

Better Life with Smart media & things



Innopia Technologies Inc.



As an expert company in developing smart platforms based on convergence of broadcasting and telecommunications, we focus developing and commercializing future convergence platforms that will lead the smart world through development of embedded SW based convergence solutions in broadcasting, network and mobile device.

| Overview | |
|------------------|---|
| Item | Content |
| Foundation | March 24, 2000 |
| No. of Employees | 130 - 85 SW Engineers, 10 HW Engineers |
| Customer | Samsung Electronics, CJ Hellovision, LG U Plus, Hyundai HCN |
| Location | Gyeonggi-do, Korea |

| Business Area | |
|---|--|
| Business | Solution |
| Embedded SW Platform Development | <ul style="list-style-type: none"> Linux/Android based embedded SW platform development for smart devices Embedded SW platform development for Home Gateway, network devices |
| Smart Media Product | <ul style="list-style-type: none"> Smart OTT/Set top box Hybrid Smart set top box Multi-room Home Media Gateway Smart Media and IoT GW stick device |

Global partnership in SW-SoC convergence and solution



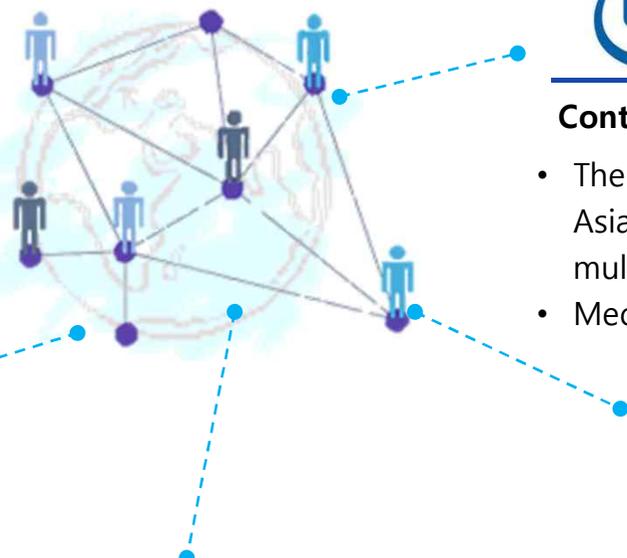
Our partner in SW development

- Strategic development partner (since 2000)
- Advanced development of various media products including smartphones, smart TVs and STB, DMC R&D center and Advanced Institute of Technology



Wi-Fi and IoT solution collaboration

- Collaborates in development of the High-end media processor
- Atheros Wi-Fi Chip based collaboration including Wi-Fi, Wi-Fi Direct and 802.11ac
- Solution development including AllJoyn and Vuforia



Contracted as their design house

- The first design house contracted in Asia Pacific(Running royalty for multimedia SoC)
- Media platforms, Gateway SoC base



IoT service collaboration

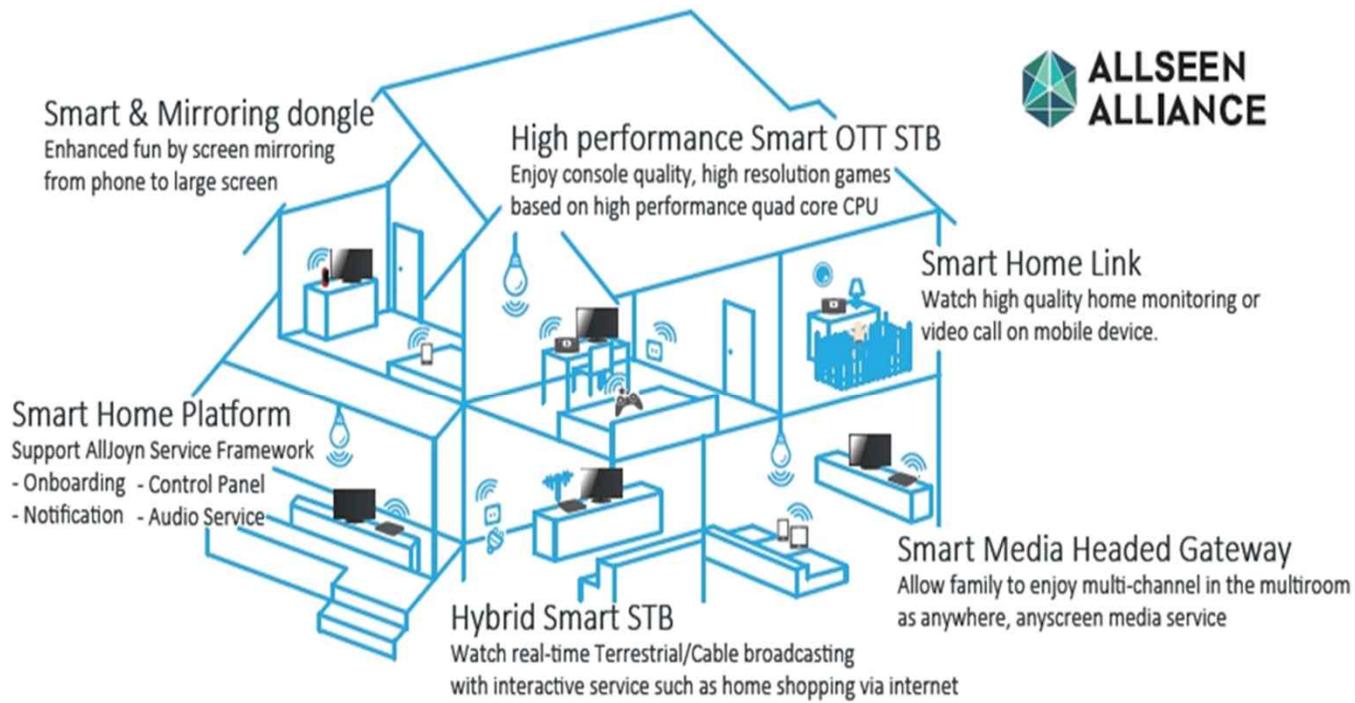
- Universal App development collaboration
- AllJoyn service scenario creation for Window 10 devices

Contracted as their design house

- Gateway platforms development partnership
- 4K UHD, HEVC multi-room media gateway reference platform

Advanced Smart Home Media Solution

- Innopia delivers all new advanced smart home media solution and products for the media & IoT service distribution over wireless home network upon much experienced in broadcasting, network service.

