OCF "Gaborone" – The proposal for a new device type(oic.d.indoorgarden) – Data Model WG CR 3180

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Annex A
(normative)

Device categories and device types

A.1 Device categories

Devices are grouped into Device Categories based on the Universal Device Classification (UDC) (see A Basic Classification System for Energy-Using Products--Universal Device Classification), all Device Categories are listed in Table A.1.

Table A.1 – List of device categories

Device Category Name	Description
Space Conditioning	Heating and cooling systems
Lighting	
Appliance	Also known as "white goods"; covers major appliances only.
Electronics	Personal electronics
Miscellaneous	Small appliances, other
Infrastructure	Physical building and infrastructure
Transportation	Vehicles, fixed devices that provide movement (e.g. Escalators)
Fitness	Includes lifestyle
Medical	
Personal Health	
Other	

A.2 Device types

The complete Universal Device Classification with Device Types per Device Category is provided in Table A.2. Note that not all Devices within the UDC classification have equivalent OCF defined Device Types. All defined Device Types are of the form "oic.d.<thing>" where <thing> is a single alphanumeric string (lower case [a..z],[0..9] only) no more than 24 characters in length giving a total maximum length of the Device Type of 32 characters. Where an abbreviated form of the Device Type is required (applicable only to population of a Wi-Fi beacon IE) then the "oic.d." portion of the Device Type may be omitted.

Table A.2 does not specify the mandatory resources that are implemented by an instance of such a Device Type; the set of applicable mandatory Resources is dependent on the application domain. In this document the following domains are specified: Smart Home, Healthcare. The "Reference" column in the table references vertical specific annexes where the Device Type is further refined (e.g. mandatory Resources).

Table A.2 – Per category list of device types

Device Category Name	UDC Device Name	Device Name	Device Type (Normative)	Reference
Space Conditioning	Unitary System	Air Conditioner	oic.d.airconditioner	B.1

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	Boiler	Water Heater	oic.d.waterheater	B.1
	Furnace	Furnace	oic.d.furnace	
	Pump	Pump	oic.d.pump	
	Fan	Fan	oic.d.fan	B.1
	Condensing Unit	Condensing Unit	oic.d.condensingunit	
	Condenser	Condenser	oic.d.condenser	
	Humidifier	Humidifier	oic.d.humidifier	B.1
	Dehumidifier	Dehumidifier	oic.d.dehumidifier	B.1
	HVAC – Control	Thermostat	oic.d.thermostat	B.1
	HVAC - Other	HVAC	oic.d.hvac	
		Air Purifier	oic.d.airpurifier	B.1
		Air Quality Monitor	oic.d.airqualitymonitor	B.1
Lighting	Lighting - Controls	Lighting Controls	oic.d.lightingcontrol	
	Lighting - Other	Light	oic.d.light	B.1
Appliance	Clothes Dryer	Dryer (Laundry)	oic.d.dryer	B.1
	Clothes Washer	Washer (Laundry)	oic.d.washer	B.1
		Clothes Washer Dryer	oic.d.washerdryer	B.1
	Dishwasher	Dishwasher	oic.d.dishwasher	B.1
	Freezer	Freezer	oic.d.freezer	B.1
	Ice Machine	Ice Machine	oic.d.icemachine	
	Indoor Garden	Indoor Garden	oic.d.indoorgarden	B.1
	Oven	Oven	oic.d.oven	B.1
	Range	Range	oic.d.range	
	Refrigerator	Refrigerator	oic.d.refrigerator	B.1
	Water Heater	Water Heater	oic.d.waterheater	B.1
	Water Purifier	Water Purifier	oic.d.waterpurifier	B.1
	Appliance - Other	Cooker Hood	oic.d.cookerhood	B.1
		Cooktop	oic.d.cooktop	B.1
		Steam Closet	oic.d.steamcloset	B.1
Electronics	Audio System	Audio System	oic.d.audiosystem	
	A/V Player	AV Player	oic.d.avplayer	
	Camera	Camera	oic.d.camera	B.1

