ***waFIo*** |
| waterFlow | ***watFw*** |
| waterSensor | ***watSr*** |
| waterStatus | ***watSs*** |
| weight | ***weigt*** |

### 6.3.3 Resource attributes for properties and data points

In protocol bindings resource attributes names for properties of module classes shall be translated into short names of Table 6.3.3‑1.

Table 6.3.3‑1: Resource attribute short names (ModuleClass properties)

|  |  |  |
| --- | --- | --- |
| Attribute Name | Occurs in | Short Name |
| chargingCapacity | electricVehicleConnector | ***chaCy*** |
| dischargingCapacity | electricVehicleConnector | ***disCy*** |
| electricEnergy | battery | ***eleEy*** |
| material | battery | ***matel*** |
| voltage | battery | ***volte*** |

In protocol bindings resource attributes names for data points of module classes shall be translated into short names of Table 6.3.3‑2.

Table 6.3.3‑2: Resource attribute short names (ModuleClass data points)

|  |  |  |
| --- | --- | --- |
| Attribute Name | Occurs in | Short Name |
| absoluteEnergyConsumption | energyConsumption | ***abECn*** |
| absoluteStartTime | timer | ***abSTe*** |
| absoluteStopTime | timer | ***abST0*** |
| acousticStatus | acousticSensor | ***acoSs*** |
| address | location | ***addrs*** |
| adfStates | autoDocumentFeeder | ***adfSs*** |
| alarm | motionSensor, smokeSensor, temperatureAlarm, waterSensor | ***alarm*** |
| alarmStatus | alarmSpeaker | ***alaSs*** |
| altitude | geoLocation | ***altie*** |
| automode | airFlow | ***autoe*** |
| availableChannels | televisionChannel | ***avaCs*** |
| basalMetabolism | bodyCompositionAnalyser | ***basMm*** |
| bath | hotWaterSupply | ***bath*** |
| batteryThreshold | battery | ***batTd*** |
| blue | colour | ***blue*** |
| bmi | bodyCompositionAnalyser | ***bmi*** |
| bodyLength | bodyCompositionAnalyser | ***bodLh*** |
| bone | bioElectricalImpedanceAnalysis | ***bone*** |
| brightness | brightness | ***brigs*** |
| callerID | phoneCall | ***calID*** |
| callState | phoneCall | ***calSe*** |
| capacity | battery | ***capay*** |
| ch2o | airQualitySensor | ***ch2o*** |
| channelId | televisionChannel | ***chaId*** |
| channelName | televisionChannel | ***chaNe*** |
| charging | battery | ***charg*** |
| chargingCapacity | electricVehicleConnector | ***chaCy*** |
| co | airQualitySensor | ***co*** |
| co2 | airQualitySensor | ***co2*** |
| coarseness | grinder | ***coars*** |
| code | faultDetection, filterInfo | ***code*** |
| coldWash | clothesWasherJobModeOption | ***colWh*** |
| colourSaturation | colourSaturation | ***colSn*** |
| component | dmFirmware | ***compt*** |
| concentration | glucometer | ***concn*** |
| contextCarbohydratesAmount | glucometer | ***coCAt*** |
| contextCarbohydratesSource | glucometer | ***coCSe*** |
| contextExercise | glucometer | ***conEe*** |
| contextHealth | glucometer | ***conHh*** |
| contextLocation | glucometer | ***conLn*** |
| contextMeal | glucometer | ***conMl*** |
| contextMedication | glucometer | ***conMn*** |
| contextTester | glucometer | ***conTr*** |
| country | dmDeviceInfo | ***couny*** |
| cpuUsage | dmAgent | ***cpuUe*** |
| cupsNumber | brewing | ***cupNr*** |
| current | energyConsumption | ***currt*** |
| currentAdfState | autoDocumentFeeder | ***cuASe*** |
| currentDate | clock | ***curDe*** |
| currentJobMode | airConJobMode, airPurifierJobMode, clothesDryerJobMode, clothesWasherDryerJobMode, clothesWasherJobMode, cookerHoodJobMode, dehumidifierJobMode, dishWasherJobMode, robotCleanerJobMode, steamClosetJobMode | ***cuJMe*** |
| currentJobModeName | airConJobMode, airPurifierJobMode, clothesDryerJobMode, clothesWasherDryerJobMode, clothesWasherJobMode, cookerHoodJobMode, dehumidifierJobMode, dishWasherJobMode, robotCleanerJobMode, steamClosetJobMode | ***cJMNe*** |