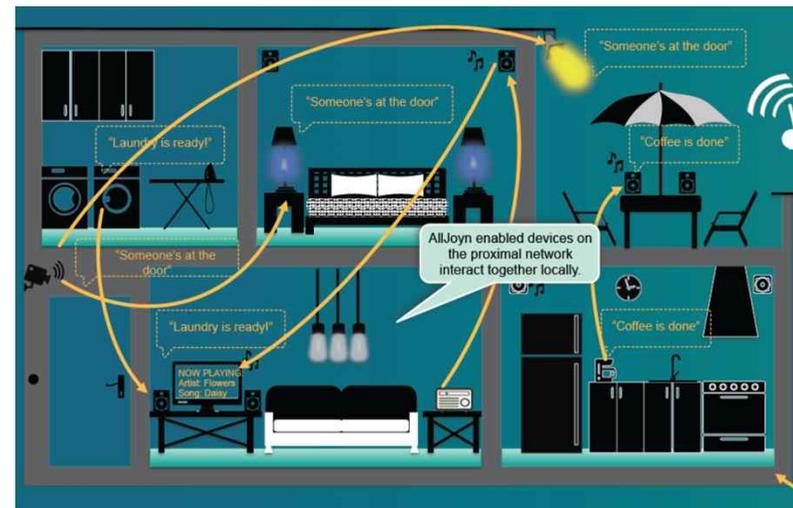


Always be connected to Innopia

AllJoyn IoT Platform

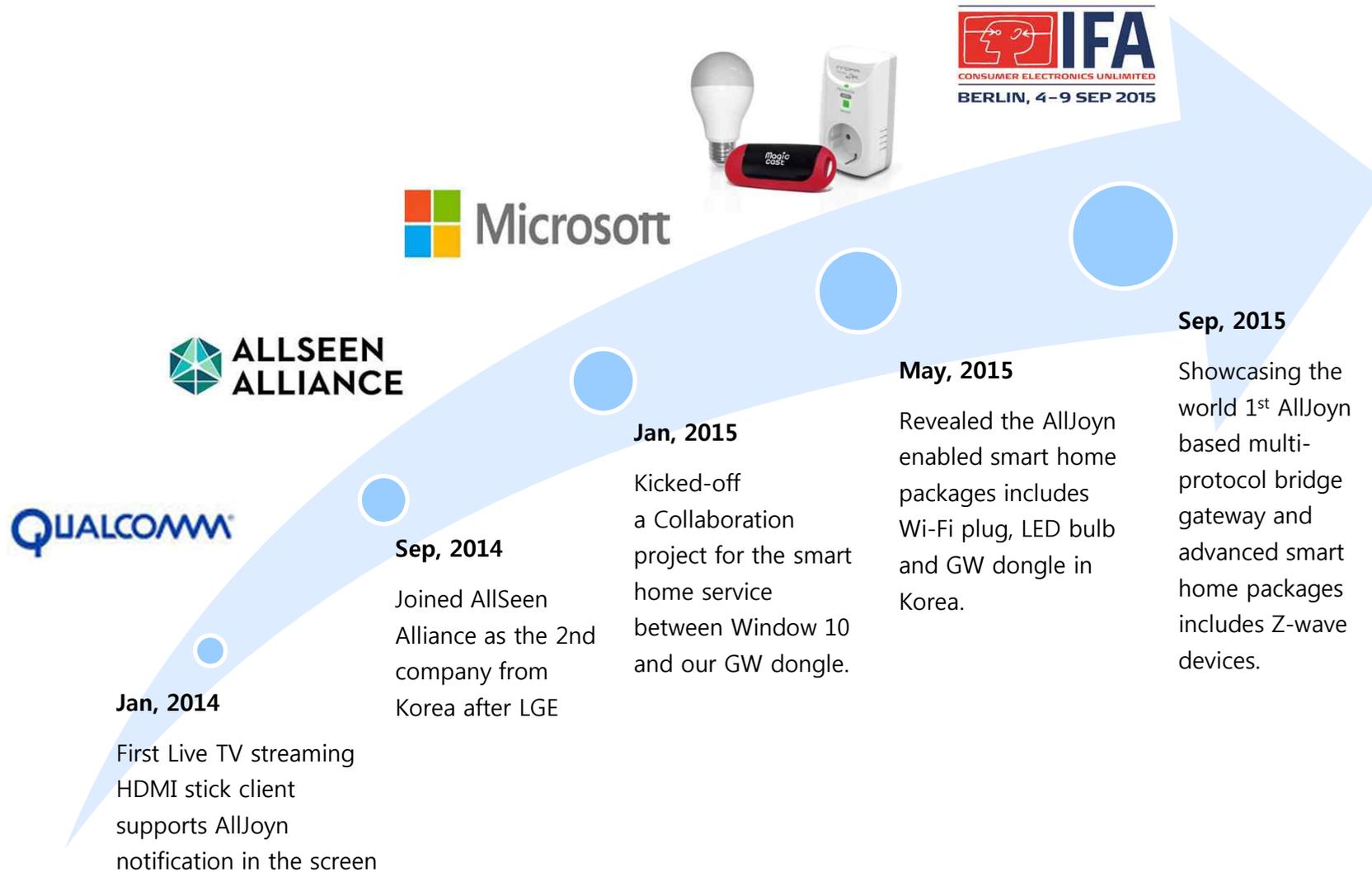
- With over 190 members from the globe, the largest open IoT consortium, AllSeen Alliance and Innopia provides AllJoyn enabled Smart Home Solution to anyone and to anywhere.
- Innopia delivers all new Smart Home Starter Package with integration of smart media service based on AllJoyn protocol for the communication between home appliances and other home devices.

