



Certified Capability List

This Capability List is based on a certification session performed by the *TALQ Certification Tool (v2.1.0)* on *2019-07-24 13:58:48.981 +0100*.

The Capability List is a consolidated list of TALQ features which are implemented in a product.

The tool has successfully performed *31 tests*.

Product details

Product Name Ki

Company Lucy Zodion

Type GATEWAY

Notes

Generated on 2019-07-24 13:58:48.981 +0100

Certification performed by app version: 2.1.0

Capability list

Security

Enabled ✓

Functions

Basic

The Basic function describes the properties related to the physical asset to which the logical device is associated, such as identification (assetId) and location information.

Attributes

#	Attribute	Description
✓	displayName	Display name of the asset.
✓	assetId	Customer identifier of the asset. If multiple devices have the same assetId it means they belong to the same asset.
✓	serial	Serial number of the device.
✓	hwType	Hardware type of the device.
✓	hwVersion	Hardware revision of the device.
✓	swVersion	Software version installed on the device.
✓	installationDate	The installation date of Physical Device.
✓	location	Latitude, Longitude and Altitude.
✓	timeZone	Time zone of the device. Time zone may be expressed in two formats. <timezone> where <timezone> is a time zone as defined in the zone.tab of the IANA timezone database [IANA]; and stdoffset[dst[offset][,start[/time],end[/time]]] as defined by the Open Group for posix systems [POSIX].
✓	currentTime	Current time of the device defined as local time with time zone designator.

Events

#	Event type	Description
✓	deviceReset	The physical device containing the logical device was reset

Communication

The Communication Function contains attributes related to the communication within the ODN, and between ODN devices and Gateways. Although communication within the ODN is outside the scope of the TALQ Smart City Protocol, this Function enables access to a minimum set of configuration and state information of the ODN communication interface in order to facilitate system management from the CMS.

Attributes

#	Attribute	Description
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- ✓ **communicationType** Type of communication technology implemented by the ODN (e.g. power line, wireless).

- ✓ **physicalAddress** Physical address of the device. For example, IEEE MAC address. This attribute can be used to map between logical and physical devices. The format is specific to the ODN implementation.

Events

#	Event type	Description
✓	communicationFailure	This event is generated by the ODN when the communication function is not operating as expected

Gateway

The Gateway function includes the necessary attributes to enable the communication between the CMS and the Gateway according to the TALQ Specification.

Attributes

#	Attribute	Description
✓	cmsUri	Base URI for TALQ communication that allows the Gateway to access the CMS. Must be an absolute URI. Other URI's for accessing CMS can be relative to this base.
✓	cmsAddress	CMS UUID address
✓	gatewayUri	Base URI for TALQ communication that allows the CMS to access the Gateway. Must be an absolute URI. Other URI's for accessing Gateway can be relative to this base.
✓	gatewayAddress	Gateway UUID address
✓	retryPeriod	Time duration before the Gateway retransmits a message for which expected response has not been received.
✓	crUrn	URI where the Gateway can obtain the Certification Revocation List (CRL).
✓	vendor	Vendor identification.

Lamp Actuator

The Lamp Actuator function includes attributes related to lighting control and it represents the smallest unit for control purposes. In practice, however, a Lamp Actuator function can control

combinations of several lamps and control gear but all in the same way, as if they are all one individual unit.

Attributes

#	Attribute	Description
✓	lampTypeId	TALQ Address of an existing lampType.
✓	standbyMode	Defines the behavior of the lamp actuator when output level is set to zero. If OFF, light output level is zero with no power to the lamp control gear. If ON, light output level is zero but power is delivered to the lamp control gear (standby mode).
✓	cloEnabled	Determines whether a Constant Light Output (CLO) correction factor is used. CLO is used to compensate for lumen output degradation over the life time of the lamp. If CLO is enabled, lamps are dimmed part of the lampType.
✓	defaultLightState	Sets the default light output for the lamp actuator. This shall be applicable if no other command is active. This attribute shall be set to 100% as default value.
✓	targetLightCommand	Latest command for the lamp actuator.
✓	feedbackLightCommand	This attribute reflects the command in effect and it might deviate from the actualLightState due to propagation time or due to internal ODN specific mechanisms to handle the priority of the requests.
✓	actualLightState	This attribute should reflect the physical state of the light source as much as possible, including factors such as CLO. It may be calculated or measured, depending on the specific ODN implementation, which is outside the scope of this specification.
✓	calendarID	TALQ Address of the calendar controlling this lamp actuator. If this attribute is empty, the behavior shall be determined by the ODN. If the attribute is invalid, the ODN shall trigger a generic invalid address event and the behavior shall be determined by the ODN.