| currentJobState | runState | ***cuJSe*** |
| currentMachineState | runState | ***cuMSe*** |
| currentPlayerMode | playerControl | ***cuPMe*** |
| currentPlayerModeName | playerControl | ***cPMNe*** |
| currentSecurityMode | securityMode | ***cuSMe*** |
| currentTemperature | temperature | ***curT0*** |
| currentTime | clock | ***curTe*** |
| currentTimeZone | clock | ***cuTZe*** |
| currentValue | smokeSensor | ***crv*** |
| data | dmEventLog | ***data*** |
| dataModelType | dmDataModelIO | ***daMTe*** |
| dataSourceID | origin | ***daSID*** |
| dataType | origin | ***datTe*** |
| defaultValue | numberValue, textMessage | ***defVe*** |
| defrost | refrigeration | ***defrt*** |
| description | faultDetection, dmDeviceInfo, localization | ***dc*** |
| desiredHumidity | relativeHumidity | ***desHy*** |
| detectedTime | overcurrentSensor, smokeSensor | ***detTe*** |
| diastolicPressure | sphygmomanometer | ***diaPe*** |
| discharging | battery | ***discg*** |
| dischargingCapacity | electricVehicleConnector | ***disCy*** |
| doorState | doorStatus | ***dooSe*** |
| duration | overcurrentSensor, recorder | ***dur*** |
| electricEnergy | battery | ***eleEy*** |
| enabled | dmEventLog | ***enabd*** |
| energy | pulsemeter | ***enery*** |
| estimatedTimeToEnd | timer | ***eTTEd*** |
| extraRinse | clothesWasherJobModeOption | ***extRe*** |
| fat | bioElectricalImpedanceAnalysis | ***fat*** |
| fatFreeMass | bodyCompositionAnalyser | ***faFMs*** |
| fiability | features | ***fiaby*** |
| filterLifetime | filterInfo | ***filLe*** |
| foamingStrength | foaming | ***foaSh*** |
| frequency | energyConsumption | ***freqy*** |
| friendlyName | dmDeviceInfo, localization | ***friNe*** |
| friendlyLocation | location, localization | ***friLn*** |
| fwVersion | dmDeviceInfo | ***fweVn*** |
| generationSource | energyGeneration | ***genSe*** |
| geoJSON | location | geoJN |
| grainsRemaining | grinder | ***graRg*** |
| green | colour | ***green*** |
| hash | binaryObject | ***hash*** |
| hba1c | glucometer | ***hba1c*** |
| heading | geoLocation | ***headg*** |
| headingAccuracy | geoLocation | ***heaAy*** |
| heatingLevel | heatingZone | ***heaLl*** |
| height | height | ***heigt*** |
| horizontalAccuracy | geoLocation | ***horAy*** |
| horizontalDirection | airFlow | ***horDn*** |
| hwVersion | dmDeviceInfo | ***hweVn*** |
| impactDirectionHorizontal | impactSensor | ***imDHl*** |
| impactDirectionVertical | impactSensor | ***imDVl*** |
| impactLevel | impactSensor | ***impLl*** |
| impactStatus | impactSensor | ***impSs*** |
| impedance | bodyCompositionAnalyser | ***impee*** |
| jobModes | airConJobMode, airPurifierJobMode, clothesWasherDryerJobMode, clothesWasherJobMode, cookerHoodJobMode, dehumidifierJobMode, dishWasherJobMode, robotCleanerJobMode steamClosetJobMode, | ***jobMs*** |
| jobStates | runState | ***jobSs*** |
| kcal | bioElectricalImpedanceAnalysis | ***kcal*** |
| keyNumber | keypad | ***keyNr*** |
| latitude | geoLocation | ***latie*** |
| level | battery | ***lvl*** |
| light | alarmSpeaker | ***light*** |
| liquidLevel | liquidLevel | ***liqLl*** |
| liquidRemaining | liquidRemaining | ***liqRg*** |
| locale | location | ***locae*** |
| lock | lock | ***lock*** |
| loginName | credentials | ***logNe*** |
| longitude | geoLocation | ***longe*** |
| loudness | acousticSensor | ***louds*** |
| lowBattery | battery | ***lowBy*** |
| lqi | signalStrength | ***lqi*** |
| machineStates | runState | ***macSs*** |
| manufacturer | dmDeviceInfo | ***manur*** |
| manufacturerDetailsLink | dmDeviceInfo | ***maDLk*** |
| manufacturingDate | dmDeviceInfo | ***manDe*** |