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	Computer – Desktop	Desktop PC	oic.d.desktoppc	
	Computer - Notebook	Notebook PC	oic.d.notebookpc	
	Computer - Server	Server	oic.d.server	
	Computer – Other	Computer	oic.d.pc	
	Data Storage	Data Storage Unit	oic.d.datastorageunit	
	Display	Display	oic.d.display	
	Electronics - Portable	Portable Electronics	oic.d.portableelectronics	
	Game Console	Game Console	oic.d.gameconsole	
	Imaging Equipment	3D Printer	oic.d.3dprinter	B.1
		Printer	oic.d.printer	B.1
		Printer Multi-Function	oic.d.multifunctionprinter	B.1
		Scanner	oic.d.scanner	B.1
	Musical Instrument	Musical Instrument	oic.d.musicalinstrument	
	Networking Equipment	Networking Equipment	oic.d.networking	
	Phone Handset	Handset	oic.d.handset	
	Receiver	Receiver	oic.d.receiver	B.1
	Set Top Box	Set Top Box	oic.d.stb	B.1
	Telephony	Telephony	oic.d.telephonydevice	
	Television	Television	oic.d.tv	B.1
	A/V - Other	Active Speaker	oic.d.speaker	
	Electronics – Other	Electronics	oic.d.smallelectrical	
Miscellaneous	Air Compressors	Air Compressor	oic.d.aircompressor	
	Bathroom Device	Bathroom General	oic.d.bathroomdevice	
	Battery Charger	Battery Charger	oic.d.batterycharger	
	Business Equipment	Business Equipment	oic.d.businessequipment	
	Cleaning Equipment	Robot Cleaner	oic.d.robotcleaner	B.1
	Cooking – Portable	Portable Stove	oic.d.portablestove	
	Exercise Machine	Exercise Machine	oic.d.exercisemachine	

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	HVAC – Portable	Portable HVAC	oic.d.hvacportable	
	Industrial	Optical augmented RFID Reader	oic.d.orfid	D.1
	Kitchen	Coffee Machine	oic.d.coffeemachine	B.1
		Food Probe	oic.d.foodprobe	B.1
		Grinder	oic.d.grinder	B.1
		Kettle	oic.d.kettle	B.1
	Lighting – Decorative	Decorative Lighting	oic.d.lightdecorative	
	Lighting – Emergency	Emergency Lighting	oic.d.lightemergency	
	Microwave Oven	Microwave Oven	oic.d.microwave	B.1
	Vending Machine	Vending Machine	oic.d.vendingmachine	
	Water Dispenser	Water Dispenser	oic.d.waterdispenser	
	Miscellaneous - Other	Battery	oic.d.battery	B.1, E.3
Infrastructure	Breakers	Water Valve	oic.d.watervalve	B.1
	Doors/Windows	Blind	oic.d.blind	B.1
		Door	oic.d.door	B.1
		Garage Door	oic.d.garagedoor	B.1
		Smart Lock	oic.d.smartlock	B.1
		Window	oic.d.window	B.1
	Fireplace	Fireplace	oic.d.fireplace	
	Pump	Pump	oic.d.pump	
	Power - Portable	Energy Generator	oic.d.energygenerator	B.1
		Smart Plug	oic.d.smartplug	B.1
	Power - Fixed	Circuit Breaker	oic.d.circuitbreaker	E.3
		Inverter	oic.d.inverter	E.3
		PV Array System	oic.d.pvarraysystem	E.3
		Switch	oic.d.switch	B.1
	Security	Security Panel	oic.d.securitypanel	B.1
	Sensors	Generic Sensor	oic.d.sensor	B.1
	Meter	Electric Meter	oic.d.electricmeter	B.1
		Energy Monitor	oic.d.energymonitor	B.1

