



**ALLSEEN
ALLIANCE**

Technical Steering Meeting

October 13, 2015



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Reminder:

**This call is being
recorded**

- 
1. Approve minutes from previous meeting
 2. HACKSTER
 3. SIP End2End Connector project proposal
 4. Summit talking points



Hackster

HACKSTER IS A COMMUNITY DEDICATED FOR LEARNING HARDWARE.

Community

- 61% professional SW & HW developers
- 37% North American
- 25% Western European
- 20% Asia Pacific
- Average age: 35
- 50,000 users by end of year

Services

- Platform hubs
- Design contests
- Live hackathons
- Tutorials creation
- Beta testing

hackster.io

Community Hubs

ABOUT MICROSOFT
Windows 10 IoT Core is a low-cost, small-footprint devices that will be available "free" for Makers and commercial device builders.

Documentation Forums Download Windows 10 IoT Core

JOIN THE COMMUNITY 1029

PROJECTS BUILT BY THE COMMUNITY 25

Robot Kit by Windows IoT 22,736 VIEWS 16 COMMENTS 109 RESPECTS

Windows Remote Arduino by Windows IoT 21,512 VIEWS 40 COMMENTS 70 RESPECTS

Hands-on-lab IoT Weather Station using Windows 10 by Windows IoT 25,278 VIEWS 28 COMMENTS 62 RESPECTS

"Facebook" for Hardware

PRODUCTS MADE BY TESSEL

Tessel
Write JavaScript, connect hardware to the internet. Learn more at [tessel.io](#).
Buy it Official page Documentation Libraries Datasheet
I own it! 96 projects

Camera Module
Add the sense of sight to Tessel. Supports 640x480, 320x240, and 160x120 Still image camera.
Buy it Documentation Libraries Datasheet
I own it! 15 projects

Accelerometer Module
The Accelerometer Module can detect orientation and movement of your Tessel by measuring gravity / acceleration. It features 3-Axis digital accelerometer, 12-bit resolution, and selectable ±2g/±4g/±8g scales. This module features the MMA8452Q chip for sensing.
Uses: MMA8452Q (Freescale)
Buy it Documentation Libraries Datasheet
I own it! 11 projects

Ambient Module
The Ambient sensor can detect sound and visible light levels. The microphone is optimized for detecting ambient noise level in a room or building a sound-activated device. The ambient light sensor can be used for detecting fine-grain brightness in a room.
Buy it Documentation Libraries Datasheet
I own it! 11 projects

Climate Module
The Climate Module can detect relative humidity and temperature from your environment. It is able to measure 0 to 70 °C (32 to 160 °F) with ±1° accuracy and measure 0% to 80% relative humidity. It uses the S7005 chip.
Buy it Documentation Libraries Datasheet
I own it! 11 projects

Learn by Replication



Design Contests

Win \$100 to Maker Faire and SparkFun gift certificates!
Sponsored by Microsoft

This contest is over! Want more chances to win prizes? Check out our active contests.

Winning entries

Personal Home Safety Agent by Philippe Liseul 11 VIEWS 0 COMMENTS 41 RESPECTS

Home Automation using Raspberry Pi 2 and Windows 10 IoT by Arunesh S. Vasavada 224 VIEWS 4 COMMENTS 35 RESPECTS

CK Home Automation by Christian Kratky 200 VIEWS 7 COMMENTS 46 RESPECTS

Embedded Communities

TESSEL

Start Docs Modules Projects

TESSEL 2

BUILD YOUR PRODUCT FASTER.
Tessel 2 is a development platform you can embed in a product. By Node.js/io.js, then optimize the hardware and build thousands.

PRE-ORDER FOR \$35
Ships in August

Can't wait? Get a Tessel 1 and start building right away!

