Results and Issues for Burlingame Plugfest

December 13th, 2017
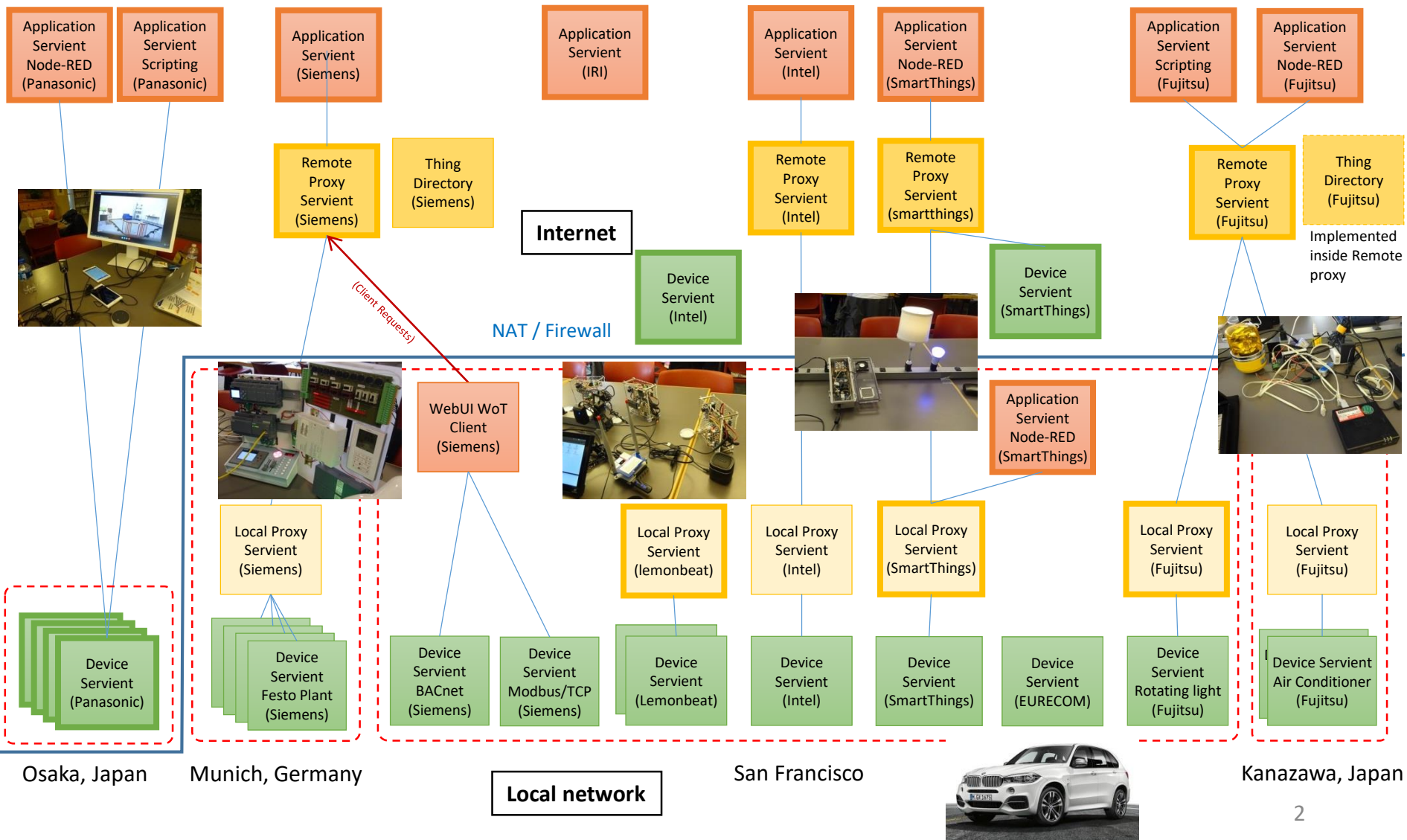
Ryuichi Matsukura

Fujitsu Laboratories Ltd. / Fujitsu Ltd.
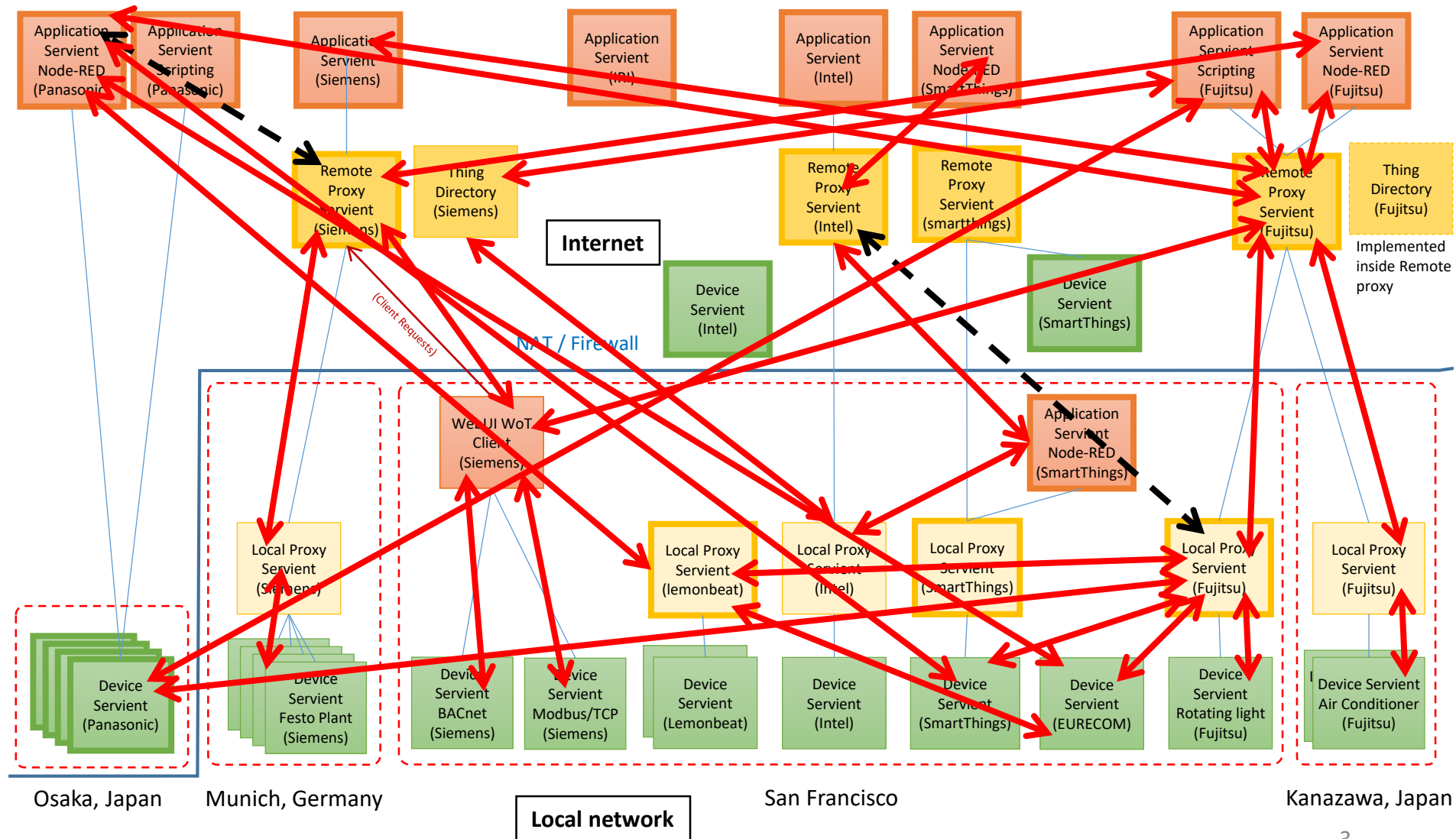
See TPAC2017 plugfest github
https://github.com/w3c/wot/blob/master/plugfest/2017-burlingame/preparation.md

Servients diagram on TPAC2017

Application Servient Node-RED (Panasonic)

Application Servient Scripting (Panasonic)

Application Servient (Siemens)

Application Servient (IRI)

Application Servient (Intel)

Application Servient Node-RED (SmartThings)

Application Servient Scripting (Fujitsu)

Application Servient Node-RED (Fujitsu)

Remote Proxy Servient (Siemens)

Thing Directory (Siemens)

Remote Proxy Servient (Intel)

Remote Proxy Servient (smartthings)

Remote Proxy Servient (Fujitsu)

Thing Directory (Fujitsu)

Implemented inside Remote proxy

Internet

Device Servient (Intel)

Device Servient (SmartThings)

NAT / Firewall

(Client Requests)

Local Proxy Servient (Siemens)

WebUI WoT Client (Siemens)

Application Servient Node-RED (SmartThings)

Device Servient Festo Plant (Siemens)

Local Proxy Servient (lemonbeat)

Local Proxy Servient (Intel)

Local Proxy Servient (SmartThings)

Local Proxy Servient (Fujitsu)

Local Proxy Servient (Fujitsu)

Device Servient (Panasonic)

Device Servient BACnet (Siemens)

Device Servient Modbus/TCP (Siemens)

Device Servient (Lemonbeat)

Device Servient (Intel)

Device Servient (SmartThings)

Device Servient (EURECOM)

Device Servient Rotating light (Fujitsu)

Device Servient Air Conditioner (Fujitsu)

Osaka, Japan

Munich, Germany

Local network

San Francisco

Kanazawa, Japan

2

TPAC2017 Plugfest results

Summary of achievements

- Proxy servients can help to set up a larger scale system
