Consumer Electronics and Web of Things

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Cloud Systems Solution Center
Panasonic Corporation
WoT Applications around CEs

Game
Entertainment
http://panasonic.net/center/tokyo/

Business
Service

Consumer Electronics


http://panasonic.co.jp/ad/pks/global/index.html

http://www.massage-sessel-berlin.de/

Security


http://news.panasonic.net/japanstory/2014/0108_26069.html


Wellness
Healthcare


http://www.massage-sessel-berlin.de/

Education

http://panasonic.co.jp/ad/pks/global/index.html

Travel Assistance

http://panasonic.jp/car/special/tabinavi/
Panasonic has already started the smart home business globally.

Panasonic has opened Cloud Life Experience Show Room at Tokyo in Jun 7th, 2014. That is named “Wonder Life Box 2020”.

The concept of Panasonic Show Room is that thanks to “Internet of Things” technology, visitors really experience Convenient, Exciting, Relaxed high quality life in 2020.
WoT could assume both App-Cloud API (Type1) and Device API (Type2) as its API to access physical Sensors, Devices and Sets such as CEs.
## Comparison of App-Cloud API and Device API

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<th>App-Cloud API (Type1)</th>
<th>Device API (Type2)</th>
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<td>None (Embedded) and/or P2P</td>
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<td>Web Server (Cloud might be agent of device)</td>
<td>Low Device</td>
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<tr>
<td>Assumption</td>
<td>Web Server (Cloud might be agent of device)</td>
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<td>Simple</td>
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<tr>
<td>API Granularity</td>
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<tr>
<td>Number of Standardization</td>
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<td>Main Standardization Partners</td>
<td>Set Manufactures, Cloud Servicers</td>
<td>Device Manufactures</td>
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Both App-Cloud API (Type1) and Device API (Type2) are important and co-exists.

Panasonic would like to contribute to define App-Cloud API (Type1).
Physical Control Protocol Independency

Physical CE Control Protocols such as Echonet Lite, EE-Bus, IR Control and so on are independent from APP-Cloud API.

Harmonizing a variety of multiple CE control protocols is out of scope of APP-Cloud API standardization, however, the model of some CE Control Protocols could be referred as App-Cloud API object model.
A variety of App-Cloud API description should be supported.

**HTTPS**
GET https://apipanasonic.com/remote/v1/111111/setOperationStatus?params=[ON] HTTP/1.1

**WebSocket**
```
{
  "id": 1,
  "device_id": 111111,
  "method": "setOperationStatus",
  "params": ["ON"],
}
```

**JavaScript**
```javascript
aircon.setOperationStatus("ON", function receive() {
  
};
```
Type of App-Cloud API

- Get the list of registered devices
- Get the status of each device
- Set and Do notification
- Control each device
Safety Issue  
  e.g. Some CEs treat heat cycle. App might be able to make fire.

Privacy Issue  
  e.g. App might be able to peep other person’s house through Robot Cleaner which has camera.

Business and Security Issue  
  e.g. User and/or Device Authentication might be better as close API because of vendor business dependency and security.

It might be better provide both Open API and Authority Managed API.