



Certified Capability List

This Capability List is based on a certification session performed by the *TALQ Certification Tool (v2.1.0-beta.17)* on 2019-07-11 14:20:11.183 +0200.

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

The tool has successfully performed 40 tests.

Product details

Product Name CA13

Company UVAX CONCEPTS

Type GATEWAY

Notes

Generated on 2019-07-11 14:20:11.183 +0200

Certification performed by app version: 2.1.0-beta.17

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.
✓	swVersion	Software version installed on the device.
✓	location	Latitude, Longitude and Altitude.
✓	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
✓	communicationType	Type of communication technology implemented by the ODN (e.g. power line, wireless).
✓	logicalAddress	Logical address for communication within the ODN scope (IP address, Short Address, ...).
✓	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
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- ✓ **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.
✓	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

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.
✓	monitoringReference	Name of the entity (or physical device) being monitored by this function.
✓	numberOfLamps	Number of lamps being monitored by the lamp monitor function.
✓	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.
✓ reactivePower	Reactive power.
✓ apparentPower	Apparent Power.
✓ powerFactor	Active power/Apparent power.
✓ activeEnergy	Cumulative active energy (since installation or counter reset).

Events

#	Event type	Description
✓	lampPowerTooHigh	Lamp power is greater than expected lamp power + lampPowerTolerance
✓	lampPowerTooLow	Lamp power is smaller than expected lamp power - lampPowerTolerance
✓	lampVoltageTooHigh	Level of lamp voltage (not supply voltage) is greater than highLampVoltageThreshold.
✓	lampVoltageTooLow	Level of lamp voltage (not supply voltage) is smaller than lowLampVoltageThreshold.
✓	currentTooHigh	Supply current is above the highCurrentThreshold defined in the lamp type
✓	currentTooLow	Supply current is below the lowCurrentThreshold defined in the lamp type
✓	powerFactorTooLow	The power factor is below powerFactorThreshold
✓	lampFailure	The lamp is not operating as it is supposed to
✓	controlGearCommFailure	Indicates failure of the control gear

Electrical Meter

The electrical meter function supports electrical metering capabilities including measurements of voltage, current, power, energy, and power factor. This function may be associated with Luminaire Controllers, Cabinet Controllers or electrical meters installed in switch boxes. ODNs may implement both single phase and three phase meters. Typically meters within a control device will be single phase and stand-alone meters. A street side cabinet may have single phase or three phase meters.

Attributes

#	Attribute	Description
✓	totalPowerHighThreshold	Power above which the totalPowerTooHigh event is triggered.

✓ totalPowerLowThreshold	Power below which the totalPowerTooLow event is triggered.
✓ phase1PowerfactorLowThreshold	Phase 1 power factor below which the phase1PowerfactorTooLow event is triggered.
✓ phase2PowerfactorLowThreshold	Phase 2 power factor below which the phase2PowerfactorTooLow event is triggered.
✓ phase3PowerfactorLowThreshold	Phase 3 power factor below which the phase3PowerfactorTooLow event is triggered.
✓ phase1VoltageHighThreshold	RMS voltage above which the phase1VoltageTooHigh event is triggered.
✓ phase1VoltageLowThreshold	RMS voltage below which the phase1VoltageTooLow event is triggered.
✓ phase2VoltageHighThreshold	RMS voltage above which the phase2VoltageTooHigh event is triggered.
✓ phase2VoltageLowThreshold	RMS voltage below which the phase2VoltageTooLow event is triggered.
✓ phase3VoltageHighThreshold	RMS voltage above which the phase3VoltageTooHigh event is triggered.
✓ phase3VoltageLowThreshold	RMS voltage below which the phase3VoltageTooLow event is triggered.
✓ phase1CurrentHighThreshold	RMS current above which the phase1CurrentTooHigh event is triggered.
✓ phase1CurrentLowThreshold	RMS current below which the phase1CurrentTooLow event is triggered.
✓ phase2CurrentHighThreshold	RMS current above which the phase2CurrentTooHigh event is triggered.
✓ phase2CurrentLowThreshold	RMS current below which the phase2CurrentTooLow event is triggered.
✓ phase3CurrentHighThreshold	RMS current above which the phase3CurrentTooHigh event is triggered.
✓ phase3CurrentLowThreshold	RMS current below which the phase3CurrentTooLow event is triggered.
✓ phase1ActivePowerHighThreshold	Power above which the phase1ActivePowerTooHigh event is triggered.
✓ phase1ActivePowerLowThreshold	Power below which the phase1ActivePowerTooLow event is triggered.

✓ phase2ActivePowerHighThreshold	Power above which the phase2ActivePowerTooHigh event is triggered.
✓ phase2ActivePowerLowThreshold	Power below which the phase2ActivePowerTooLow event is triggered.
✓ phase3ActivePowerHighThreshold	Power above which the phase3ActivePowerTooHigh event is triggered.
✓ phase3ActivePowerLowThreshold	Power below which the phase3ActivePowerTooLow event is triggered.
✓ totalPower	Sum of the active power consumed on phase 1, 2 and 3, or just the power for a single phase meter.
✓ totalVA	Sum of the apparent power consumed on phase 1, 2 and 3, or just the apparent power for a single phase meter.
✓ totalVAR	Sum of the reactive power consumed on phase 1, 2 and 3, or just the reactive power for a single phase meter.
✓ phase1PowerFactor	Power factor on phase 1.
✓ phase2PowerFactor	Power factor on phase 2.
✓ phase3PowerFactor	Power factor on phase 3.
✓ phase1Voltage	RMS Voltage between phase 1 and neutral.
✓ phase2Voltage	RMS Voltage between phase 2 and neutral.
✓ phase3Voltage	RMS Voltage between phase 3 and neutral.
✓ phase1Current	RMS current on phase 1.
✓ phase2Current	RMS current on phase 2.
✓ phase3Current	RMS current on phase 3.
✓ phase1ActivePower	Active Power on phase 1.
✓ phase2ActivePower	Active Power on phase 2.
✓ phase3ActivePower	Active Power on phase 3.
✓ phase1ApparentPower	Apparent Power on phase 1.
✓ phase2ApparentPower	Apparent Power on phase 2.
✓ phase3ApparentPower	Apparent Power on phase 3.
✓ phase1ReactivePower	Reactive Power on phase 1.

