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| CHANGE REQUEST | |
| Meeting ID:\* | RDM 44 |
| Source:\* | Bob Flynn, Convida Wireless , [Bob.Flynn@convidawireless.com](mailto:Bob.Flynn@convidawireless.com)  Cyrille Bareau, Orange, [cyrille.bareau@orange.com](mailto:cyrille.bareau@orange.com)  Leila Le Brun, Orange, [leila.lebrun@orange.com](mailto:leila.lebrun@orange.com)  Marianne Mohali, Orange, [marianne.mohali@orange.com](mailto:marianne.mohali@orange.com)  Przemyslaw Ratuszek, Orange, [przemyslaw.ratuszek@orange.com](mailto:przemyslaw.ratuszek@orange.com)  Andreas Kraft, Deutsche Telekom, [Andreas.Kraft@t-systems.com](mailto:Andreas.Kraft@t-systems.com) |
| Date:\* | 2020-02-09 |
| Reason for Change/s:\* | Clarification of table parameters |
| CR against: Release\* | Rel-3 |
| CR against: WI\* | Active < >  MNT maintenance / < Work Item number(optional)>  Is this a mirror CR? Yes  No  mirror CR number: (RDM-2020-0008)  STE Small Technical Enhancements / < Work Item number (optional)>  Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TS-0023 v4.3.0 |
| Clauses \* | 5.2.2 |
| 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 | None |
| 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 2019 (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.

In case of a correction, and the change apply to previous releases, a separate “mirror CR” should be posted at the same time of 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. Includes any changes to references, definitions, and acronyms in the same deliverable.

Follow the drafting rules.

All pictures must be editable.

Check spelling and grammar to the extent practicable.

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 new clause is proposed to be 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 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 TS-0023 the description of a module’s datapoints includes a R/W column that contains values R or RW. There may be “W” but I did not check the entire document as it does not impact the purpose of the contribution.

For example refer to *Table 5.3.1.1-2: DataPoints of 3Dprinter ModuleClass*

In TS-0004 a similar column exist to describe the parameter presence in a Create or Update request. Refer to *Table 7.4.1.1-2.*

These two concepts are not intended to be related to each other.

This contribution serves to explain the use in TS-0023 for better clarity and interoperability.

## ---------------------- Start of Change 1--------------------------

When the Home Appliances Information Model is described based on SDT, the following rules shall be applied:

* Rule 1: CamelCase rule:
* When naming each element, lowerCamelCase shall be used as the Java coding rules [2].
* Rule 2: Rule for description of Action, DataPoint:
* DataPoint shall be used to represent stateless operations. (e.g. powerState of binarySwitch for on/off operations).
* Action shall be used when describing stateful condition, handling unknown internal state conditions (e.g. upVolume/downVolume by increasing/decreasing the audioVolume in steps, handling transactional procedures, or checking integrity using username plus password at the same time).
* Rule 3: Rule for description of DataPoint and Property:
* Non-functional information shall be described as a Property. Functional information shall be described as a DataPoint. (E.g. non-functional information: version, id; functional information: targetTemperature, targetVolume).
* Rule 4: Definition of the Domain:
* The Domain, in the case of the Home Appliance Information Model, is specified as "org.onem2m.home".
* The sub-domain for Device and ModuleClass shall be specified as "org.onem2m.home.devices" and "org.onem2m.home.moduleclasses" respectively.
* Rule 5: Naming rule for the element:
* The name of each element should be concise and avoid repeating its parent element name; but
* It may include the name of its parent element for readability. (e.g., lightDimmerUp, lightDimmerDown under lightDimmer).
* Rule 6: Criteria for marking elements as optional or mandatory:
* An element shall only be defined as mandatory if it is foreseen to be universally mandatory to all implementing technologies.
* Rule 7: Enumeration type:
* When describing the meaning of values for enumeration type elements, they may be described in another clause.
* The enumeration types for Home Appliance Information Model are based on <xs:integer>, and the numeric values are interpreted as specified in clause 5.6.
* The name of an enumeration type shall start with the prefix "enum". This prefix shall not be used with non-enumeration type names.
* Rule 8: Rule for unit in documentation:
* SI (International Systems of Units in [z]) measurement (e.g. meter, kilogram, second.) should be considered as first candidate.
* Otherwise, it may be kept consistency with implementing technologies such as other SDO's specification.

NOTE: Popular unit in particular industrial domain should be considered (e.g. cm for human height, calories for energy consumption in healthcare domain).

* Rule 9: Rule for type:
* Measured and/or calculated values should be represented in float (without taking care of resolution of values).
* Rule 10: Inheritance of ModuleClasses:
* A ModuleClass may inherit from another existing ModuleClass in order to provide additional functionalities based on the existing ModuleClass. However, inheritance from multiple ModuleClasses is not allowed (due to the "diamond problem" [i.6]).
* Inheritance of ModuleClass shall only be used in the case that extending an existing ModuleClass is not appropriate, i.e. the functionality to be added is irrelevant to the original design purpose of the existing ModuleClass (e.g. adding a 'time' DataPoint to a 'binarySwitch' ModuleClass).
* Rule 11: When to differentiate between current and target Data Points in ModuleClasses:
* Device operations, which are executed when setting data points to specific values, may take some time to reach the desired result. For example, setting a new temperature to a heater does not immediately change the room temperature, but it may take some time for the heater to increase the temperature. Therefore, it is sometimes necessary to distinguish between current and target data points.
* A ModuleClass shall provide an additional "target" data point when the "current" data point:
* is writable; and
* the functionality that is mapped to the data point is an operation, not a configuration function; and
* the operation may take some time to start and/or to complete, or reach the desired result.
* When a ModuleClass provides current and target data points then the name for the current data point shall have the prefix "current", and the name for the target data point shall have the prefix "target". Both data points shall have the same suffix, for example "currentTemperature" and "targetTemperature".

Rule 12: VOID.

NOTE: To keep rule numbering consistent across revisions, this rule is left blank in Rel 3.

• Rule 13: Rule for R/W column

* The value used in this column defines the interface as it applies to the user of this module. The entity that this module represents (device AE or IPE AE) can read or write to any or all of the datapoints as needed in order to implement the defined interface to the user. <accessControlPolicy> resources shall be defined to enforce access control to the datapoints of the module defined such that R in the R/W column has RETRIEVE *accessControlOperations* and RW in the R/W column has RETRIEVE and UPDATE *accessControlOperations*.

-------------------------------------------------- End of Change 1---------------------------------------------------