Certified Capability List

This Capability List is based on a certification session performed by the *TALQ Certification Tool (v2.7.1-online.3) on 2026-08-20 00:46:40.191 +0200.*

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

The tool has succesfully performed *35 tests*.

Product details

Product Name	Cms Synergy
Company	DITRA Solutions
Type	CMS
URL	https://ditra-synergy.com/TestTalq/talq/cms/v2
Notes	
Generated on	2026-08-20 00:46:40.191 +0200
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Functional tests

The Functional Tests help customers understand the capabilities of a TALQ-certified product. All functional test cases are presented to provide comprehensive context, and successful completion of each test is indicated with a tick mark. Each Functional Test is related to a set of required TALQ

technical test cases.

Configuring

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Create light point controllers during onboarding ✔

When a Gateway first connects (bootstrap/onboarding), the CMS registers it and automatically creates the available light point controllers and creates the related configuration, control, programming, and monitoring features based on the capabilities announced by the Gateway. **CONFIG-1**

Create cabinet controllers during onboarding

When a Gateway first connects, the CMS registers the lighting cabinet controller and creates the related configuration, control, programming, and monitoring features, based on the capabilities announced by the Gateway. **CONFIG-2**

Create sensor-based light point controllers during onboarding

When a Gateway first connects, the CMS registers supported sensors and sets up sensor-triggered lighting features for light points (e.g., motion, noise, ambient light), according to the capabilities announced by the Gateway. **CONFIG-3**

Ingest and classify all discovered devices ✔

The CMS receives the full list of devices from the Gateway and correctly handles the device types/classes, asset details, and other properties for each device. **CONFIG-4**

Set light point electrical alarm thresholds ✔

The CMS configures thresholds on the Gateway for each light point (e.g., lamp voltage high/low, lamp current high/low, active power high/low, and power factor low). **CONFIG-5**

Set cabinet controller alarm thresholds ✔

The CMS configures electrical alarm thresholds on the Gateway for cabinet controllers. **CONFIG-6**

Set and update light point parameters

The CMS sends light point configuration parameters to the Gateway (e.g., identifiers, location/asset details, nominal power, and other device settings) and can modify them later. **CONFIG-7**

Create and manage groups of light points ✔

The CMS creates and edits groups of light points (e.g., by street, zone, or project) and sends the group definitions to the Gateway for use in control and reporting. **CONFIG-8**

Configure sampling frequency for measurements ✔

The CMS sets how often the Gateway reads measurements on the devices and/or sensors. **CONFIG-9**

Configure reporting frequency to the CMS ✔

The CMS sets how often the Gateway sends measurement readings to the CMS (independent of the sampling frequency). **CONFIG-10**

Deploy firmware updates to field devices

The CMS sends a firmware package to the Gateway, which then updates the target device(s) and reports status about devices' firmware update and progress back to the CMS. **CONFIG-11**

Monitoring 6 of 11

Receive and handle basic electrical values ✔

The CMS receives mains voltage, current, active power, and power factor from the Gateway via the data-logging service and handles them correctly. **MONITOR-1**

Track cumulative energy (kWh) ✔

The CMS receives the cumulative energy counter (kWh) from the Gateway via the data-logging service and handles it correctly. **MONITOR-2**

Track lamp operating hours ✔

The CMS receives each lamp's total runtime as a cumulative counter from the Gateway and handles it correctly. **MONITOR-3**

Track lamp switch-on count ✔

The CMS receives the cumulative switch-on counter for each lamp from the Gateway and handles it correctly. **MONITOR-4**

Track power loss count ✔

The CMS receives the cumulative count of power interruptions from the Gateway and handles it correctly. **MONITOR-5**

Verify dimming level after a manual override ✔

The CMS sends a manual override command to a light point and, after a configurable delay, uses on-demand reads to confirm the reported dimming level approaches the requested level. **MONITOR-6**

Receive and handle temperature

The CMS receives temperature values from the Gateway via the data-logging service and handles them correctly. **MONITOR-8**

Receive and handle presence detection

The CMS receives presence events/values from the Gateway via the data-logging service and handles them correctly. **MONITOR-9**

Receive and handle ambient noise level

The CMS receives noise-level values from the Gateway via the data-logging service and handles them correctly. **MONITOR-10**

Receive and handle ambient light level (lux)

The CMS receives light-level values from the Gateway via the data-logging service and handles them correctly. **MONITOR-11**

Track firmware update status and progress

The CMS receives firmware update events (start, progress, completion/failure) from the Gateway and presents them correctly. **MONITOR-12**

Controlling **5 of 7**

Manually send an override command to a single light point ✔

The CMS sends a manual override (ON/OF or dimming level) to one light point. **CONTROL-1**

Manually send an override command to a group of light points ✔

The CMS sends a manual override command to a defined group of light points. **CONTROL-2**