| material | battery | ***matel*** |
| maxHeatingLevel | heatingZone | ***maHLl*** |
| maxLength | textMessage | ***maxLh*** |
| maxLevel | openLevel | ***maxLl*** |
| maxSpeed | airFlow | ***maxSd*** |
| maxValue | audioVolume, numberValue, ozoneMeter, temperature | ***maxVe*** |
| meanPressure | sphygmomanometer | ***meaPe*** |
| measuringScope | energyConsumption | ***meaSe*** |
| mediaID | mediaSelect | ***medID*** |
| mediaName | mediaSelect | ***medNe*** |
| mediaType | mediaSelect | ***medTe*** |
| memorySize | 3Dprinter | ***memSe*** |
| messageEncoding | textMessage | ***mesEg*** |
| metadata | features | ***metaa*** |
| minLength | textMessage | ***minLh*** |
| minLevel | openLevel | ***minLl*** |
| minSpeed | airFlow | ***minSd*** |
| minValue | numberValue, temperature | ***minVe*** |
| modality | pulsemeter | ***moday*** |
| model | dmDeviceInfo | ***model*** |
| monitoringEnabled | airQualitySensor | ***monEd*** |
| multiFirmware | dmFirmware | ***mulFe*** |
| multiplyingFactors | energyConsumption, energyGeneration | ***mulFs*** |
| muscle | bioElectricalImpedanceAnalysis | ***musce*** |
| muscleMass | bodyCompositionAnalyser | ***musMs*** |
| muteEnabled | audioVolume | ***mutEd*** |
| name | dmPackage, dmSoftware | ***name*** |
| network | 3Dprinter | ***netwk*** |
| numberValue | numberValue | ***numVe*** |
| object | binaryObject | ***objet*** |
| objectType | binaryObject | ***objTe*** |
| openAlarm | doorStatus | ***opeAm*** |
| openDuration | doorStatus | ***opeDn*** |
| openLevel | openLevel | ***opeLl*** |
| originID | origin | ***oriID*** |
| osVersion | dmDeviceInfo | ***oseVn*** |
| overcurrentStatus | overcurrentSensor | ***oveSs*** |
| oxygenSaturation | oximeter | ***oxySn*** |
| ozoneStatus | ozoneMeter | ***ozoSs*** |
| ozoneValueMG | ozoneMeter | ***ozVMG*** |
| ozoneValuePPM | ozoneMeter | ***oVPPM*** |
| password | credentials | ***pwd*** |
| power | energyConsumption | ***power*** |
| powerGenerationData | energyGeneration | ***poGDa*** |
| powerSaveEnabled | powerSave | ***poSEd*** |
| powerState | binarySwitch | ***powSe*** |
| powerStatus | dmAgent | ***powSs*** |
| precision | features | ***precn*** |
| presentationURL | dmDeviceInfo | ***prURL*** |
| previousChannel | televisionChannel | ***preCl*** |
| preWash | clothesWasherJobModeOption | ***preWh*** |
| primaryName | dmFirmware | ***priNe*** |
| primaryState | dmFirmware | ***priSe*** |
| primaryUrl | dmFirmware | ***priUl*** |
| primaryVersion | dmFirmware | ***priVn*** |
| printingState | printQueue | ***priS0*** |
| printSizeX | 3Dprinter | ***priSX*** |
| printSizeY | 3Dprinter | ***priSY*** |
| printSizeZ | 3Dprinter | ***priSZ*** |
| printType | 3Dprinter | ***priTe*** |
| progressPercentage | runState | ***proPe*** |
| pulseRate | pulsemeter | ***pulRe*** |
| pushed | pushButton | ***pushd*** |
| ramAvailable | dmAgent | ***ramAe*** |
| ramTotal | dmAgent | ***ramTl*** |
| rapidCool | refrigeration | ***rapCl*** |
| rapidFreeze | refrigeration | ***rapFe*** |
| recipientID | phoneCall | ***recID*** |
| red | colour | ***red*** |
| referenceTimer | timer | ***refTr*** |
| relativeHumidity | relativeHumidity | ***relHy*** |
| remoteControlEnabled | remoteControlEnable | ***reCEd*** |
| resistance | bioElectricalImpedanceAnalysis | ***resie*** |
| roundingEnergyConsumption | energyConsumption | ***roECn*** |
| roundingEnergyGeneration | energyGeneration | ***roEGn*** |
| rr | pulsemeter | ***r0*** |
| rssi | signalStrength | ***rssi*** |
| runningTime | timer | ***runTe*** |
| sdp | sessionDescription | ***sdp*** |
| secondaryName | dmFirmware | ***secNe*** |
| secondaryState | dmFirmware | ***secSe*** |