ALLSEEN ALLIANCE +190 Members



- ✓ Notification
- ✓ On Boarding
- ✓ Control Panel
- ✓ Lighting Service Framework
- ✓ Gateway Agent to be supported

Activities based on AllJoyn Framework



AllJoyn enabled product roadmap

1. AllJoyn notification enabled
Smart TV enablement stick



3. AllJoyn notification, control panel enabled
wireless TV streaming projector



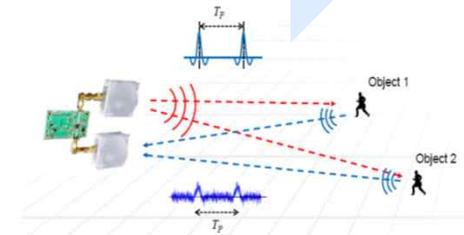
5. AllJoyn support Wi-Fi
Smart radar tracer for the multiple movement and presence monitoring



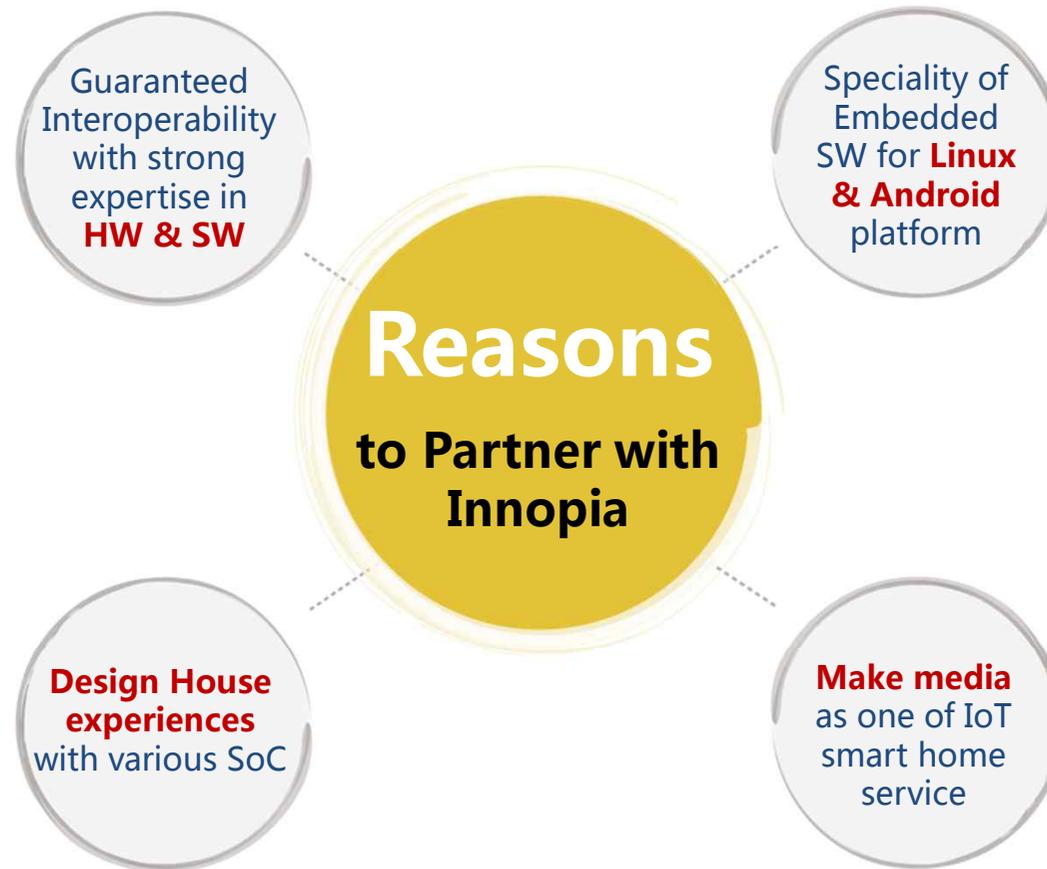
2. **Smart home package** including Wi-Fi power plug, Wi-Fi LED bulb and GW stick based on AllJoyn framework for home automation, energy management with media entertainment



4. **Multi-protocol support smart media GW** based on own AllJoyn bridge system for AllJoyn control panel