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Transportation	Transport - Other	Electric Vehicle Charger	oic.d.electricvehiclecharger	B.1
Fitness		Fitness Device	oic.d.fitnessdevice	
		Activity Tracker	oic.d.activitytracker	C.4
		Blood Pressure Monitor	oic.d.bloodpressuremonitor	C.4
		Body Thermometer	oic.d.bodythermometer	C.4
		Cycling Power Meter	oic.d.cyclingpowermeter	C.4
		Cycling Speed Sensor	oic.d.cyclingspeedsensor	C.4
		Cycling Cadence Sensor	oic.d.cyclingcadencesensor	C.4
		Heart Rate Monitor	oic.d.heartratemonitor	C.4
Medical		Medical Device	oic.d.medicaldevice	
		Blood Pressure Monitor	oic.d.bloodpressuremonitor	C.4
		Glucose Meter	oic.d.glucosemeter	C.4
		Body Scale	oic.d.bodyscale	C.4
		Body Thermometer	oic.d.bodythermometer	C.4
		Heart Rate Monitor	oic.d.heartratemonitor	C.4
		Pulse Oximeter	oic.d.pulseoximeter	C.4
		Sleep Monitor	oic.d.sleepmonitor	C.4
		CGM	oic.d.cgm	C.4
Personal Health		Personal Health Device	oic.d.personalhealthdevice	
		Blood Pressure Monitor	oic.d.bloodpressuremonitor	C.4
		Glucose Meter	oic.d.glucosemeter	C.4
		Body Scale	oic.d.bodyscale	C.4
		Body Thermometer	oic.d.bodythermometer	C.4
		Heart Rate Monitor	oic.d.heartratemonitor	C.4
		Pulse Oximeter	oic.d.pulseoximeter	C.4
		Sleep Monitor	oic.d.sleepmonitor	C.4
		Activity Tracker	oic.d.activitytracker	C.4
		CGM	oic.d.cgm	C.4

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Other	Other		oic.d.unknown	
		Access Management Service	oic.d.ams	
		Credential Management Service	oic.d.cms	
		Device Ownership Transfer Service	oic.d.dots	

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Annex B
(normative)

Smart home device types

B.1 Smart home required resources per device type

Device Types may mandate that specific Resources be implemented. The required Resource per Device Type where mandated is listed in Table B.1. Additionally, specific Resources that use enumeration values to indicate supported states or modes may mandate usage of standardized enumeration values. The mandated allowed values are indicated for each applicable Resource Type, the Property of interest on that Resource Type and to which Device Type it applies.

Per Table B.1, some Device types support two instances of the same Resource Type. When this is the case, the Resources shall support different CRUDN actions, e.g. one Resource acts as a Sensor (CRUDN action write not supported) and the other Resource acts as an Actuator (CRUDN actions read and write supported at a minimum) unless otherwise specified.

Table B.1 – Alphabetical list of device types ("rt"), including required resources for smart home

Device Name (informative)	Device Type ("rt") (Normative)	Required Resource name	Required Resource Type
3D Printer	oic.d.3dprinter	Binary Switch	oic.r.switch.binary
		3D Printer	oic.r.printer.3d
		Operational State	oic.r.operational.state
		Temperature	oic.r.temperature
		Print Queue	oic.r.printer.queue
Active Speaker	oic.d.speaker	Binary Switch	oic.r.switch.binary
		Audio Controls	oic.r.audio
Air Conditioner	oic.d.airconditioner	Binary Switch	oic.r.switch.binary
		Temperature	oic.r.temperature
Air Purifier	oic.d.airpurifier	Binary Switch	oic.r.switch.binary
Air Quality Monitor	oic.d.airqualitymonitor	Air Quality Collection	oic.r.airqualitycollection
Battery	oic.d.battery	Battery	oic.r.battery
Blind	oic.d.blind	Open Level	oic.r.openlevel
Camera	oic.d.camera	Media	oic.r.media
Clothes Washer Dryer	oic.d.washerdryer	Binary Switch	oic.r.switch.binary
		Operational State	oic.r.operational.state
Coffee Machine	oic.d.coffeemachine	Binary Switch	oic.r.switch.binary
		Operational State	oic.r.operational.state
Cooker Hood	oic.d.cookerhood	Airflow Control	oic.r.airflowcontrol
		Binary Switch	oic.r.switch.binary
		Mode	oic.r.mode