Events

#	Event type	Description
✓	lightStateChange	Light state has changed
✓	invalidCalendar	The lamp actuator function has been allocated a calendar that it cannot implement

- ✓ invalidProgram The lamp actuator function has been allocated a control program that it cannot implement
- ✓ calendarChange The calendar applicable to the lamp actuator has changed

Lamp Monitor

The Lamp Monitor function enables monitoring of lamp parameters. A Lamp Monitor function should be associated with a specific lamp/control gear combination. Multiple lamp monitor functions may be implemented by a single device.

Attributes

#	Attribute	Description
✓	lampTypeId	TALQ Address of an existing lamp type. If not set to a valid value, this shall be the lamp type used in the lamp actuator. If this attribute is not supported in the implementation, the lamp monitor shall use the lamp type specified in the corresponding lamp actuator.
✓	supplyVoltage	RMS supply volts when supplyType is AC, supply voltage (V) when supplyType is DC.
✓	supplyCurrent	RMS supply current (A) when supplyType is AC, supply current (A) when supplyType is DC.
✓	activePower	Active power.
✓	apparentPower	Apparent Power.
✓	powerFactor	Active power/Apparent power.
✓	supplyLossCount	Incrementing count of supply losses. The wrap around value is $2e32 - 1$.

Events

#	Event type	Description
✓	lampFailure	The lamp is not operating as it is supposed to

Services

Configuration Service

The TALQ Configuration Service enables discovery and configuration of devices and services

Options

#	Option	Value	Description
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Control Service

The Control service describes the mechanisms to operate the actuator functions in order to enable schedule based and override control

Options

#	Option	Value	Description
✓	supportedTypes	<ul style="list-style-type: none"> AbsoluteActivePeriod AstroClockActivePeriod* SensorActivePeriod* 	Control Program and calendar options supported are defined by announcing support for the given modes
✓	maxProgramsPerCalendar		Maximum number of control programs per calendar
✓	maxSwitchPointsPerProgram		Maximum number of switching points per control program
✓	dayOffset	<ul style="list-style-type: none"> 1 2 	Offset of start of day
✓	ccDateSupport		Indicates the ccDate options supported
✓	ccDaySupport		Indicates the ccDay options supported

Events

#	Event Type	Description
✓	invalidCalendar	An invalid calendar has been provided by the CMS to the ODN

- ✓ **invalidProgram** A control program has been provided by the CMS, which cannot be implemented by the ODN

Data Collection Service

The TALQ Data Collection Service is a provision to configure how ODN measurements, status information and events are logged, and when or under what conditions the logged data is transferred to the CMS

Options

#	Option	Value	Description
✓	supportedModes	<ul style="list-style-type: none"> • EventRecordingMode • PeriodicRecordingMode • ImmediateReportingMode • VendorRecordingMode* 	Recording and Reporting modes supported

Events

#	Event Type	Description
✓	invalidLoggerConfig	The CMS has provided a data logger configuration that cannot be implemented by the ODN

On Demand Data Request Service

This service provides the mechanism to access attributes in the logical devices by requesting attribute values from the ODN

Group Management Service

This service provides the mechanisms to define and manage groups

Options

#	Option	Value	Description
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Test Service

This service provides a mechanism to reduce the human intervention during the certification tests, enabling the certification tests to maximise automation

Objects

Lamp type

Properties

#	Property	Description
✓	name	Descriptive name of the lamp type
✓	address	TALQ Address of the lamp type
✓	wattage	Expected consumed power of the lamp and control gear
✓	controlType	Type of control/dimming interface between the lamp actuator function and the control gear or within the control gear in case lamp actuator is embedded in the control gear
✓	cloType	Determines where CLO is implemented in the lamp control gear or in the ODN (e.g. control device)

Event log data

Properties

#	Property	Description
✓	eventType	Identifier of event reported
✓	srcAddress	Address of Logical device or function within a logical device which is the source of the event or to which this event applies
✓	info	a string providing more information on the event
✓	attributes	A sequence of attribute values logged together with the event

Command

Properties

#	Property	Description
✓	state	Light state to be applied to the lamp actuator

- ✓ **reason** Indicates the command was triggered by override, sensor or control program

- ✓ **cmsRefId** CMS reference, which can be used for data logging

- ✓ **start** Time when the control action resulting from command shall start. This attribute is used only with override commands to set a time to start an override action. If not specified, the override command starts immediately.

- ✓ **expiration** Time when the control action resulting from command shall be terminated. This attribute is used only with override commands to set a time to stop an override action. After the expiration of an override command, the system should go back to the state defined by the active control program. If not specified, there is no expiration for the override command.

Group

Properties

#	Property	Description
✓	address	Group address
✓	members	TALQ Addresses of members of the group
✓	purpose	Main purpose of the group

: The Certification Test Tool is designed to provide a high level of confidence that complementary systems can communicate successfully. As both the protocol and the test tool evolve, all mandatory and other core tests are confirmed by comparison with real-life scenarios (plug-fest or similar). Some tests of optional and more peripheral features may not yet have been confirmed in this way; such features are identified with an asterisk ().

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 TALQ Consortium