  - Proxy servients aggregate applications and devices to easily connect to each other.
- Connectivity and security
  - Some resolutions were given for the local and the Internet connections including NAT / Firewall traversal
- Many devices can connect using WoT framework
  - Sensors and actuators of house, building, factory and vehicle
  - ECHONET Lite, OCF, SmartThings, IPSO, BACnet, KNX, Lemonbeat, Modbus, EtherCAT, and VISS
- Applications are developed on Scripting API and Node-RED
  - Applications were connected to the proxies and the devices using the external WoT interface.

Issues for the next

- Inter-Servient Interface
    - Detailed specification is necessary for the plugfest participants
    - -> Share your interface descriptions if possible
      See Fujitsu implementations on the appendix of the plugfest preparation document
      https://github.com/w3c/wot/blob/master/plugfest/2017-burlingame/preparation.md
    - Some mismatches on the implementations: Action vs. Set, payload format, …

- Architecture
    - Proxy servient: function should be specified

- Connectivity and security
    - Interoperable firewall and NAT traversal patterns between remote/local proxies
    - Security consideration

- TD management
    - Functions and Interface of Thing directory should be specified.
    - Life cycle management of TD
    - Local and remote TD

- TD Model
    - Event representation
    - Complex Action representation
    - Semantic annotations
    - Protocol bindings to specific protocols, for examples OCF, EHONET lite,…

Action plans

- Plugfest call

- Plugfest guideline document
  - Detailed specification will be shown for new participants
  - Part of them should be merged to WG documents and others to notes or appendix after the discussions
  - Setup the document on IG repository