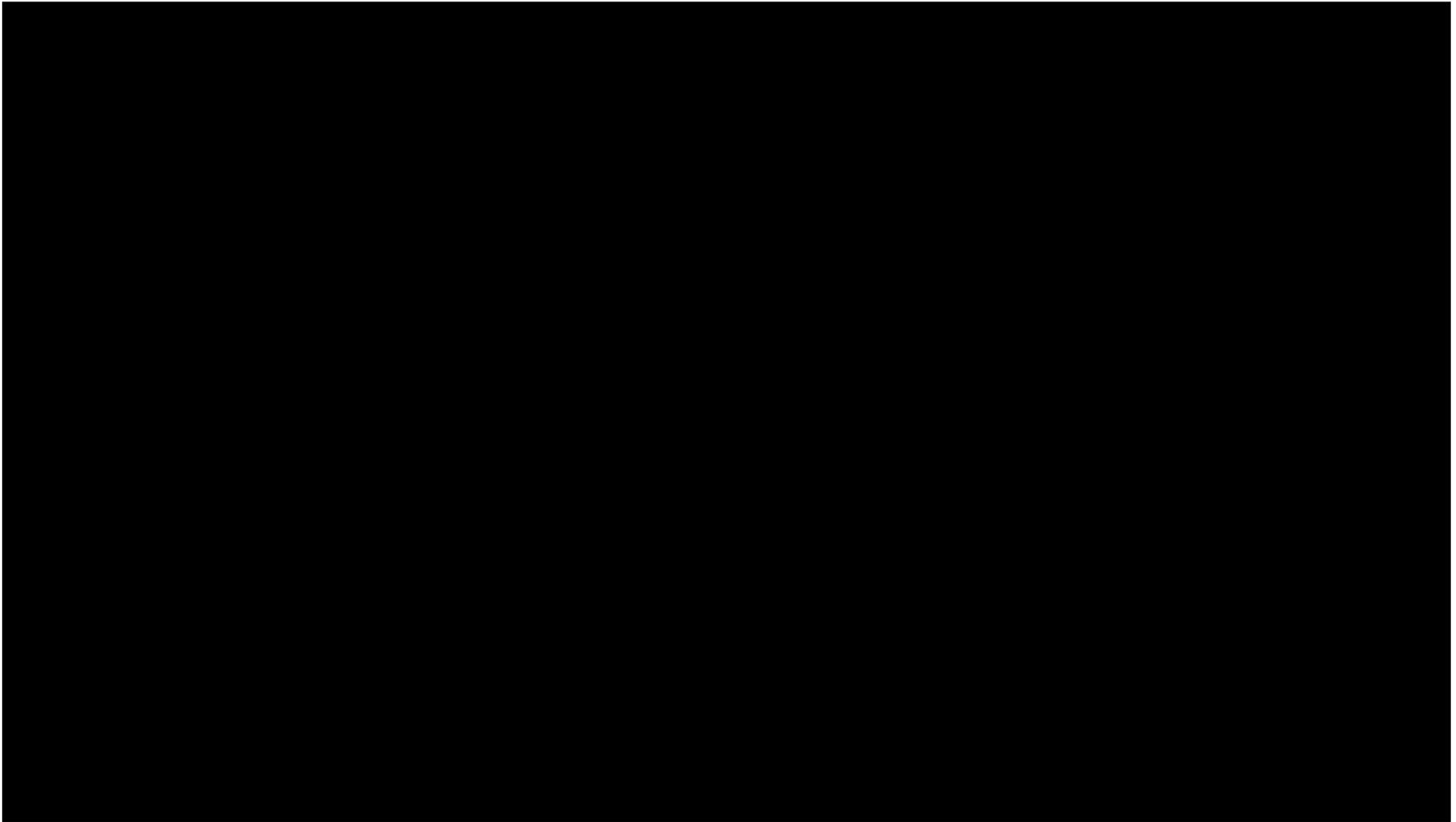


Why Innopia for IoT Solution?



Introduction to Smart Media Gateway based on Open IoT platform

Smart Home Package : MagicHome



Smart TV Enablement Stick “MagicCast”

- MagicCast is a device designed to insert to a HDMI port of a TV set or a monitor, for the use to enjoy such diverse contents as videos, photos, and music in his/her mobile phone on the large screen, any normal TV or monitor which is incapable to connect to the Internet and turn it like a smart TV.

Connected Service over Wi-Fi



- According to growing demand for connected service, MagicCast can provide smart media service which a normal TV or monitor didn't provide before.



Smart Media Services

| Service | Function |
|--------------|--|
| Happy Memory | From anywhere realtime Live broadcasting from smartphone to TV screen via MagicCast over the mobile network. |
| Video Clip | Search videos from YouTube with smartphone and watch the video on a large TV screen. |
| Cloud Play | Function to watch the large capacity of videos anytime, anywhere by streaming video from the cloud storage over Wi-Fi. |
| Slide Show | Function to play photos and videos in a slide show on TV repeatedly, which were transmitted and stored in the internal storage of MasicCast, after created and edited in the smartphone. |
| Mirroring | Miracast sink (Compatible with Android, Win 8.1) |
| Phone to TV | Watch a video and listen to music stored in the smartphone on a large screen by DLNA. |

Smart Home IoT Gateway

- The world first AllSeen Alliance compatible HDMI stick gateway for the smart home IoT service supports AllJoyn service framework including notification, control panel and onboarding
- The smart home package based on Wi-Fi is made up with a power plug, a LED light bulb and a HDMI gateway
- The package enables users to create an event & action scenario such as Welcome, Audio streaming, Going out, Good night, etc (<https://allseenalliance.org/showcase>)



Notification Display on TV (On/Off & Power Metering)



Notification from other AllJoyn devices



ENERGY MANAGEMENT



ENTERTAINMENT MULTIMEDIA



AUTOMATION COMFORT



Smart Power Plug

HDMI stick GW

Smart LED light bulb



Why Smart Media Gateway for IoT Service?

1

Interactive media consumption with IoT devices

2

More effective information on TV interface

3

Always connected gateway at living room

Smart Home Starter Package

- The package includes: 1x MagicCast HDMI gateway (GW) stick, 1x Smart Power Plug and 1x Smart LED Light Bulb.
- The package contents are composed as to meet the basic need of end users.
- With high daily usage, Smart Power Plug and Smart LED Bulb are included together with MagicCast HDMI GW stick.
- All of the devices can be easily installed and used with Home Wi-Fi network.