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Cooktop	oic.d.cooktop	Heating Zone Collection	oic.r.heatingzonecollection
Dehumidifier	oic.d.dehumidifier	Binary Switch	oic.r.switch.binary
		Humidity	oic.r.humidity
Dishwasher	oic.d.dishwasher	Binary Switch	oic.r.switch.binary
		Mode	oic.r.mode
Door	oic.d.door	Open Level	oic.r.openlevel
Dryer (Laundry)	oic.d.dryer	Binary switch	oic.r.switch.binary
		Operational State	oic.r.operational.state
Electric Vehicle Charger	oic.d.electricvehiclecharger	Binary Switch	oic.r.switch.binary
		Operational State	oic.r.operational.state
		Battery	oic.r.battery
		Vehicle Connector	oic.r.vehicleconnector
Electric Meter	oic.d.electricmeter	Energy Consumption	oic.r.energy.consumption
Energy Generator	oic.d.energygenerator	Energy Generation	oic.r.energy.generation
Energy Monitor	oic.d.energymonitor	One of: Energy Consumption, Gas Consumption	oic.r.energy.consumption or oic.r.gas.consumption
Fan	oic.d.fan	Binary Switch	oic.r.switch.binary
Food Probe	oic.d.foodprobe	Temperature (Sensor)	oic.r.temperature
Freezer	oic.d.freezer	Temperature(2)(1 Sensor and 1 Actuator)	oic.r.temperature
Garage Door	oic.d.garagedoor	Door	oic.r.door
Generic Sensor	oic.d.sensor	Any Resource Type that supports and exposes in "/oic/res" the oic.if.s interface.	oic.r. <x> Where this equates to any Resource Type that supports the oic.if.s Interface.
Grinder	oic.d.grinder	Operational State	oic.r.operational.state
		Grinder Settings	oic.r.grinder
Humidifier	oic.d.humidifier	Binary Switch	oic.r.switch.binary
Kettle	oic.d.kettle	Binary Switch	oic.r.switch.binary
Light	oic.d.light	Binary Switch	oic.r.switch.binary
Indoor Garden	oic.d.indoorgarden	Binary Switch	oic.r.switch.binary
Oven	oic.d.oven	Binary Switch	oic.r.switch.binary
		Temperature (2) (1 Sensor and 1 Actuator)	oic.r.temperature
Printer	oic.d.printer	Binary Switch	oic.r.switch.binary
		Operational State	oic.r.operational.state
	oic.d.multifunctionprinter	Binary switch	oic.r.switch.binary

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Printer Multi-Function		Operational State (2)[a]	oic.r.operational.state
		Automatic Document Feeder	oic.r.automaticdocumentfeeder[b]
Receiver	oic.d.receiver	Binary Switch	oic.r.switch.binary
		Audio Controls	oic.r.audio
		Media Source List (2)	oic.r.media.input, oic.r.media.output
Refrigerator	oic.d.refrigerator	Temperature (2) (1 Sensor and 1 Actuator)	oic.r.temperature
Robot Cleaner	oic.d.robotcleaner	Binary Switch	oic.r.switch.binary
		Mode	oic.r.mode
Scanner	oic.d.scanner	Binary Switch	oic.r.switch.binary
		Operational State	oic.r.operational.state
		Automatic Document Feeder	oic.r.automaticdocumentfeeder
Security Panel	oic.d.securitypanel	Mode	oic.r.mode
Set Top Box	oic.d.stb	Binary Switch	oic.r.switch.binary
Smart Lock	oic.d.smartlock	Lock Status	oic.r.lock.status
Smart Plug	oic.d.smartplug	Binary Switch	oic.r.switch.binary
Steam Closet	oic.d.steamcloset	Operational State	oic.r. operational.state
		Time Period	oic.r.time.period
Switch	oic.d.switch	Binary Switch	oic.r.switch.binary
Television	oic.d.tv	Binary Switch	oic.r.switch.binary
		Audio Controls	oic.r.audio
		Media Source List	oic.r.media.input
Thermostat	oic.d.thermostat	Temperature (2) (1 Sensor and 1 Actuator)	oic.r.temperature
Washer (Laundry)	oic.d.washer	Binary Switch	oic.r.switch.binary
		Operational State	oic.r.operational.state
Water Heater	oic.d.waterheater	Binary Switch	oic.r.switch.binary
		Temperature(2) (1 Sensor and 1 Actuator)	oic.r.temperature
Water Purifier	oic.d.waterpurifier	Operational State	oic.r.operational.state
		Water Info	oic.r.waterinfo
Water Valve	oic.d.watervalve	Open Level	oic.r.openlevel
Window	oic.d.window	Open Level	oic.r.openlevel

[a] A Multi-Function Printer shall expose two instances of an Operational State resource; each in discrete Collections, one for the Printer specific operational state information and one for the Scanner specific operational state information. The friendly name for the Collections should indicate the device modality (printer or scanner).

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b A Multi-Function Printer shall only expose an Automatic Document Feeder resource if the device has the Automatic Document Feeder capability.

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