| secondaryUrl | dmFirmware | ***secUl*** |
| secondaryVersion | dmFirmware | ***secVn*** |
| securityModes | securityMode | ***secMs*** |
| sensitivity | motionSensor | ***sensy*** |
| sensorHumidity | airQualitySensor | ***senHy*** |
| sensorOdor | airQualitySensor | ***senOr*** |
| sensorPM1 | airQualitySensor | ***sePM1*** |
| sensorPM10 | airQualitySensor | ***sePM0*** |
| serialNumber | dmDeviceInfo | ***serNr*** |
| sensorPM2 | airQualitySensor | ***sePM2*** |
| significantDigits | energyConsumption, energyGeneration | ***sigDs*** |
| silentTime | motionSensor | ***silTe*** |
| size | binaryObject, features | ***size*** |
| smokeThreshhold | smokeSensor | ***smoTd*** |
| softLeanMass | bodyCompositionAnalyser | ***soLMs*** |
| soilLevel | clothesWasherJobModeOption | ***soiLl*** |
| speed | airFlow | ***speed*** |
| speedFactor | playerControl | ***speFr*** |
| speedWash | clothesWasherJobModeOption | ***speWh*** |
| spinLevelStrength | spinLevel | ***spLSh*** |
| spinSpeed | clothesWasherJobModeOption | ***spiSd*** |
| startPause | operationMode | ***staPe*** |
| state | dmAgent, dmPackage, dmSoftware | ***state*** |
| status | boiler, dmEventLog, electricVehicleConnector, faultDetection, filterInf, mediaSelect | ***sus*** |
| steamTreat | clothesWasherJobModeOption | ***steTt*** |
| step | numberValue | ***step*** |
| stepValue | audioVolume, openLevel, temperature | ***steVe*** |
| storageAvailable | dmAgent | ***stoAe*** |
| storageTotal | dmAgent | ***stoTl*** |
| strength | brewing | ***streh*** |
| subModel | dmDeviceInfo | ***subMl*** |
| supportedHorizontalDirection | airFlow | ***suHDn*** |
| supportedMediaSources | mediaSelect | ***suMSs*** |
| supportedMessageValues | textMessage | ***suMVs*** |
| supportedPlayerModes | playerControl | ***suPMs*** |
| supportedVerticalDirection | airFlow | ***suVDn*** |
| supportURL | dmDeviceInfo | ***suURL*** |
| swVersion | dmDeviceInfo | ***sweVn*** |
| systemTime | dmAgent | ***sysTe*** |
| systolicPressure | sphygmomanometer | ***sysPe*** |
| targetAltitude | geoLocation | ***tarAe*** |
| targetDuration | timer | ***tarDn*** |
| targetLatitude | geoLocation | ***tarLe*** |
| targetLongitude | geoLocation | ***tarL0*** |
| targetTemperature | temperature | ***tarTe*** |
| targetTimeToStart | timer | ***tTTSt*** |
| targetTimeToStop | timer | ***tTTSp*** |
| temperature | temperatureAlarm | ***tempe*** |
| temperatureThreshhold | temperatureAlarm | ***temTd*** |
| textMessage | textMessage | ***texMe*** |
| time | keepWarm | ***time*** |
| token | credentials | ***tk*** |
| tone | alarmSpeaker | ***tone*** |
| turboEnabled | turbo | ***turEd*** |
| type | dmEventLog | ***type*** |
| unit | temperature | ***unit*** |
| uri | printQueue | ***ur0*** |
| url | sessionDescription, dmPackage, dmSoftware | ***ur1*** |
| useGrinder | grinder | ***useGr*** |
| uvStatus | uvSensor | ***uvtSs*** |
| uvValue | uvSensor | ***uvaVe*** |
| version | dmPackage, dmSoftware | ***versn*** |
| verticalAccuracy | geoLocation | ***verAy*** |
| verticalDirection | airFlow | ***verDn*** |
| visceraFat | bioElectricalImpedanceAnalysis | ***visFt*** |
| voc | airQualitySensor | ***voc*** |
| voltage | battery | ***volte*** |
| voltage | energyConsumption | ***volte*** |
| volumePercentage | audioVolume | ***volPe*** |
| washTemp | clothesWasherJobModeOption | ***wasTp*** |
| water | bioElectricalImpedanceAnalysis | ***water*** |
| waterFlowStrength | waterFlow | ***waFSh*** |
| weight | weight, features | ***weigt*** |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 5 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 6 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 6.4.1 Introduction