**Wi-Fi Smart LED
Light Bulb**

**MagicCast
- AllJoyn Gateway**

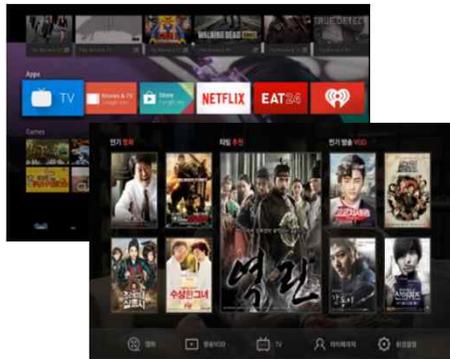
**Wi-Fi Smart Power
Plug**



<Smart Home Starter Package>

Multimedia integrated Smart Home

- The most differentiated element of Innopia's Smart Home Starter Package is its target application.
- Others mainly target for Home Security or Home Energy Saving application whereas Innopia focuses on integration between smart media on to the Smart Home Solution.
- Various ideas can be expanded as adoptive configuration will be available while playing different media services.
- Media service and Smart LED Light Bulb can be synchronized – Similar to Syfy sync with Philips Hue Bulb.



<IPTV Service>



<Mirroring, DLNA>



<Media & Light Bulb Syncing>



Smart Media Service Use Case

1

Interactive game with LED bulb

2

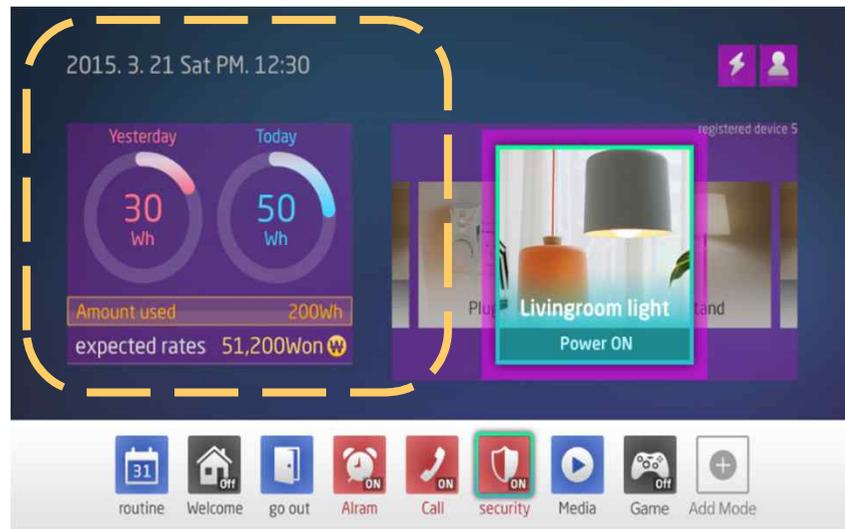
Home theater experience from media mode

Smart Media Service

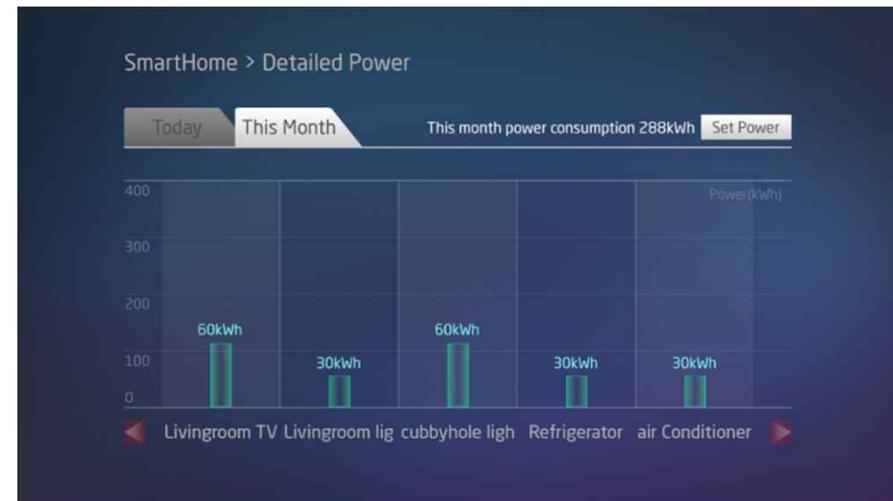


Home Energy Monitoring

- Intuitive Home Energy Monitoring is available through TV user interface provided by Smart Home Service in MagicCast HDMI GW stick.
- More detailed energy consumption can be monitored and automated energy saving can be delivered by setting desired electricity consumption.
- 6 outlet smart power strip will be supported which users can monitor energy consumption in broad way.



