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ALLIANCE**

HAE Project Progress Update

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Recap of HAE Service Framework

The HAE service framework project develops the common way of controlling and monitoring Home Appliances & Entertainment (HAE) category devices, regardless of device manufacturers.

Why is it important ?

Thanks to the predefined AllJoyn Interfaces for HAE devices, the following benefits will be attained.

- Cross-vendor interoperability
- Background control & monitoring
- Identical user expectation across devices from different vendors
- Tailor-made UI for each controller screen

What will this project deliver ?

Through multi-vendor collaboration, this project will deliver

- Standard AllJoyn interfaces for HAE device models
- Open source implementation including sample controller applications
- Certification test suites

Project Resources and Participants

After project approval by TSC on 12/1/2014, weekly technical meetings are being held with appropriate project resources provided by the Alliance.

Resources

The following resources are being used

- Wiki page :
<https://wiki.allseenalliance.org/hae>
- Mailing list :
allseen-hae@lists.allseenalliance.org
- Weekly technical meeting :
<https://meetings.webex.com/collabs/meetings/join?uuid=M6MHSL0B188XJJX1127J9EM3UB-HIZ3>

Participants

Representing experts from major CE companies are actively participating

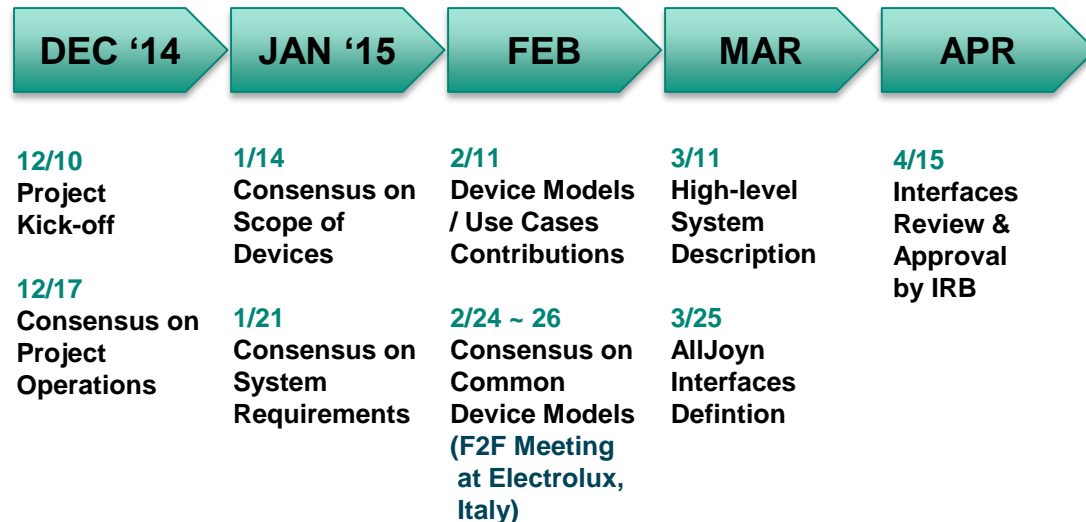
- Electrolux, Haier, LG, Panasonic and Sharp
- From 12/10/2014 project kick-off meeting, 6 technical meetings are held up until now
- 10 ~ 15 industry experts are participating the technical meetings

Where are we today ?

To deliver high-quality standard AllJoyn interfaces definition based on common device models, the industry experts are closely collaborating and working hard...

Short-term Schedules

Agreed target schedules to deliver standard AllJoyn interfaces definition



Updated Milestones

Based on the recent progress ...

Milestone	Original	Update
High-level system description document	Dec. 2014	Mar. 2015
AllJoyn interface specifications	Feb. 2015	Apr. 2015
High-level design (HLD) documents	Mar. 2015	May. 2015
Foundational component implementations for Linux	Jun.2015	Jul. 2015
Certification test suite	Aug. 2015	Sep. 2015
Reference controller applications for Android & iOS	Sep. 2015	Oct. 2015
First official release	Sep. 2015	Oct. 2015

System Requirements

1. The HAE Service Framework should define interfaces that represent atomic HAE devices and a mechanism to combine those interfaces to build a complex HAE device.
2. The HAE Service Framework should provide a version control mechanism that ensures both backward and forward compatibility. Any extension and/or change in the future should be considered under conditions that S/W of shipped devices can't be updated any more due to various reasons.
3. The HAE Service Framework should allow vendor-specific extensions without causing any interoperability issue of the framework compliant devices.
4. The HAE Service Framework should allow optional functionality or parameters.
5. The HAE Service Framework should not define any regional functionality which is not globally available as mandatory features.
6. The HAE Service Framework should provide detailed descriptions of system behavior under various conditions or usage scenarios such as controlling, monitoring and information reporting, etc .
7. The functional or semantic overlap between different interfaces should be avoided as much as possible.
8. The HAE Service Framework should provide error handling mechanism and that mechanism should include an error code to invalidate a request. Properties, methods, and signals defined in the HAE Service Framework should be valid as long as each manufacturer believes validating such properties, methods, and/or signals doesn't cause users' bodily injury or property loss.
9. The HAE Service Framework should provide descriptions of their interfaces as accurately as possible.

