# ⟪⟫ TALQ

# Certified Capability List

This Capability List is based on a certification session performed by the *TALQ Certification Tool (v2.4.1-update.3) on 2022-08-25 11:46:27.609 +0000.*

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

The tool has succesfully performed *37 tests*.

# Product details

| | |
|---:|:---|
| **Product Name** | Novaccess Smart City Platform |
| **Company** | Novaccess SA |
| **Type** | GATEWAY |
| **Notes** | |
| **Generated on** | 2022-08-25 11:46:27.609 +0000 |
| **Supported profiles** | • Lighting |
| **API version certified:** | 2.4.1 |
| **Certification performed by app version:** | 2.4.1-update.3 |

# 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 |
|---|-----------|-------------|
| ✔ | serial | Serial number of the device. |
| ✔ | hwType | Hardware type of the device. |
| ✔ | swType | Software type of device. This attribute may be useful if the same hardware supports multiple firmware versions with different functions. |
| ✔ | 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.] |
| ✔ | deviceReset | The physical device containing the logical device was reset. |
| ✔ | 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 |

## 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). |
| ✔ | 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. |
| ✔ | communicationFailure | This attribute is updated by the ODN when the communication function is not operating as expected. |

## 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. |
| ✔ | 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 |
|---|-----------|-------------|
| ✔ | 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. |
| ✔ | lightStateChange | Light state has changed. |

## 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. |
| ✔ | numberOfLamps | Number of lamps being monitored by the lamp monitor function. |
| ✔ | 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. |
| ✔ | controlGearCommFailure | Indicates failure of the control gear. |

## Events

| # | Event type | Description |
|---|-----------|-------------|
| ✔ | 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. |
| ✔ | powerfactorThreshold | Power factor below which the powerfactorTooLow event is triggered. |
| ✔ | supplyVoltageHighThreshold | Supply voltage above which the supplyVoltageTooHigh event is triggered. |

| | | |
|---|---|---|
| ✔ | supplyVoltageLowThreshold | Supply voltage below which the supplyVoltageTooLow event is triggered. |
| ✔ | totalCurrentHighThreshold | RMS current above which the currentTooHigh event is triggered. |
| ✔ | totalCurrentLowThreshold | RMS current below which the currentTooLow 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. |
| ✔ | totalActiveEnergy | Total cumulative kWh measured by the meter since installation date (or counter reset). |
| ✔ | frequency | Frequency on the line. |
| ✔ | 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. |
| ✔ | totalPowerTooHigh | Indicates total power is above the totalPowerHighThreshold. |
| ✔ | totalPowerTooLow | Indicates total power is below the totalPowerLowThreshold. |
| ✔ | powerfactorTooLow | Indicates the power factor is below the powerfactorThreshold. |
| ✔ | supplyVoltageTooHigh | Indicates supply voltage is above the supplyVoltageHighThreshold. |
| ✔ | supplyVoltageTooLow | Indicates supply voltage is below the supplyVoltageLowThreshold. |
| ✔ | totalCurrentTooHigh | Indicates the current is above the totalCurrentHighThreshold. |
| ✔ | totalCurrentTooLow | Indicates the current is below the totalCurrentLowThreshold. |

## Events

| # | Event type | Description |
|---|---|---|
| ✔ | totalPowerTooHigh | Indicates total power is above the totalPowerHighThreshold |
| ✔ | totalPowerTooLow | Indicates total power is below the totalPowerLowThreshold |
| ✔ | powerFactorTooLow | talq.feature.event.ElectricalMeterFunction.powerFactorTooLow.desc |

| | | |
|---|---|---|
| ✓ | supplyVoltageTooHigh | Indicates supply voltage is above the supplyVoltageHighThreshold |
| ✓ | supplyVoltageTooLow | Indicates supply voltage is below the supplyVoltageLowThreshold |
| ✓ | totalCurrentTooHigh | Indicates the current is above the totalCurrentHighThreshold |
| ✓ | totalCurrentTooLow | Indicates the current is below the totalCurrentLowThreshold |

## Presence Sensor

The Presence Sensor function allows a CMS to detect presence. This function may be used in Parking Place detectors as well as in dynamic outdoor lighting scenario.

## Attributes

| # | Attribute | Description |
|---|---|---|
| ✓ | presenceStatus | Presence status. |
| ✓ | presenceStatusChanged | Indicates the presence status changed. |

## Events

| # | Event type | Description |
|---|---|---|

# 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 |
|---|---|---|---|

| ✔ supportedTypes | <ul><li>AbsoluteActivePeriod</li><li>AstroClockActivePeriod</li><li>DynamicControl*</li><li>FixedControlEffect*</li><li>ccDate*</li><li>ccDay*</li></ul> | Control Program and calendar options supported are defined by announcing support for the given modes |
|---|---|---|
| ✔ maxSwitchPointsPerProgram | | Maximum number of switching points per control program |
| ✔ dayOffset | <ul><li>1</li><li>2</li></ul> | Offset of start of day |
| ✔ ccDateSupport | | Indicates the ccDate options supported |
| ✔ ccDaySupport | | Indicates the ccDay options supported |
| ✔ programSecondsSupported* | | Indicates whether the field of seconds is supported in programs. |

## 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><li>VendorRecordingMode</li><li>EventRecordingMode</li><li>ImmediateReportingMode</li></ul> | 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 |
|---|---|---|---|

## Test Service

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

# Objects

## 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 |

## Command

## Properties

| # | Property | Description |
|---|----------|-------------|
| ✔ | state | Light state to be applied to the lamp actuator |
| ✔ | cmsRefId | CMS reference, which can be used for data logging |

✱: 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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