

## Measured Central Management System: Owlet IoT Witness Test

**Test date:** 24 August 2017

**Location:** Urbis Schreder – Basingstoke, United Kingdom

**Facilitator:** Kevin Spencer

**Witness:** Adam Jessop

**Testing:** Owlet IoT Central Management System (CMS)

**Description:** Owlet IoT is a new monitoring and control system for street lighting. Owlet allows every lamp to be monitored and controlled individually. This document represents the witness test report for Urbis Schreder's Owlet IoT CMS. Urbis Schreder is seeking approval to use this Central Management System as the CMS part of an equivalent meter in Great Britain.

### 1. System Requirements

Test Ref	Requirement / Details	Requirement Reference	Comment	Complies
<b>Test Group 1</b>	<b><u>Configuration Control</u></b>			
Test 1.1	CMS software version	Non-functional	Version 3.102.12.17 is been tested. The current software version is shown under the 'imprint' tab, accessible from the homepage. A screenshot of the	Pass

			production screen was sent by Urbis Schreder.	
Test 1.2	CMS operating platform and version	Non-functional	Same info as above/ Owlet IoT	Pass
<b>Test Group 2</b>	<b><u>System Security</u></b>		Secure access procedures have been demonstrated for the different participants.	Pass
Test 2.1	HHDC	4.5.2.3 (i)		Pass
Test 2.2	Suppliers	4.5.2.3 (i)		Pass
Test 2.3	Customers	4.5.2.3 (i)		Pass
Test 2.4	MA	Functional		Pass
<b>Test Group 3</b>	<b><u>Synchronisation to UTC</u></b>	4.5.2.3 (k)	A screenshot of the server showing Date/Time in UTC was sent by Urbis Schreder.	Pass

## 2. Data Input and Storage Requirements

Test Ref	Requirement / Details	Requirement Reference	Comment	Complies
<b>Test Group 4a</b>	<b><u>Detailed Inventory information</u></b>			
Test 4.1	Add, delete, modify manually or electronically:	Functional	Automatic commissioning process.	Pass
Test 4.1.1	Road Reference	Functional	The map system provides the controller	Pass

			coordinates. A screenshot of the map system was sent by Urbis Schreder.	
Test 4.1.2	Town, Parish, District	Functional		Pass
Test 4.1.3	Road Name	Functional		Pass
Test 4.1.4	Location	Functional		Pass
Test 4.1.5	Unit Type	Functional		Pass
Test 4.1.6	Unit Identity	Functional		Pass
Test 4.1.7	CMS Unit Reference	Functional	CMS Unit reference for each controller is derived from the MAC ID of the corresponding device. This will be unique across all the controllers present in the system. CMS unit reference will be used to identify the devices in the generated event logs and audit tails. The MAC address of the device is shown in the screenshot provided by Urbis Schreder.	Pass
Test 4.1.8	Charge Code	Functional	In details	Pass
Test 4.1.9	Number of Items	Functional	The number of lights per CMS unit reference is restricted to one.	Pass
Test 4.1.10	Switch Regime	Functional	Switch regime 999 is configured because a device will have different dim levels throughout the day.	Pass

Test 4.1.11	Number of Controls	Functional	Always 1.	Pass
Test 4.1.12	Control Charge Code	Functional	Yet to be applied	N/A
Test 4.1.13	Ordinance Survey Grid ref 'East' or Latitude	Functional	The Latitude is given in each controller's pop-up window and in the technical details. See screenshot provided by Urbis Schrader.	Pass
Test 4.1.14	Ordinance Survey Grid ref 'North' or Longitude	Functional	As above.	Pass
Test 4.1.15	Exit Point	Functional	As above.	Pass
Test 4.2	Audit Trail	Functional	An option is available to generate inventory audit trails for all controllers present in the system for any given time range.	Pass
<b>Test Group 4b</b>	<b><u>Inventory control information</u></b>			
Test 4.3	Add, delete, modify manually or electronically:	Functional		Pass
Test 4.3.1	Sub-Meter ID	Functional		Pass
Test 4.3.2	Effective From Date	Functional		Pass
Test 4.3.3	CMS Unit Reference	Functional	Same as Test 4.1.7.	Pass
Test 4.3.4	Number of Items	Functional	In the Owlet IOT version under test the number of lights per CMS unit reference is restricted to one.	Pass

Test 4.3.5	Switch Regime	Functional		Pass
Test 4.3.6	Charge Code	Functional	Same as above	Pass
Test 4.4	Audit Trail	Functional	An option is available to generate detailed inventory audit trails for all controllers present in the system for any given time range.	Pass
<b>Test Group 5</b>	<b><u>Equipment control information</u></b>			
Test 5.1	Add, delete, modify manually or electronically	Functional	Addition and deletion of controllers are not supported.	n/a
Test 5.1.1	CMS Unit Reference	Functional		n/a
Test 5.1.2	Sum of CMS Controller devices	Functional		n/a
Test 5.1.3	Switch Regime	Functional		n/a
Test 5.1.4	Charge Code	Functional		n/a
Test 5.2	Audit Trail	Functional		n/a