My Toolkit

Fill up your toolbox by selecting components, apps and tools you own or are using

Search: Done I'll do it later

Raspberry Pi Model B

Arduino Uno R3

Microsoft Windows 10 IoT Core

Arduino IDE

Raspberry Pi Model B+

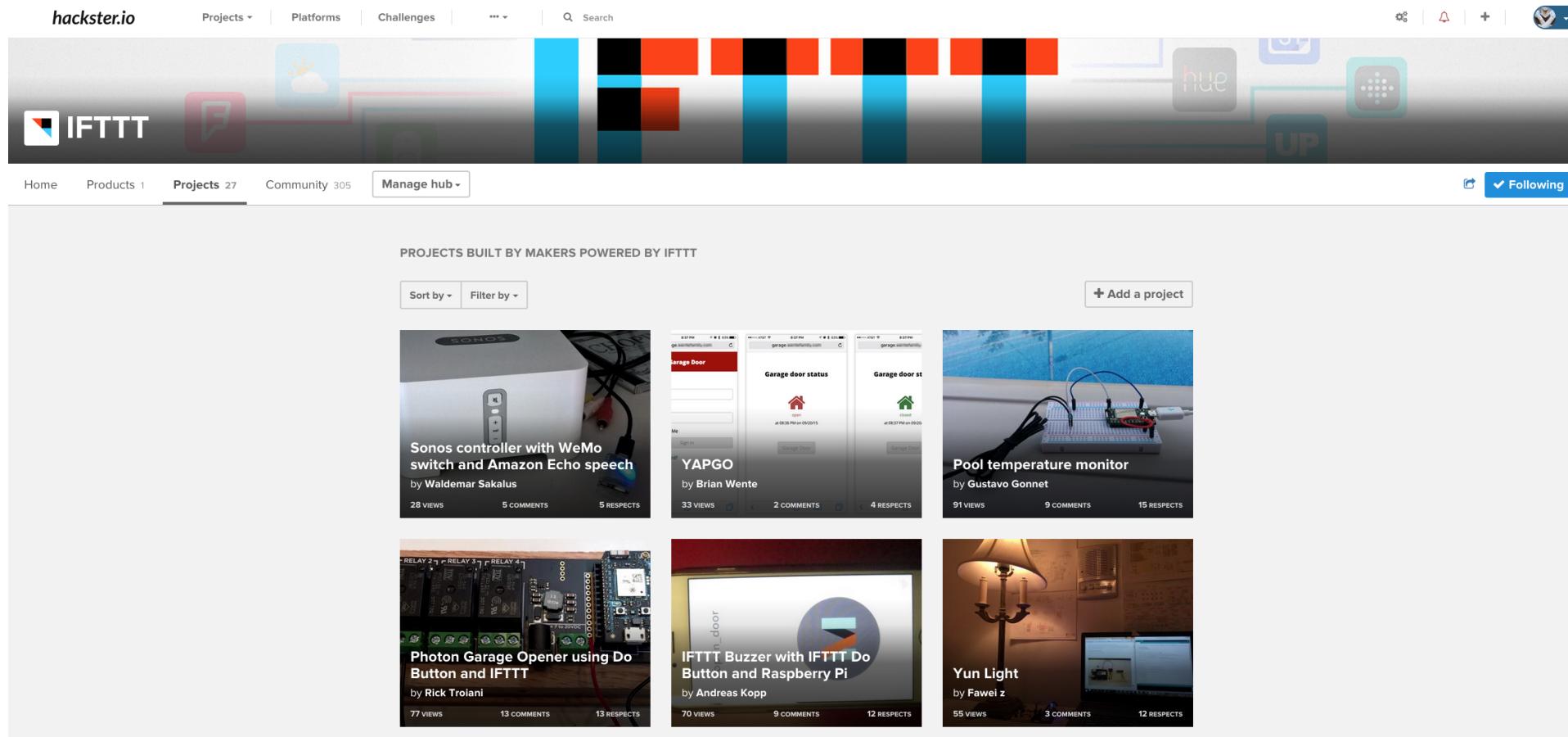
Breadboard (generic)

LED (generic)

Particle Photon

Jumper wires (generic)

Build A Community of Brand Evangelists



Generate Reference Designs: Learning by Doing

Windows 10 + Raspberry Pi 2 + Arduino = Awesome Home Automation using Raspberry Pi 2 and Windows 10 IoT Core

Automated Home using Raspberry Pi 2 (Windows 10 IoT Core) and Arduino.

arduino display embedded geyser home automation iot lights microsoft raspberry pi raspberry pi 2 relay water-pump windows 10

786 VIEWS 19 COMMENTS 60 RESPECTS 3 REPLICATIONS

ABOUT THIS PROJECT

In today's era, technology can enhance human life. Technology is evolving decade by decade. Automation was a science fiction earlier but not today. By combining latest technology with home, we can build an awesome home. With the Raspberry Pi and Windows 10, we can build a home automation system that is capable of operating home devices automatically.