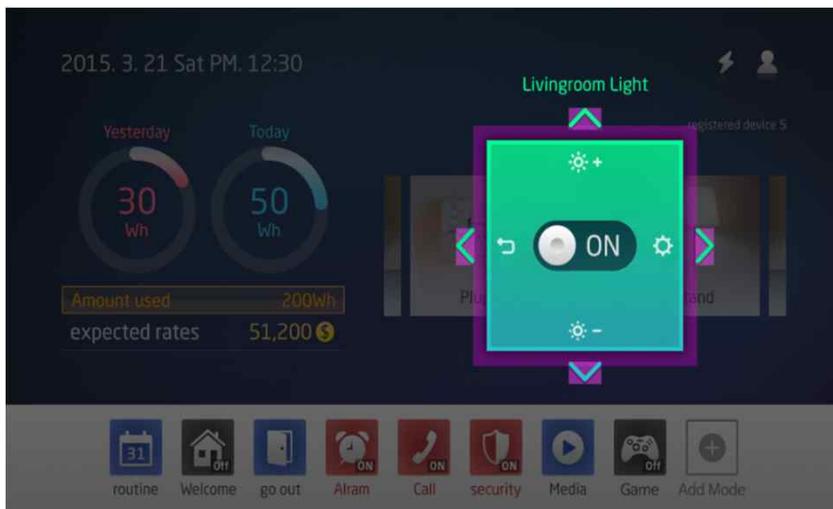
<Power consumption monitoring>



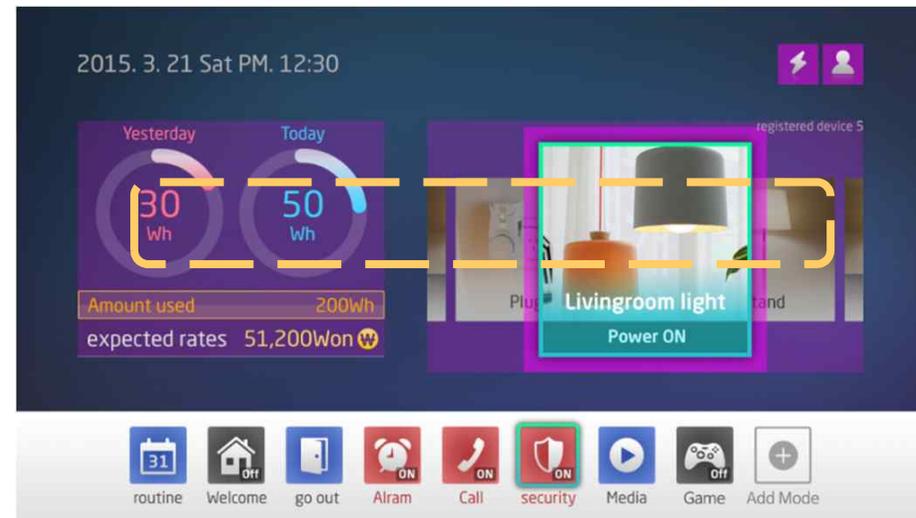
<Daily, Monthly power usage per device >

Home Automation

- Individual control over devices is enabled with TV user interface from MagicCast HDMI GW stick. It may also be controlled through smart remote control app on smartphone.
- Group automated operation can be done with various pre configured modes or user customizable modes.
- Device name and icon can be configured through device setting section with TV user interface.



