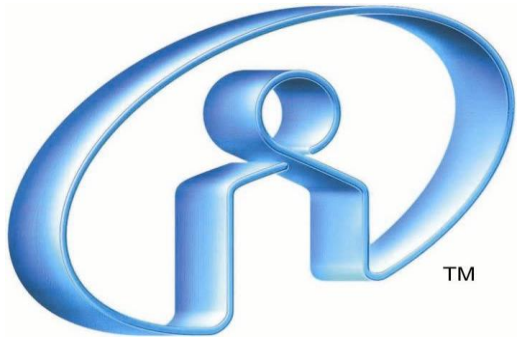
Reply from ECHONET for HGI SDT project



- This slide and the result of SDT transformation for ECHONET devices are provided under Apache 2.0 to answer the liaison letter from HGI.

30 September, 2015

ECHONET Consortium

Corresponding ECHONET device classes

- The following ECHONET device classes for target devices at SDT project are available shown as in the below table.
  (Ref. Appendix Detailed Requirements for ECHONET Device Objects Release F, http://www.echonet.gr.jp/english/spec/spec_app_f_e.htm)

Target classes for SDT	Corresponding ECHONET device classes	
Common functions for all devices	2. Super class	
Designated target devices at HGI *(12 devices)* • dimmer-switch • thermometer-sensor • magnet-contact • energy-plug • on/off switch • washing machine • multi-socket electrical-extension-block	3.1.17 Temperature sensor	3.3.28 General lighting
	3.1.40 Open/close door sensor	3.3.29 Mono functional lighting
	3.1.34 Electric energy sensor	3.4.6 Washing machine
	3.1.35 Current value sensor	3.4.8 Clothes dryer
	3.3.20 Watt-hour meter	3.4.9 Washer and dryer
	3.3.24 Power distribution board metering	3.6.1 Switch
Important key devices designated by Japanese government *(9 devices)* (1) Smart Meter, 2) Air Conditioner, 3) Water Heater, 4) Lighting Equipment, 5) Solar Power, 6) Storage Battery, 7) Fuel Cell, 8) EV/PHV)	3.3.25 Low-voltage smart electric energy meter	3.2.1 Home air conditioner
	3.3.27 High-voltage smart electric energy meter	3.3.18 Electric vehicle charger/discharger
	3.3.13 Household solar power generation	3.3.8 Electric water heater
	3.3.17 Storage battery	3.3.11 Instantaneous water heater
	3.3.28 General lighting (reprinted)	3.3.29 Mono functional lighting (reprinted)
	3.3.16 Fuel cell	
Devices related to gas *(6 devices)*	3.1.1 Gas leak sensor	3.3.22 Gas meter
	3.1.28 Gas sensor	3.3.23 LP gas meter
	3.3.19 Engine cogeneration	3.3.26 Smart gas meter
Others	Other classes (e.g. sensors defined at section 3.1)	

SDT Mapping rule for ECHONET devices

- SDT transformation is proceeded based on the structure of ECHONET device objects specs.
- Each property for superclass is described by the <ModuleClass> element while each property for each class is described by the <RootDevice> element.

<table>
<tr><th colspan="4">The structure of the current ECHONET Device object specification (Appendix. F)</th><th colspan="3">The structure of XML at SDT</th></tr>
<tr><td colspan="4">Chapter 2. Device Object Super Class Requirement</td><td colspan="3" rowspan="2">Domain/Modules/</td></tr>
<tr><td colspan="3">2.1～2.22 Details of properties for Super Class</td></tr>
<tr><td colspan="4" rowspan="2"></td><td>ModuleClass name = operationStatus</td><td>DataPoint</td></tr>
<tr><td>ModuleClass name = instalationLocation</td><td>DataPoint</td></tr>
<tr><td colspan="4" rowspan="2"></td><td>ModuleClass name = faultStatus</td><td>DataPoint</td></tr>
<tr><td colspan="4">Chapter 3. Detailed Requirements for Device Objects</td><td colspan="3">Domain/RootDevices/</td></tr>
<tr><td rowspan="3"></td><td rowspan="3">3.1 Sensor-related Device Class Group</td><td rowspan="2">3.1.1 Gas leak sensor Class</td><td rowspan="2">Details of properties</td><td rowspan="3">RootDevice id=echonet.gasLeakSensor</td><td colspan="2">Module name=operationStatus (by extend superclass)</td></tr>
<tr><td rowspan="2">Module name = gasLeakSensorDataPoints</td><td>DataPoint</td></tr>
<tr><td colspan="2">…</td><td>DataPoint</td></tr>
<tr><td colspan="3">…</td><td colspan="3">….</td></tr>
<tr><td colspan="4"></td><td colspan="3">…</td></tr>
</table>

Example of SDT transformation for ECHONET devices

```
<?xml version="1.0" encoding="utf-8"?>
<Domain id="jp.echonet" xmlns:xi="http://www.w3.org/2001/XInclude"
xmlns="https://github.com/Homegateway/RWD050-public/blob/master/SDT2.0.1/domain.xsd">
 <Modules>
  <!-- 全機種共通機能 -->
  <!-- common functions among all devices -->
  <!-- 2. 機器オブジェクトスーパークラス -->
  <!-- 2. Device Object Super Class -->
  <ModuleClass name="operationStatus">
   <Data>
    <DataPoint name="operationStatus" type="boolean" writable="true">
     <Doc>This property indicates the ON/OFF status.</Doc>
    </DataPoint>
   </Data>
   <Events>
    <Event name="operationStatus" />
   </Events>
  </ModuleClass>
  <ModuleClass name="installationLocation">
   <Data>
    <DataPoint name="installationLocation" type="string" writable="true">
     <Doc>This property indicates the installation location</Doc>
    </DataPoint>
   </Data>
   <Events>
    <Event name="installationLocation" />
   </Events>
...
```

Description for super class

```
  <RootDevices>
   <!-- HGI指定の12機種 -->
   <!-- 3.1.17 温度センサクラス -->
   <!-- 12 devices designated by HGI -->
   <!-- 3.1.17 Temperature sensor -->
   <RootDevice id="echonet.temperatureSensor">
    <Modules>
     <Module name="operationStatus">
      <extends domain="jp.echonet" class="operationStatus"/>
     </Module>
     <Module name="installationLocation">
      <extends domain="jp.echonet" class="installationLocation"/>
     </Module>
     <Module name="standardVersionInformation">
      <extends domain="jp.echonet" class="standardVersionInformation"/>
     </Module>
     <Module name="identificationNumber">
      <extends domain="jp.echonet" class="identificationNumber"/>
     </Module>
...
```

Description
for each device class


Energy
Conservation
and
Homecare
Network