Each specialization has a containerDefinition attribute which can be used as a unique identifier and contains the information of the resource. In this clause, the detailed values of containerDefinition attributes in every specializations for the harmonized information model are given.

The full list of domains is:

“agriculture”, “city”, “common”, “health”, “home”, “industry”, “management”, “metadata”, “publicsafety”, “railway” and “vehicular”.

### 6.4.2 Device models

Depending on the domain, the containerDefinition attribute of specializations for device models shall have the values that comply with the following rule.

* Rule: “org.onem2m.[domain].device.[device name]”, where [domain] is one of the domain names defined in 6.4.1. The name is chosen according to the domain in which the device is defined.

For example, the containerDefinition attribute of the specialization for the “deviceAirConditioner” device of the “home” domain shall be “org.onem2m.home.device.deviceAirConditioner”.

### 6.4.3 ModuleClasses

Depending on the domain, the containerDefinition attribute of specializations for module classes shall have the values that comply with the following rule.

* Rule: “org.onem2m.[domain].moduleclass.[moduleclass name]”, where [domain] is one of the domain names defined in 6.4.1. The name is chosen according to the domain in which the module class is defined.

For example, the containerDefinition attribute of the specialization for the “alarmSpeaker” module class of the “common” domain shall be “org.onem2m.common.moduleclass.alarmSpeaker”, the containerDefinition attribute of the specialization for the “dmAgent” module class of the “management” domain shall be “org.onem2m.management.moduleclass.dmAgent”.

### 6.4.4 Actions

Depending on the domain, the containerDefinition attribute of specializations for actions shall have the values

that comply with the following rule.

* Rule: “org.onem2m.[domain].action.[action name]”, where [domain] is one of the domain names defined in 6.4.1. The name is chosen according to the domain in which the action is defined.

For example, the containerDefinition attribute of the specialization for “activateClockTimer” action in the “timer” module class of the “common” domain shall be “org.onem2m.common.action.activateClocktimer”, the containerDefinition attribute of the specialization for the “activate” action of the “dmSoftware” module class of the “management” domain shall be “org.onem2m.management.action.activate”.

### 6.4.5 SubDevices

Depending on the domain, the containerDefinition attribute of specializations for sub-devices shall have the values that comply with the following rule.

- Rule: “org.onem2m.[domain].subdevice.[subDevice name]”, where [domain] is one of the domain names defined in 6.4.1. The name is chosen according to the domain in which the sub-device is defined.

For example, the containerDefinition attribute of specialization for “subDevicePowerOutlet” of the “common” domain shall be “org.onem2m.common.subdevice.subDevicePowerOutlet”,the containerDefinition attribute of the specialization forthe “dmAreaNwkInfo” of the “management” domain shall be “org.onem2m. management.subdevice.dmAreaNwkInfo”.

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 6 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 7 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 6.5.1 Introduction

The present clause specifies how to name the files which define data types in XSD for Device and SubDevice models, ModuleClasss, Actions and enumerated types.

Seven SDT domains correspond to different vertical, economic domains (*Agriculture, Smart City, Health, Home, Industry, Public Safety, Railway, Vehicular*), they contain devices and modules that are specific to these domains.

*Management* domain contains transversal, Device Management modules, *Metadata* domain contains transversal, meta-information modules, *Horizontal* is only for enumerated types and *Common* is the domain that gathers devices and modules that do not pertain to a specific domain but are re-usable anywhere.

The following table defines the short names for XML name spaces and file name prefix:

|  |  |  |  |
| --- | --- | --- | --- |
| **Domain** | **XML Name Space** | **Domain Prefix** | **URI** |
| Agriculture | xmlns:agd | AGD | http://www.onem2m.org/xml/protocols/agriculturedomain |
| City | xmlns:cid | CID | http://www.onem2m.org/xml/protocols/citydomain |
| Common | xmlns:cod | COD | http://www.onem2m.org/xml/protocols/commondomain |
| Health | xmlns:hed | HED | http://www.onem2m.org/xml/protocols/healthdomain |
| Home | xmlns:hod | HOD | http://www.onem2m.org/xml/protocols/homedomain |
| Industry | xmlns:ind | IND | http://www.onem2m.org/xml/protocols/industrydomain |
| Management | xmlns:mad | MAD | http://www.onem2m.org/xml/protocols/managementdomain |
| Metadata | xmlns:mdd | MDD | http://www.onem2m.org/xml/protocols/metadatadomain |
| PublicSafety | xmlns:psd | PSD | http://www.onem2m.org/xml/protocols/publicsafetydomain |
| Railway | xmlns:rad | RAD | http://www.onem2m.org/xml/protocols/railwaydomain |
| Vehicular | xmlns:ved | VED | http://www.onem2m.org/xml/protocols/vehiculardomain |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 7 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*