Getting Started

Before starting the project, lets understand basics first. Consider the following image (Overall Configuration)

A Raspberry Pi 2 will serve as a master device. For each room, want to automate, an Arduino Uno is needed. Arduino UNO will act as a secondary controller, which takes command from the Raspberry Pi 2 and operates specific device. Here, Raspberry Pi 2 and all Arduino UNOs are connected together on a I2C bus. All Arduino UNOs act as slaves. Each Arduino UNO have unique I2C slave address on the bus. You can add /remove Arduino UNOs(rooms) that is explained later in this project.

Overall Configuration

Checklist: 100% complete

Manage this Project

Author: Anurag S. Vasanwala (5 projects, 31 followers)

Follow Contact

Additional Contributors

- Attic image by Luke Patrick
- Basement image by Juan Pablo Bravo
- Bell image by Till Teenck
- Clock image by Sergey Demushkin
- Closet image by Boudewijn Mijnlieff
- Electric shock warning image by Ervin Bolt
- Eye image by Abe Garcia Eye Image
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- Tv image by Rhys de Dezsey
- Vase image by Jule Steffen & Matthias Schmidt
- Water drop image by Martí Turró Ortega
- Water drop image by Edward Boatman
- Window image by Creative Stall

Communities this project is part of

- Arduino Following
- Home automation Following
- Home Automation Follow
- Microsoft Following
- Raspberry Pi Following

Encourage and Reward Active Participation

The screenshot shows the AWS IoT Mega Contest landing page. At the top, it says "The AWS IoT Mega Contest!" and "Sponsored by Amazon Web Services". Below this, there's a "CONTEST BRIEF" section featuring an image of an AWS IoT button with the "reInvent" logo. The brief text explains that AWS has announced AWS IoT, a new service that connects devices easily and securely with the AWS cloud. It encourages users to submit ideas for what they can do with AWS IoT. A "Let's Get Started!" section lists steps: submit an idea, allow up to 48 hours for approval, submit a buildable project using the AWS IoT button or approved hardware, and announce 10 winners by January 8, 2016. A "Step 1: Pick Your Hardware:" section shows the "Category 1: AWS IoT Button" selected. To the right, there's a "CHALLENGE STATUS" section asking to mark the challenge as 'ready to launch' when ready. The "PRIZES" section shows the first prize as a Fire HD 10 tablet and the second prize as an Amazon Echo.

CHALLENGE STATUS

Please mark the challenge as 'ready to launch' when ready.

PRIZES

FIRST PRIZE

Fire HD 10, 10.1" HD Display, Wi-Fi, 16 GB
\$239 value - 2 available

SECOND PRIZE

Amazon Echo
\$179 value - 3 available

ABOUT ALLJOYN

A collaborative OSS framework making it easy to write applications that can discover, and communicate directly with, nearby devices regardless of platform.

[Documentation](#) [Forums](#) [Get started with AllJoyn!](#)



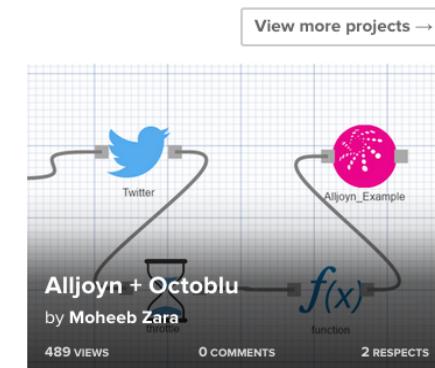
ALLJOYN PRODUCTS 1



JOIN THE COMMUNITY 8

[Follow AllJoyn](#)