Schedule a manual override command with a delay ✔

The CMS sends a manual override command to one light point with a delay before execution. **CONTROL-3**

Manually change the dimming level with a smooth ramp ✔

The CMS sends a manual override command to one light point that includes a ramp-up/ramp-down time. **CONTROL-4**

Deploy a photocell-based on/off control program (single light point) ✔

The CMS creates and sends a control program that turns a single light point ON/OFF based on a local photocell. **CONTROL-5**

Deploy a presence-based dimming control program (single light point)

The CMS creates and sends a control program that changes the dimming level of a single light point based on a local presence sensor. **CONTROL-6**

Deploy a noise-based dimming control program (single light point)

The CMS creates and sends a control program that changes the dimming level of a single light point based on a local noise sensor. **CONTROL-7**

Alarming **4 of 5**

Handle lighting alarms ✔

The CMS ingests and processes lighting-related alarms sent by the Gateway via the data-logger service. **ALARM-1**

Handle electrical alarms ✔

The CMS ingests and processes electrical alarms sent by the Gateway via the data-logger service. **ALARM-2**

Handle invalid schedule/program alarms ✔

The CMS ingests and processes alarms about invalid calendars or control programs sent by the Gateway via the data-logger service. **ALARM-3**

Handle sensor-activity events

The CMS ingests and processes activity events (e.g., presence/noise) sent by the Gateway via the data-logging service. **ALARM-4**

Request and handle current alarm status ✔

The CMS requests the status of alarms from the Gateway and handles the response correctly. **ALARM-5**

Programming

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Create and deploy a daily fixed time on/off and dimming schedule ✔

The CMS generates and sends a control program that turns a light point ON/OFF and sets dimming level at specific times, the same every day. **PROGRAM-1**

Create and deploy an astro-clock on/off schedule with fixed time dimming ✔

The CMS generates and sends a control program that switches a light point at sunrise/sunset with an adjustable time offset (± minutes) and applies a time-based dimming plan during the astro-clock active period, every day. **PROGRAM-2**

Create and deploy a photocell-based on/off schedule with fixed-time dimming ✔

The CMS generates and sends a control program that turns a light point ON when the photocell indicates darkness and OFF when it is bright, with time-based dimming during the photocell active period, every day. **PROGRAM-3**

Create and deploy a combined photocell + astro-clock schedule with fixed-time dimming ✔

The CMS generates and sends a control program that turns a light point ON/OFF based on whichever trigger occurs first, photocell darkness/brightness or astro sunrise/sunset with time offset, and applies time-based dimming during the active period, every day. **PROGRAM-4**

Create and deploy an OFF window that spans the day boundary

The CMS generates and sends a control program that turns a light point OFF for a defined time window that crosses the day boundary (e.g., 23:00-04:00 when the system's day boundary is midnight, or a window that crosses 12:00 if the boundary is noon). Outside this window, the light follows its normal schedule. **PROGRAM-5**

Support seasonal exceptions (date-range rules) ✔

The CMS generates and sends a calendar with a year-round default rule plus a higher-priority rule that applies between two dates (e.g., Sept 10-Oct 16). **PROGRAM-6**

Support weekly exceptions (e.g., weekends) ✔

The CMS generates and sends a calendar with a year-round default rule plus a higher-priority rule for specific weekdays (e.g., every Saturday and Sunday). **PROGRAM-7**

Support layered weekly + seasonal exceptions (priority order) ✔

The CMS generates and sends a layered calendar: a year-round default rule; a higher-priority weekend rule; and an even higher-priority rule for a special date range (e.g., Day 1-Day 2, including Saturdays within that period). The most specific rule takes precedence. **PROGRAM-8**

Create and deploy a sensor-based dynamic lighting control program ✔

The CMS generates and sends a control program that changes dimming level based on sensor detection (e.g., presence), then returns to the normal level after the configured timeout. **PROGRAM-9**

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
✔	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.
✔	swVersion	Software version installed on the device.
✔	location	Latitude, Longitude and Altitude. [DEPRECATED: This attribute has been deprecated and it will be removed in the next MAJOR release. Please use the new LocationSensorFunction.location instead.]
✔	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],en d[/time]]] as defined by the Open Group for posix systems [POSIX]. [DEPRECATED: This attribute has been deprecated and it will be removed in the next MAJOR release. Please use the new TimeFunction.timeZone instead.]
✔	currentTime	Current time of the device defined as local time with time zone designator. [DEPRECATED: This attribute has been deprecated and it will be removed in the next MAJOR release. Please use the new TimeFunction.currentTime instead.]

