

OCF “Ipanema” – Clarify support for 3rd party device types – Smart Home WG CR 3324

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6.2 Device type

A Device Type is a specialisation of a Resource Type name, it is used to populate the "rt" Property of "/oic/d" and thus provide an indicator of the type of physical device that is being modelled by the Server. All Device Types defined by this document are prefixed with "oic.d."

Examples of Device Types are:

- oic.d.fan
- oic.d.thermostat

The full list of defined Device names and types are in Table A.2; Annex B, Annex C, Annex D, and Annex E detail the minimal Resource(s) that a Device shall implement for a specific Device Type where required by a vertical. A Device may expose additional OCF and 3rd party defined Resources other than those indicated in these Annexes.

ISO/IEC 30118-1:2018 defines a Device Resource with a URI of "/oic/d". A Device shall include in the "rt" Property of "/oic/d" the Device Type (or Device Types) from Table A.2, or a Third party specified Device Type (see clause 6.4), of the physical device hosting the Server. The inclusion of the Device Type shall be done using one of the methods provided by clause 11.3.4 of ISO/IEC 30118-1:2018 (i.e. add to the array of values).

ISO/IEC 30118-1:2018 supports the inclusion of a Device Type as part of the Resource Type of a Collection (see also clause 7.4), in such cases the Collection shall include the Resource Types defined as mandatory for the Device Type by this document. For example, if a Collection Resource has an "rt" value of ["oic.d.light"], the Collection includes an instance of "oic.r.switch.binary" which is mandatory for an "oic.d.light" as per clause B.1.

Therefore a Device may be discovered by adding a query for the "rt" of the Device Type itself (e.g. "?rt=oic.d.fan") to the multicast Endpoint discovery method (see clause 8.1).

6.3 Profile of ISO/IEC 30118-1:2018

This clause describes the profiling of the Core Resources and transport mechanisms and functions that are defined in ISO/IEC 30118-1:2018.

The required ISO/IEC 30118-1:2018 Resources are also required for a profile implementation.

In addition to the required Resources the optional ISO/IEC 30118-1:2018 Resources in Table 1 shall be required.

Table 1 – Required resources for devices

Resource ("rt")	Required in Profile
Intentionally left blank	Intentionally left blank

For each of the Resources listed in Table 1, Table 2 details the Properties within those Resources that shall be required.

Table 2 – Required properties in resource

Resource ("rt")	Property name	Required in Profile
Intentionally left blank	Intentionally left blank	Intentionally left blank

A Device shall support CoAP based endpoint discovery as defined in clause 10.3 of ISO/IEC 30118-1:2018.

The messaging protocol for a Device shall be CoAP (see ISO/IEC 30118-1:2018).

A Device shall support a network layer as defined in clause 9 of ISO/IEC 30118-1:2018 including any necessary defined bridging functions that ensure inter-operability with IPv6.

6.4 Third (3rd) party specified extensions

This clause describes how a 3rd party may add Device Types, Resource Types, 3rd party defined Properties to an existing or 3rd party defined Resource Type, 3rd party defined enumeration values to an existing enumeration and 3rd party defined Parameters to an existing defined Property.

A 3rd party may specify additional (non-OCF) Resources within an OCF Device. A 3rd party may also specify additional Properties within an existing OCF defined Resource Type. Further a 3rd party may extend an OCF defined enumeration with 3rd party defined values.

A 3rd party defined Device Type may expose both 3rd party and OCF defined Resource Types. A 3rd party defined Device Type must expose the mandatory Resources for all OCF Devices defined within this document.

A 3rd party defined Resource Type shall include any mandatory Properties defined in this document and also any vertical specified mandatory Properties. All Properties defined within a 3rd party defined Resource Type that are part of the OCF namespace that are not Common Properties as defined in this document shall follow the 3rd party defined Property rules in Table 3.

Table 3 defines the syntax rules for 3rd party defined Resource Type elements. Within the table the term "Domain_Name" refers to a domain name that is owned by the 3rd party that is defining the new element.

Table 3 – 3rd party defined Resource elements

	Resource Element	Vendor Definition Rules
New 3 rd party defined Device Type	"rt" Property Value of "/oic/d"	"x.<Domain_Name>.<Resource identification>"
New 3 rd party defined Resource Type	"rt" Property Value	"x.<Domain_Name>.<Resource identification>"
New 3 rd party defined Property within the OCF namespace	Property Name	"x.<Domain_Name>.<Property>"
Additional 3 rd party defined values in an OCF specified enumeration	Enumeration Property Value	"x.<Domain_Name>.<enum value>"
Additional 3 rd party defined Parameter in an OCF specified Property	Parameter key word	x.<Domain_Name>.<parameter keyword>

With respect to the use of the Domain_Name in this scheme the labels are reversed from how they appear in DNS or other resolution mechanisms. The 3rd party defined Device Type and Resource Type otherwise follow the rules defined in ISO/IEC 30118-1:2018. 3rd party defined Resource Types should be registered in the IANA Constrained RESTful Environments (CoRE) Parameters registry.

For example:

x.com.samsung.galaxyphone.accelerator
x.com.cisco.ciscorouterport
x.com.hp.printerhead
x.org.allseen.newinterface.newproperty

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