ALLSEEN ALLIANCE

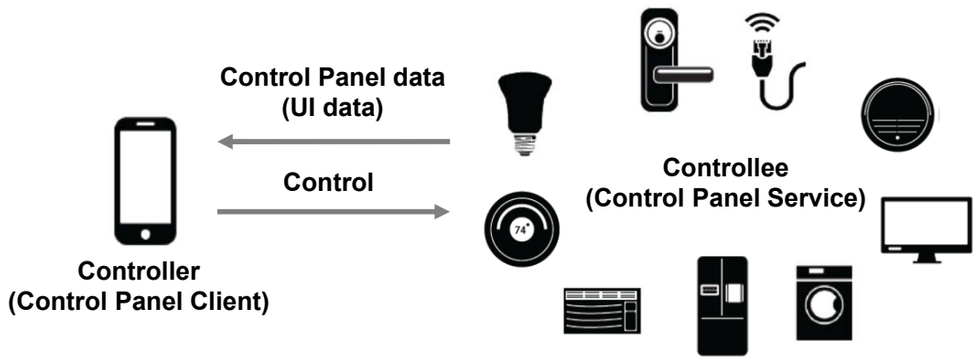
Home Appliances & Entertainment (HAE) Service Framework Proposal

Haier, BUPT, Panasonic and LG Electronics

01 December 2014

Motivation

- Control Panel Service Framework
  - Controllee exposes its UI using the framework
  - Controller renders the UI and control the controllee based on UI input by a user
  - Similar to Web Server ↔ Browser concept
  - Very generic and extensible framework !



- But, it has some limitations
  - Control & monitoring is only possible when a user see the controller screen
  - Exposed functionalities for the same type of device may differ by vendors
  - Not easy to accommodate a variety of controller screens with a single control panel UI data (Smart Watch/Phone/Tablet/Laptop and TV, etc)

HAE* Service Framework

* Home Appliances and Entertainment (devices)

Why is it important ?

Purpose

- Develop standard AllJoyn interfaces for controlling and monitoring Home Appliances and Entertainment devices
- On top of this, build creative and innovative IoT services by combining other existing or to be defined AllJoyn service frameworks.
  (Notifications, event/action, smart home service framework, gateway agent service framework, lighting service framework, living scenario, etc)