<Individual device control by phone>

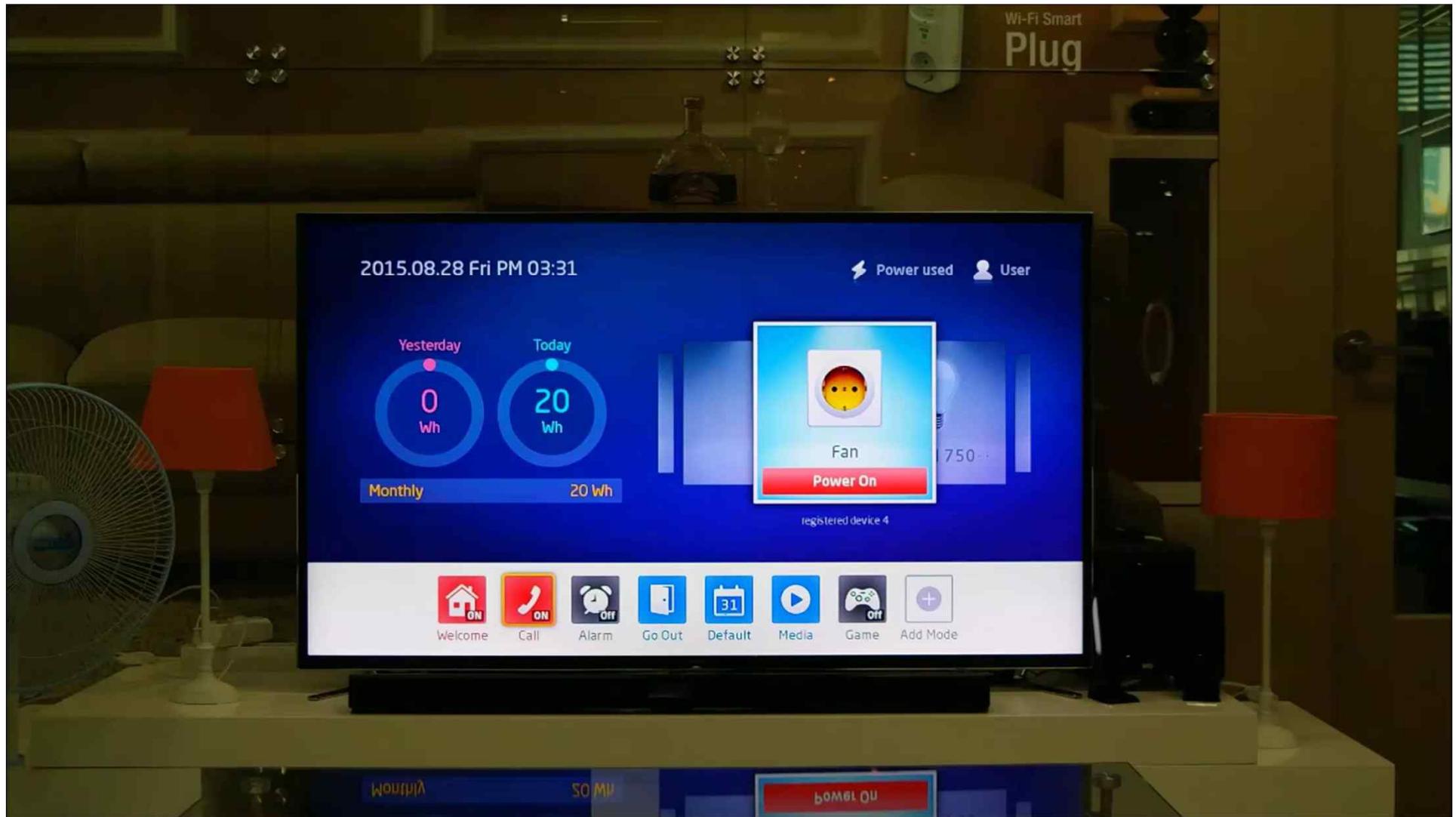


<Pre configured user scenario>

Home Automation Use Cases

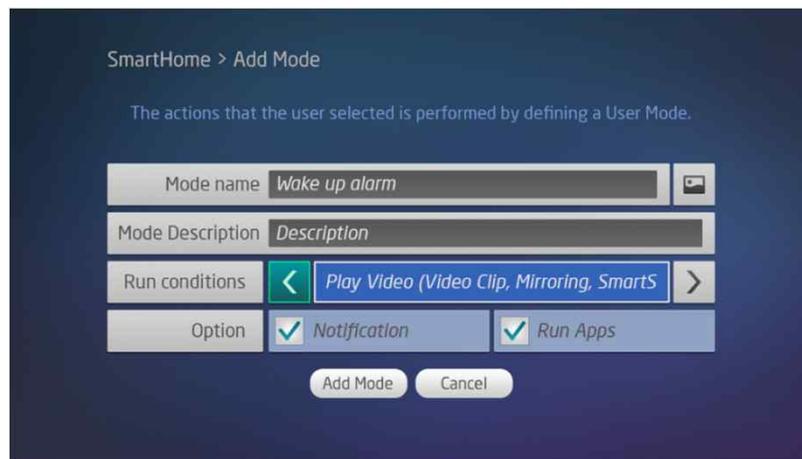
- 1** Incoming call alert mode for sleeping baby
- 2** Welcome powering on only for owner

Home Automation



IFTTT like User Custom Mode

- Users are able to add their own customized mode using Add Mode tab.
- Users can set freely according to the situation that home environment is facing. Using multi-sensor and other devices adoptive configuration for Smart Home service can be achieved.
- They may select to get notification or to run applications within the MagicCast.



<Add user customized mode>



<Device setting for user own scenario>

Remote Control Service

- Innopia delivers more comforting control over Smart Home Service by providing remote control service.
- Users can access smart home service with their mobile network via cloud server.
- Users can easily access and control devices before they arrive at home or even at a holiday vacation.



Multi Protocol IoT Media Platform

- Innopia' s unique device virtualization technology based on AllJoyn framework delivers the future proof IoT gateway for smart home/building service interworking not only with Wi-Fi devices but also other wireless communication protocols such as Z-wave and ZigBee.
- Most users are unaware of protocol that they are using. With Innopia' s multi protocol platform, other protocols such as Z-wave or ZigBee will appear as AllJoyn devices.
- More dynamic user scenarios are expected due to diversity in devices.