Scope of Devices (1/2)

Scope of devices to be considered for version 1.0 interfaces definition

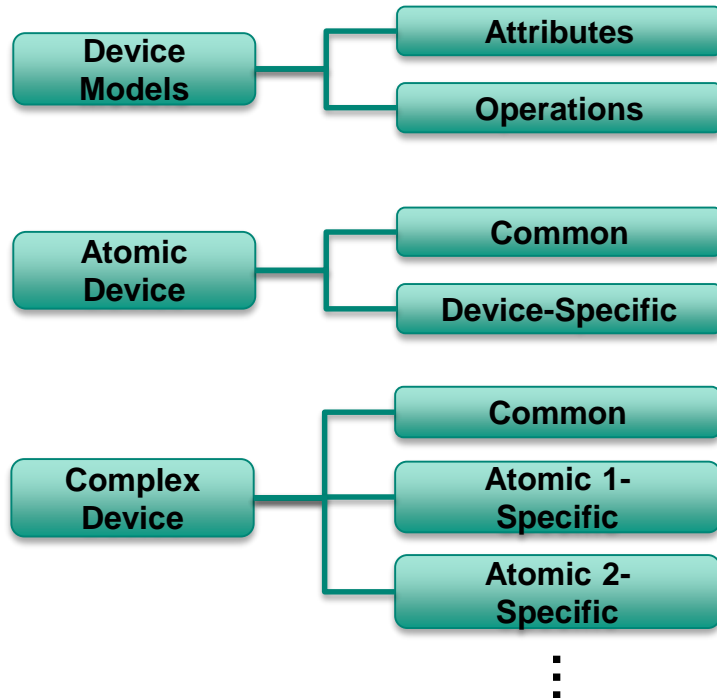
Category	Device	Description
Air-related Appliances	Air Cleaner (Air Purifier)	Home appliances which have a filter that removes dust from the air.
	Air Conditioner	Home appliance used to alter the properties of air (primarily temperature and humidity) to more comfortable conditions
	Air Humidifier	Usually with air purifying capability.
	Air Quality Monitor	Home appliances that is used to check the air quality.
	Formaldehyde Detector	Home appliances that is used to detect Formaldehyde.
	Electric Fan	Traditional style fan usually with blades visible from outside.
Cooking Appliances	Cooker Hood	Home appliance that usually hangs above the stove or cooktop and it is used to removes airborne grease, combustion products, fumes, smoke, odors, heat, and steam from the air by evacuation of the air and filtration
	Cooktop	Home appliance with a flat framework used to place pots to be heated, so the food inside is cooked
	Microwave Oven	Particular type of Oven which food is cooked or heated quickly by very short waves of electromagnetic energy
	Steam Oven	Cooks with superheated steam.
	Oven	Home appliance used to roast and heat food in a complete stove

Scope of Devices (2/2)

Category	Device	Description
Refrigerators	Fridge	Home appliance used to store food at temperatures which are a few degrees above the freezing point of water
	Refrigerator	Home appliance composed by a Fridge, a Freezer and eventually other auxiliary compartment like Ice Maker
	Freezer	Home appliance used to store food at temperatures which are a few degrees below the freezing point of water (typically about -18 °C), so the food itself is safe indefinitely
	Ice Maker	Home appliance used to make ice
Washing Machines	Washer	Home appliance used to wash laundry, such as clothing and sheets
	Washer Dryer	Home appliance able to execute the operations of both Washing Machine and Tumble Dryer in a single cavity
	Tumble Dryer	Home appliance used to remove moisture from a load of clothing and other textiles, usually shortly after they are washed in a Washing Machine
	Dish Washer	Home appliance used to clean dishes and eating utensils
Vacuum Cleaners	Robot Cleaner	An autonomous robotic vacuum cleaner that has intelligent programming and a limited vacuum cleaning system
Entertainment Devices	TV	A smart TV device is a television set with integrated Internet capabilities that offers more advanced computing ability and connectivity.

Device Model General Structure

AllJoyn syntax independent device models will be developed first to help identify common/reusable features across device types and separate optional features from mandatory ones. Atomic HAE devices will be redefined based on the scope of devices and members' device models contributions.



Attributes

Type	Attribute Name	Data Type	Value (unit & step included)	Notificable	Writable	Mandatory ¹⁾	Description

Operations

Type	Operation Name	List of Parameters	Mandatory ¹⁾	Description

1) Mandatory and Optional features (attributes, operations) will be split into separate AllJoyn interfaces.

Help Requested



- We'd like to ask IRB¹⁾'s technical assistance and timely review from the very beginning of AllJoyn Interfaces definition to speed up our work progress.
- We'd like to better understand DDAPI²⁾ because
 - HAE project is all about standardizing common HAE device models across vendors and
 - the extension of common device models should be done in a systematic and consistent way in the future.
 - DDAPI WG's technical consultation will be very helpful for us to know pros and cons of using DDAPI concept in HAE project.
- Early guidelines about designing AllJoyn interfaces with Security 2.0 feature,
 - Will be greatly appreciated since security is one of the most important topic we should consider.

1) Interface Review Board

2) Data-Driven API



Thank you

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