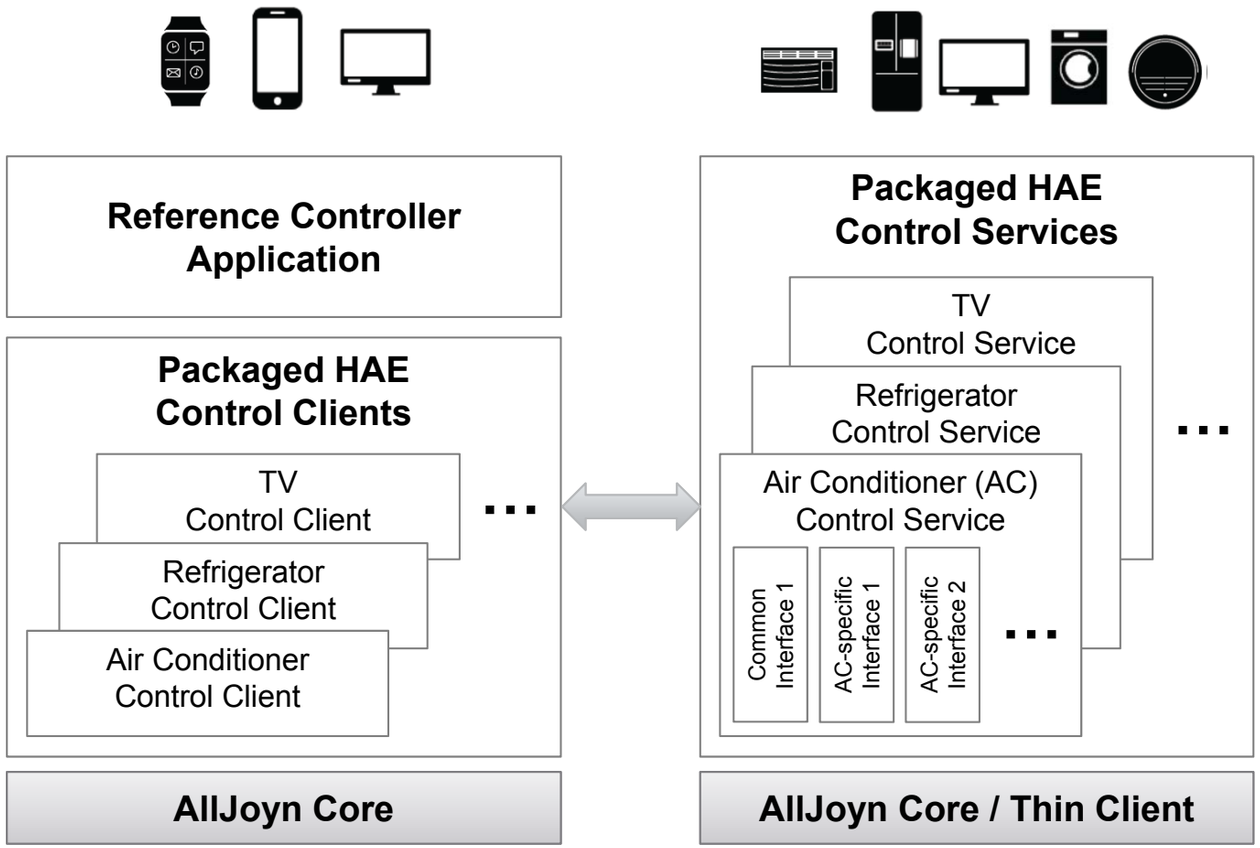
Benefit

- Cross-vendor interoperability
- Background control & monitoring
- Identical user experience across devices from different vendors thanks to the identically exposed device capability
- Tailor-made UI for each controller screen

HAE* Service Framework

* Home Appliances and Entertainment (devices)

Overall Architecture



- One control service / client pair per HAE device
- Provide packaged HAE control services / clients
- For each HAE device, only the corresponding control service will be implemented by using a build option
- For controller applications, controllable devices are up to developers' choice

Scope of Project

- Scope of devices under this project
  - Will be limited to only Home Appliances and Entertainment devices
  - Version 1.0 will include Air Conditioner, Air Cleaner, Air Quality Monitor, Oven, Refrigerator, Robot Vacuum, Washer and TV.
- For each HAE device, a minimum set of common operations and parameters across devices from different vendors will be specified
  - Vendor-specific extensions will be allowed without raising any interoperability issue
- Standard AllJoyn interfaces will be developed for each HAE device
  - Some interfaces can be commonly used for various HAE devices
- The project will deliver a common implementation for HAE service framework into the open source

Dependencies, Project Name, Working Group

- Dependencies
  - AllJoyn Core and Base services such as About interface
- Proposed Project Name
  - Proposed name for the project : “HAE Service Framework”
  - Proposed name for the git repository : “device_services/hae”
- Proposed Working Group
  - For future extensibility, formation of a new working group called “Device Services” is proposed
  - Starting with HAE service framework as an initial project, new categories of devices can be added by proposing new projects under the same working group

Committers and Contributors

- Maintainer
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- Committers
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Initial Contribution & Project Plan

- Initial Contribution
  - Device model for Haier air-related appliances
  - Example AllJoyn interface specifications for LG HAE devices
- Project Plan
  - High-level system description document : December 2014
  - AllJoyn interface specifications : February 2015
  - High-level design (HLD) documents for foundational components : March 2015
  - Foundational component implementations for Linux : June 2015
  - Certification test suite : August 2015
  - Reference controller applications for Android & iOS : September 2015
  - First official release : September 2015

Thank you

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