Smart Home Advanced Package

**AllJoyn Bridge Gateway
Z-wave to AllJoyn**



**Wi-Fi Smart LED
Light Bulb**



**Wi-Fi Smart
Power Plug**



Z-wave door sensor



Z-wave multi sensor

Home Security Service

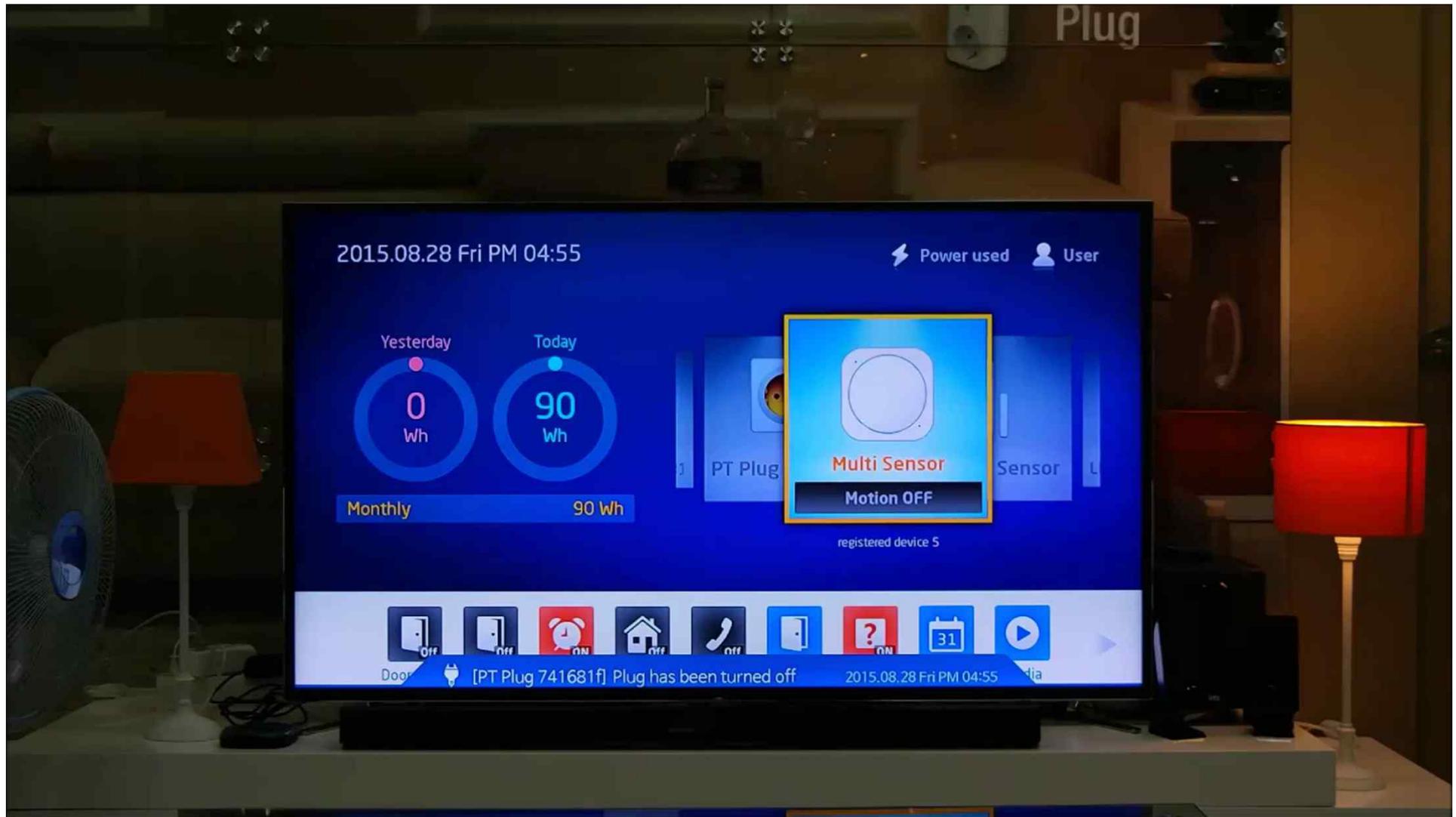
1

Home security warning service by combined action between Z-wave door sensor and Wi-Fi AllJoyn LED bulb

2

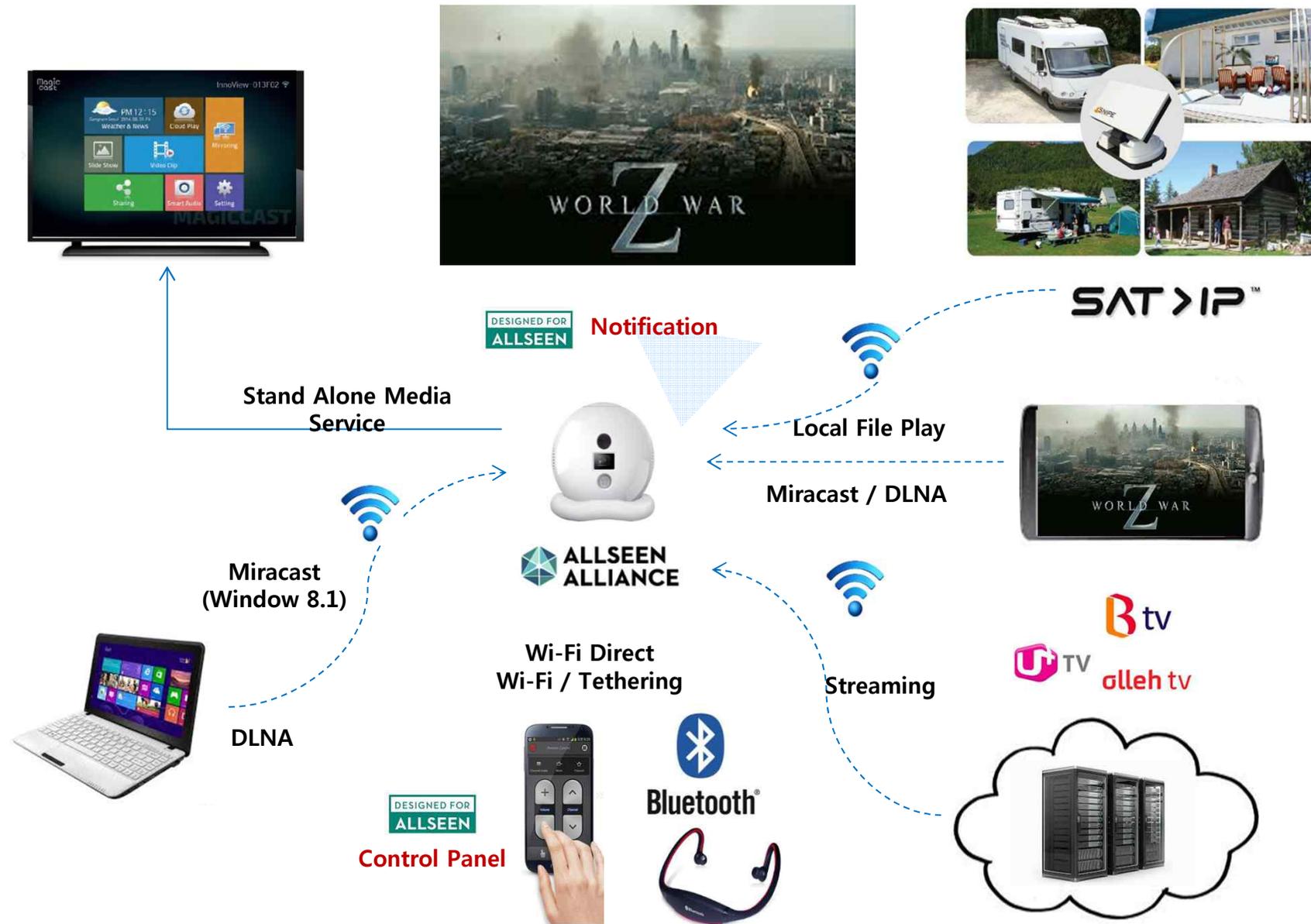
Z-wave motion detect sensor sends notice on Wi-Fi AllJoyn LED bulb and Wi-Fi AllJoyn plugged-in speaker

Home Security



AllJoyn enabled Wireless TV Streaming Projector

※ Launching in Q3, 2015



Smart Media Solution

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INNOPIA

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Thank you.