PROJECTS BUILT BY THE COMMUNITY 3

[View more projects →](#)

Integrate a rebranded Hackster community page into AllSeen

The new community hub for learning, contributing for individuals and startups/company showcase

Generate new designs through a contest

Use output in newsletters, social media, case studies

Continue to work with our hardware partners for further integration and evangelism



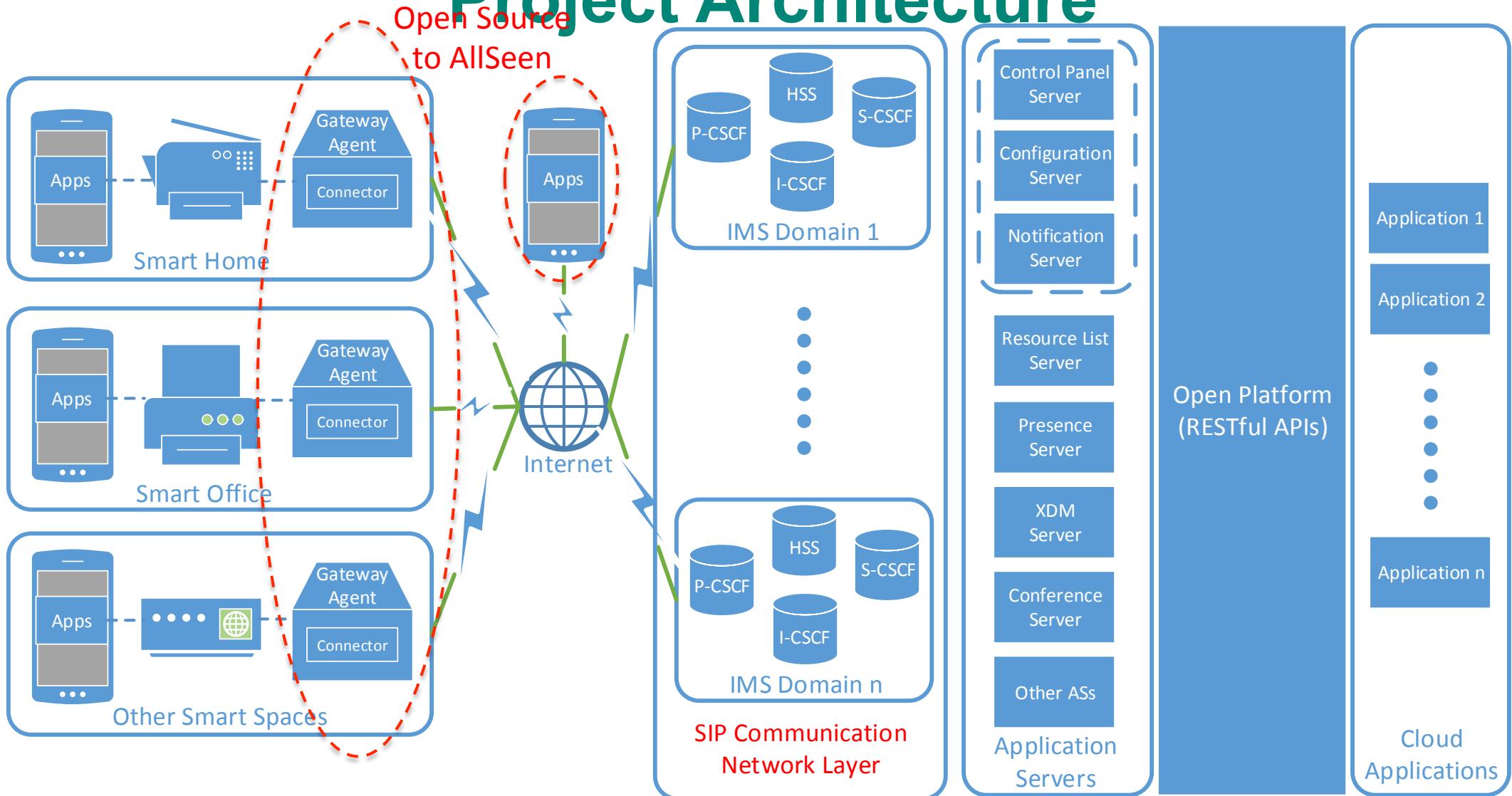
AllJoyn SIP End2End Connector Project Proposal

Yongheng Luo (CEO), Wei Ren (CTO)
SmartConn - Beijing HengShengDongYang Tech. Co.