Events

#	Event type	Description
✔	deviceReset	The physical device containing the logical device was reset
✔	batteryMode	Device operating in battery mode
✔	installationMode	Device is being installed
✔	maintenanceMode	Device is undergoing maintenance
✔	cabinetDoorOpen	Cabinet door is open. [DEPRECATED: This attribute has been deprecated and it will be removed in the next MAJOR release. Please use the new SegmentMonitor.cabinetDoorOpen instead.]
✔	batteryShutdown	Indicates the device has shut down due to battery discharge
✔	locationUpdated	Indicates the location of a device has changed.

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
✔	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.
✔	parentAddress	TALQ Address of the parent device, e.g. gateway. It shall point to a specific communication function.

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
✔	crlUrn	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
✔	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

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
✔	numberOfLamps	Number of lamps being monitored by the lamp monitor function.
✔	operatingHours	Number of hours the lamp is on. This is the value used in CLO and may be set by the CMS.
✔	temperature	Temperature of the device implementing this function. [DEPRECATED: This attribute has been deprecated and it will be removed in the next MAJOR release. Please use the new TemperatureSensorFunction.temperature instead.]
✔	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.
✔	powerFactor	Active power/Apparent power.
✔	powerFactorSense	Phase sense of power factor.
✔	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 (e.g. the lamp is broken). This event shall be used to detect a situation where the lamp (or LED module(s)) should be lit, but produce no light. This could be detected by the current flowing or power consumed.
✔	highTemperature	Indicates temperature is above the high threshold
✔	relayFailure	Set in case of internal relay is failing
✔	absoluteLampPowerTooHigh	Indicates the power is above the lampPowerHighThreshold in the lamp type
✔	absoluteLampPowerTooLow	Indicates the power is below the lampPowerLowThreshold in the lamp type
✔	controlGearCommFailure	Indicates failure of the control gear
✔	cyclingFailure	Indicates the lamp is constantly switching ON and OFF in an unexpected manner
✔	supplyLoss	Indicates loss of mains power
✔	contactorError	Indicates error in contactor
✔	lampUnexpectedOn	Indicates lamp is unexpectedly on
✔	leakageDetected	Indicates that an earth leakage fault has been detected

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
✔	totalPower	Sum of the active power consumed on phase 1, 2 and 3, or just the power for a single phase meter.

✔	totalActiveEnergy	Total cumulative kWh measured by the meter since installation date (or counter reset).
✔	totalPowerFactor	Total active power divided by total apparent power.
✔	supplyVoltage	Average between Phase1 RMS Voltage, Phase2 RMS Voltage and Phase3 RMS Voltage, or in the case of a single phase meter just the RMS supply voltage.
✔	totalCurrent	Sum of the RMS currents on phase 1, 2 and 3.
✔	averageCurrent	Average RMS current on phase 1, 2 and 3.

Events

#	Event type	Description

Photocell

A Photocell function models the capabilities of a photocell that can be used for lighting control. This function shall be supported by the CMS and optionally by the ODNs (Gateway).

Attributes

#	Attribute	Description
✔	onLevel	Illuminance level at which the photocell switches to on state.
✔	offLevel	Illuminance level at which the photocell switches to off state.
✔	photocellOutput	Output state of the photocell. Possible values are ON (means the illuminance level has fallen below the onLevel) and OFF (means the illuminance level has risen above the offLevel).

Events

#	Event type	Description
✔	photocellOutputOn	The photocell output has changed to ON

Services

Configuration Service

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

Options

#	Option	Value	Description

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

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	• VendorRecordingMode • EventRecordingMode • ImmediateReportingMode	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

Objects

Event log data

Event log data contains a single event, with eventType and value, in each single log entry. It also includes information about whether the log denotes the start or end of the event. Furthermore additional information can be added with the info attribute.

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

A command defines a type of control action that can be applied to a function. Commands can be generated by a manual override action or by a control program.

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. The cmsRefId in a Command is a free text to be used by the CMS for any purpose, e.g: to differentiate contexts. It is a token that allows the CMS to match client requests to the original notification.
✔	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.
✔	rampToLevelTime*	The time (in seconds) taken for the value to ramp to the specified level. The change will be finished rampToLevelTime seconds after: the scheduled time if the change comes from a control program; the reception of the request, or the command.start time attribute, if the change comes from an override command, or; the sensor event is raised if the control is sensor-based. If actions related to one command remain to be completed when a subsequent command is received, the subsequent command shall take precedence.

✔	rampFromLevelTime*	The time (in seconds) taken for the value to ramp to the specified level. The change will be finished rampFromLevelTime seconds after: the scheduled time if the change comes from a control program; the reception of the request if the change comes from an override command; expiry of the related command, or; the sensor event is lowered and the hold time subsequently expires if the control is sensor-based. If actions related to one command remain to be completed when a subsequent command is received, the subsequent command shall take precedence.

Group

A group is set of entities that can be addressed by the same group address. Devices and functions within devices can be assigned to a group. A group may also include other groups as members.

Properties

#	Property	Description
✔	address	Group address
✔	members	TALQ Addresses of members 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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