✓ phase2ReactivePower	Reactive Power on phase 2.
✓ phase3ReactivePower	Reactive Power on phase 3.
✓ phase1ActiveEnergy	Cumulative active energy on phase 1.
✓ phase2ActiveEnergy	Cumulative active energy on phase 2.
✓ phase3ActiveEnergy	Cumulative active energy on phase 3.

Events

#	Event type	Description
✓	totalPowerTooHigh	Indicates total power is above the totalPowerHighThreshold
✓	totalPowerTooLow	Indicates total power is below the totalPowerLowThreshold
✓	phase1VoltageTooHigh	Indicates phase 1 supply voltage is above the phase1SupplyVoltageHighThreshold
✓	phase1VoltageTooLow	Indicates phase 1 supply voltage is below the phase1SupplyVoltageLowThreshold
✓	phase1CurrentTooHigh	Indicates the phase 1 current is above the phase1CurrentHighThreshold
✓	phase1CurrentTooLow	Indicates the phase 1 current is below the phase1CurrentLowThreshold
✓	phase1ActivePowerTooHigh	Indicates the phase 1 active power is above the phase1ActivePowerHighThreshold
✓	phase1ActivePowerTooLow	Indicates the phase 1 active power is below the phase1ActivePowerLowThreshold
✓	phase2VoltageTooHigh	Indicates phase 2 supply voltage is above the phase2SupplyVoltageHighThreshold
✓	phase2VoltageTooLow	Indicates phase 2 supply voltage is below the phase2SupplyVoltageLowThreshold
✓	phase2CurrentTooHigh	Indicates the phase 2 current is above the phase2CurrentHighThreshold
✓	phase2CurrentTooLow	Indicates the phase 2 current is below the phase2CurrentLowThreshold
✓	phase2ActivePowerTooHigh	Indicates the phase 2 active power is above the phase2ActivePowerHighThreshold
✓	phase2ActivePowerTooLow	Indicates the phase 2 active power is below the phase2ActivePowerLowThreshold

✓	phase3VoltageTooHigh	Indicates phase 3 supply voltage is above the phase3SupplyVoltageHighThreshold
✓	phase3VoltageTooLow	Indicates phase 3 supply voltage is below the phase3SupplyVoltageLowThreshold
✓	phase3CurrentTooHigh	Indicates the phase 3 current is above the phase3CurrentHighThreshold
✓	phase3CurrentTooLow	Indicates the phase 3 current is below the phase3CurrentLowThreshold
✓	phase3ActivePowerTooHigh	Indicates the phase 3 active power is above the phase3ActivePowerHighThreshold
✓	phase3ActivePowerTooLow	Indicates the phase 1 active power is below the phase2ActivePowerLowThreshold

Binary Sensor

A Binary Sensor function can be used to model any sensor that provides a digital, binary output. This function is optional for both CMS and Gateway, but when supported the requirements in this section shall apply.

Attributes

#	Attribute	Description
✓	level	Sensor Output level.

Events

#	Event type	Description
✓	sensorOutputOn	Indicates the sensor output changed to ON

Generic Actuator

The Generic Actuator function includes attributes related to generic control and it represents the smallest unit for control purposes.

Attributes

#	Attribute	Description
✓	defaultState	Sets the default state output for the generic actuator. This shall be applicable if no other command is active.

✓ actualState	This attribute should reflect the physical state of the source as much as possible. It may be calculated or measured, depending on the specific ODN implementation, which is outside the scope of this specification.
✓ targetCommand	Latest command for the generic actuator.
✓ feedbackCommand	This attribute reflects the command in effect and it might deviate from the actualState due to propagation time or due to internal ODN specific mechanisms to handle the priority of the requests.
✓ calendarID	TALQ Address of the calendar controlling this generic 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
✓	stateChange	The state has changed.
✓	invalidCalendar	This event is generated when a calendar has been allocated and can not be implemented it.
✓	invalidProgram	This event is generated when a control program has been allocated and can not be implemented it.
✓	programChange	This event is generated when the control program applicable to the actuator has changed.
✓	calendarChange	This event is generated when the calendar applicable to the actuator has changed.
✓	targetCommandChange	This event is generated when the targetCommand has changed.

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* 	Control Program and calendar options supported are defined by announcing support for the given modes
✓	dayOffset	<ul style="list-style-type: none"> 0 	Offset of start of day

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 VendorRecordingMode* ImmediateReportingMode ScheduledReportingMode 	Recording and Reporting modes supported

Events

#	Event Type	Description
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- ✓ **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
✓	maximumNumberOfGroups		Maximum number of groups per Gateway
✓	maximumGroupSize		Maximum number of group members per group

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

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
✓	startEndFlag	If the event denotes either the start or end of a 'special' period, this flag shall be included

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
✓	refAddress	Reference to the source of the command, e.g. sensor or control program
✓	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.

: 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