AllJoyn SIP End2End Connector Project Proposal

- Objectives:
 - Establish a standard End2End mechanism for secure interoperability and interconnections among devices, applications, and cloud services.
 - Provide a fine-tuned session control layer which benefits service providers in terms of operation and maintenance.
 - Provide a standard way to scale both horizontally (unlimited access capabilities) and vertically (open platform for 3rd party cloud applications).
 - Enable AllJoyn devices/applications to connect to existing telecom networks like 3G/4G and even future 5G core networks and to interoperate with devices/applications in telecom networks.
- Based on the standard telecom protocol SIP (Session Initiation Protocol), we introduce a standard carrier-grade network layer called “SIP Communication Network Layer”.
- The SIP Communication Network Layer is composed of different IMS domains. The SIP End2End Connector is registered in one domain and can be accessible from other Connectors.

Project Architecture



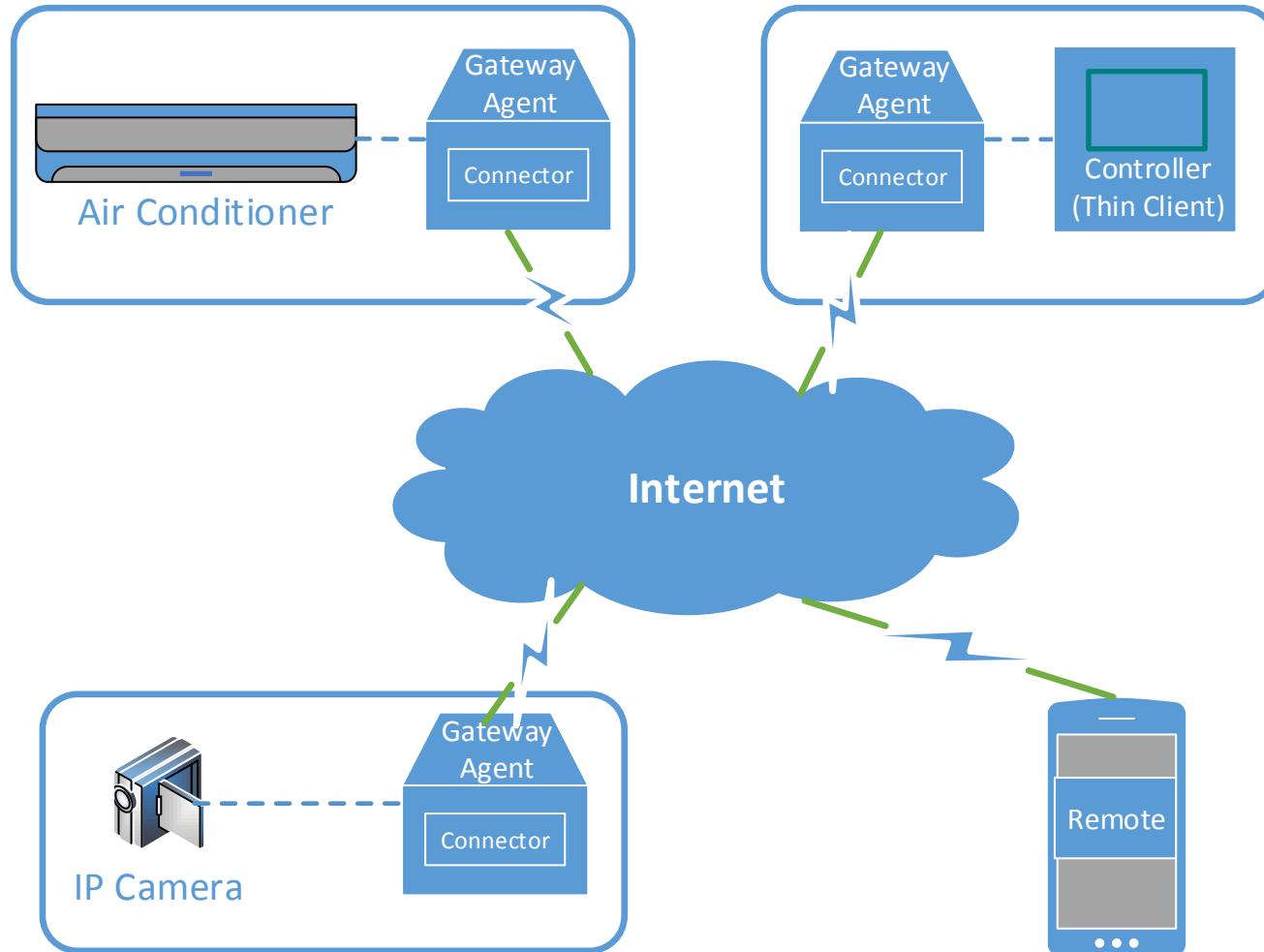
SIP Connector – How to Work

- AllJoyn to SIP
 - Encapsulate all AllJoyn messages in SIP MESSAGE messages, and no media sessions required
 - NAT traversal without STUN or ICE
- Long connection
 - Every SIP Connector has one single SIP account (with address like sip:lyh@nane.cn, or <tel:+8613911331297>). Upon startup, the account will be registered with its home domain and keep in touch with cloud based upon SIP register mechanism (RFC3261)
- Extend About Service to cloud
 - PUBLISH advertised interfaces within About Service to IMS Presence Server, which in turn NOTIFY all subscribers of latest information of published interfaces

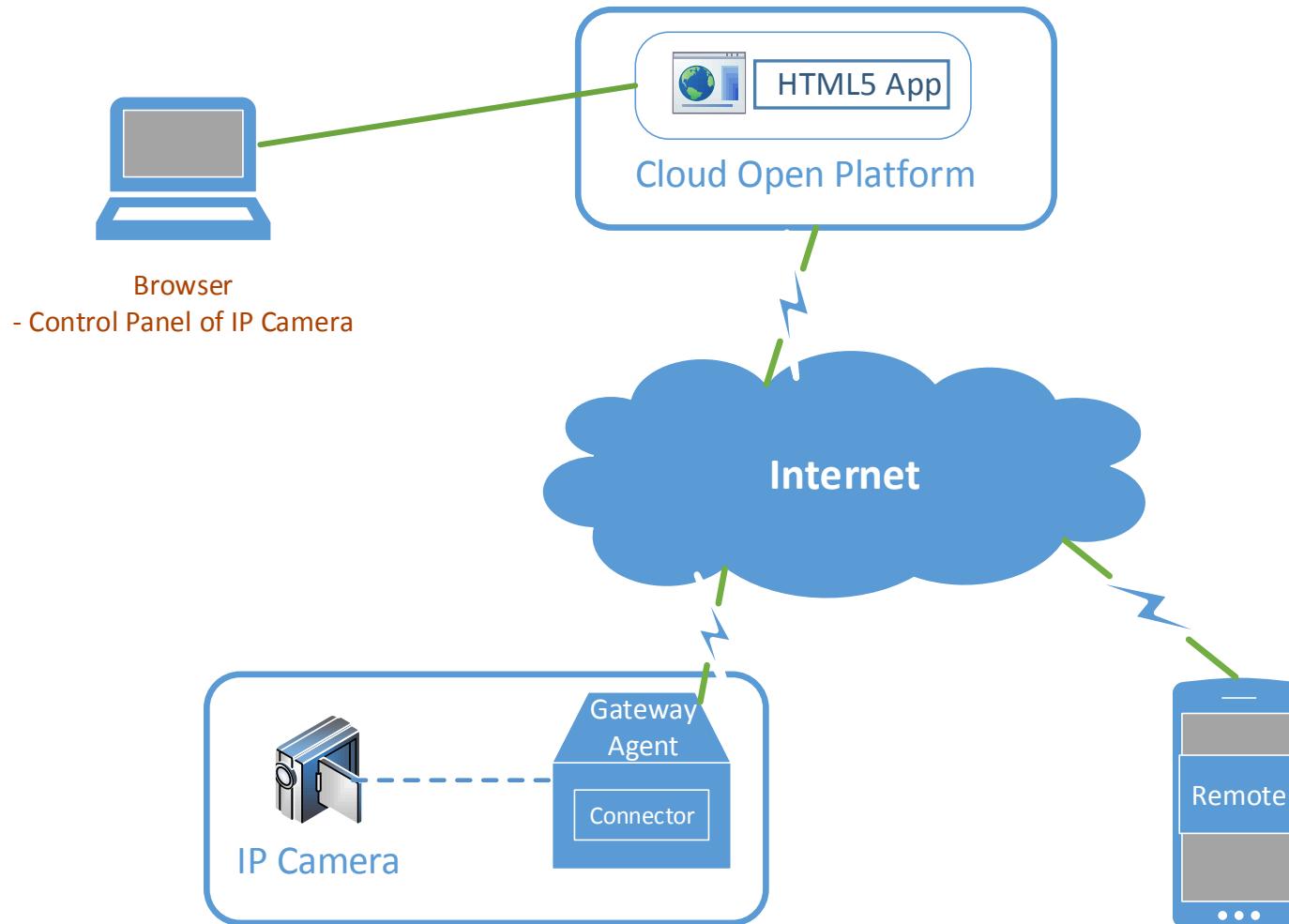
End to End Interoperations Transparently