### 3. Process Requirements

Test Ref	Requirement / Details	Requirement Reference	Comment	Complies
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<b>Test Group 6</b>	<b><u>CMS Issue Instructions</u></b>			
Test 6.1	Scenario 1	4.5.2.3 (b)	<p>Test 1</p> <ul style="list-style-type: none"> <li>• Lumen: 100% - Events recorded start time of 12.00pm and end time of 12.10pm and energy recorded on the register as 143.3W.</li> <li>• Lumen: 50% - Events recorded start time of 12.10pm and end time of 12.20pm and energy recorded on the register as 70.1W.</li> <li>• Lumen: 10% - Events recorded start time of 12.20pm and end time of 12.30pm and energy recorded on the register as 18.1W.</li> <li>• Lumen: 0% - Events recorded start time of 12.30pm and energy recorded on the register as 1.33W.</li> </ul> <p>ELEXON witnessed the events and replicate calculations of this test and found that test 1 satisfied our requirements.</p>	

Test 6.2	Scenario 2	4.5.2.3 (b)	<p>Test 2</p> <ul style="list-style-type: none"> <li>• Lumen: 66% - Events recorded start time of 12.50pm and end time of 13.00pm and energy recorded on the register as 91.9W.</li> <li>• Lumen: 33% - Events recorded start time of 13.00pm and end time of 13.10pm and energy recorded on the register as 48.1W.</li> <li>• Lumen: 0% - Events recorded start time of 13.10pm and energy recorded on the register as 1.29W.</li> </ul> <p>ELEXON witnessed the events and replicate calculations of this test and found that test 1 satisfied our requirements.</p>	
Test 6.3	Scenario 3 - Control Failure	4.5.2.3 (b)	<p>Control failure</p> <p>A dimming profile was configured and the objective was to disconnect the driver to the CMS by setting it up on airplane mode. The driver won't be able to communicate any data to the server but should still execute the dimming profile. When the driver goes back online, it should re-connect to the CMS and update any information collected while offline.</p> <p>The following scenario was created:</p> <ul style="list-style-type: none"> <li>• Lumen: 100% - Events recorded start time of 13.30pm and end time of 13.40pm.</li> <li>• The device was set on airplane mode at 13.36pm. The device stopped sending information to the CMS.</li> <li>• Lumen: 20% - Events recorded start time of 13.40pm and end time of 13.50pm. CMS has</li> </ul>	

			<p>not received the updated event information from the device.</p> <ul style="list-style-type: none"> <li>Lumen: 0%. Events recorded at 13.50pm. Device is back online and reconnected to the CMS. The system received all missing data from the driver.</li> </ul>	
Test 6.4	Scenario 4 – Revised Data after control failure (following day)	4.5.2.3 (b) 4.5.2.3 (c)		n/a
Test 6.5	Receive Response (optional)	Functional		n/a
<b>Test Group 7</b>	<b><u>Record operational switching times and power levels</u></b>		For Test Group 7 please see Test Evidence in Attachment C.	
Test 7.1	Scenario 1 - Switch Regime 999	4.5.2.3 (b) 4.5.2.3 (c)		
Test 7.2	Scenario 2 - Switch Regime 998	4.5.2.3 (b) 4.5.2.3 (c)		
Test 7.3	Scenario 3 - Control Failure	4.5.2.3 (b) 4.5.2.3 (c)		
Test 7.4	Scenario 4 – Revised Data after control failure (following day)	4.5.2.3 (b) 4.5.2.3 (c)		
Test 7.5	Audit Trail	4.5.2.3 (j)		



<b>Test Group 8</b>	<b>Generate Operational Event Log</b>		For Test Group 7 please see Test Evidence in Attachment C.	
Test 8.1	Scenario 1 - Switch Regime 999	4.5.2.3 (b) 4.5.2.3 (c)		
Test 8.2	Scenario 2 - Switch Regime 998	4.5.2.3 (b) 4.5.2.3 (c)		
Test 8.3	Scenario 3 - Control Failure	4.5.2.3 (b) 4.5.2.3 (c)		
Test 8.4	Scenario 4 – Revised Data after control failure (following day)	4.5.2.3 (c)		
Test 8.5	Available daily (Separate CMS and MA System)	4.5.2.3 (b)		
Test 8.6	On Request (Integrated CMS and MA System)	4.5.2.3 (c)		
Test 8.7	Audit Trail	4.5.2.3 (j)		
<b>Test Group 9</b>	<b>Volume and Performance</b>			
Test 9.1	Compliance with operational timescales	Functional	Can be provided on demand or scheduled for next day.	Pass

#### 4. Data Output Requirements

Test Ref	Requirement / Details	Requirement Reference	Comment	Complies
<b>Test Group 10</b>	<b><u>Operational Event Log</u></b>		See Audit Trail	
Test 10.1	File Format	4.5.2.3 (c)		Pass
Test 10.2	Filename	4.5.2.3 (c)		Pass
Test 10.3	Header identifier	4.5.2.3 (c)		Pass
Test 10.4	Sub-Meter ID	4.5.2.3 (c)		Pass
Test 10.5	Date	4.5.2.3 (c)		Pass
Test 10.6	Version	4.5.2.3 (c)		Pass
Test 10.7	CMS Unit reference	4.5.2.3 (c)		Pass
Test 10.8	Time	4.5.2.3 (c)		Pass
Test 10.10	Percentage of base power	4.5.2.3 (c)		Pass
Test 10.10	Information Flag	4.5.2.3 (c)		Pass
Test 10.11	Trailer	4.5.2.3 (c)		Pass