- Devices to Devices Across WANs
 - Map of one device's services/interfaces to far-end network
 - Based on presence mechanisms of IMS network, services/interfaces/status can be published to cloud, and any Gateway Agent that subscribes to it can be notified of latest information of services/interfaces/status
 - For device apps developers, accessing far-end devices' interfaces is the same as accessing local proximal devices' interfaces, which we call '**Transparent Interoperations Across WANs**'
 - Carrier grade security guarantee
- Devices to Cloud Apps
 - Map of devices' services/interfaces to cloud, and vice versa
 - Mashup of internet services with AllJoyn enabled services/interfaces

Application Example 1 – devices to devices across WANs



Application Example 2 – devices to cloud app



Features and Benefits

- Features
 - End2End interoperations in a standard way.
 - 3rd party applications/extensions.
 - Presence/Notification/Messages/QoS support out of box.
- Benefits
 - Help manufacturers to extend their services to cloud very easily and quickly.
 - Help developers to deploy and test their services very easily and quickly.
 - Enable integrators only to focus on ideas of how to mush up different smart devices and applications, and to focus on marketing strategies, without worrying about implementation details.

Proposal Information

- Working Group: Gateway Working Group
- Staff - from Beijing HengShengDongYang Tech. Co.
 - Maintainer: Wei Ren
 - Committers: Wei Ren, Yongheng Luo, Nan Wang
- Dependencies:
 - Gateway Agent 14.12 (and 15.09 when available), AllJoyn Core 14.12 and newer
- Supported platforms:
 - Raspberry Pi 2, Windows 10, OpenWRT, Ubuntu 14.04, Android, iOS
- GIT repository “ajsipe2e”, Mail list: share Gateway Working Group mail list.
- Development Plan
 - First commit will be one month after the approval of the project. First release is planned to be in March 2016.
- We ask support from the TSC for approval of this project.

External Library Dependencies

Dependency	Description	License	URL
LIBXML2	XML C parser and toolkit	MIT License	http://www.xmlsoft.org
BOOST	C++ libraries	Boost Software License	http://www.boost.org



Summit talking points

TSC face-to-face at the Summit

- What is working what is not
- How to boost collaboration
- Where are the bottlenecks
- Process improvements
- Technical vision for next year
- What else?



Thank You

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