



**OPEN** CONNECTIVITY  
FOUNDATION™

## **AUTOMOTIVE IN OCF – OUR VISION & GOAL**

June 29<sup>th</sup> 2016

Open Connectivity Foundation



# Anti-trust Confidentiality Reminder

- This is a reminder that all Open Connectivity Foundation (“OCF”) activities are subject to compliance with the [Antitrust Compliance Policy](#) for Open Connectivity Foundation (the “Policy”). Each individual participant and attendee at this meeting is responsible for complying with the Policy. Copies of the Policy are available within the Workgroup portal, or if applicable, may be immediately emailed to anyone in this meeting.
- Additionally, this is a reminder that all discussions and disclosures at this meeting are subject to the Confidentiality provisions of the [OCF’s Bylaws](#).

# Agenda



Topic	Owner	Duration
Introduction to OCF & the need for automotive project	Moonki Hong (Samsung)	15 mins
Remove Vehicle Interaction (RVI) & OCF-RVI bridge	JLR + Samsung	40 mins
Data Model Mapping discussion	Michael Koster (SmartThings)	20 mins
W3C Automotive	Paul Boyes (W3C)	20 mins
OM Auto Incubator	Joel Hoffmann (OMA)	20 mins
Perspectives on vehicle developer community	Vinli	20 mins
JLR Automotive Incubator	JLR (TBD)	20 mins
<b>Demos</b>		
SmartHome + Connected Vehicle	JLR + Samsung	30 – 40 mins
OCF on Vinli devices	Vinli	
W3C Automotive demo	W3C	

# INTRODUCTION TO OCF & THE NEED FOR AUTOMOTIVE PROJECT

Moonki Hong

Samsung Electronics





# Background

- Connected Vehicle is the next frontier for Automotive business.
  - Significant topic of CES 2016
    - [http://www.cepro.com/article/control4\\_demos\\_smart\\_home\\_app\\_for\\_the\\_connected\\_car\\_at\\_ces\\_2016](http://www.cepro.com/article/control4_demos_smart_home_app_for_the_connected_car_at_ces_2016)
    - <http://www.ecommercetimes.com/story/82919.html>
    - <https://vimeo.com/150722672>
    - <http://www.slideshare.net/5throck/connecedted-car-smart-home-based-on-iot>
  - Desired Features
    - Secure Personal Device Control / Secure Access to Vehicle Controls & Data
    - Driving assistance / Diagnostics & Maintenance
  - **Dominated by Proprietary solutions → Lack of standards is hurting innovation and adoption**

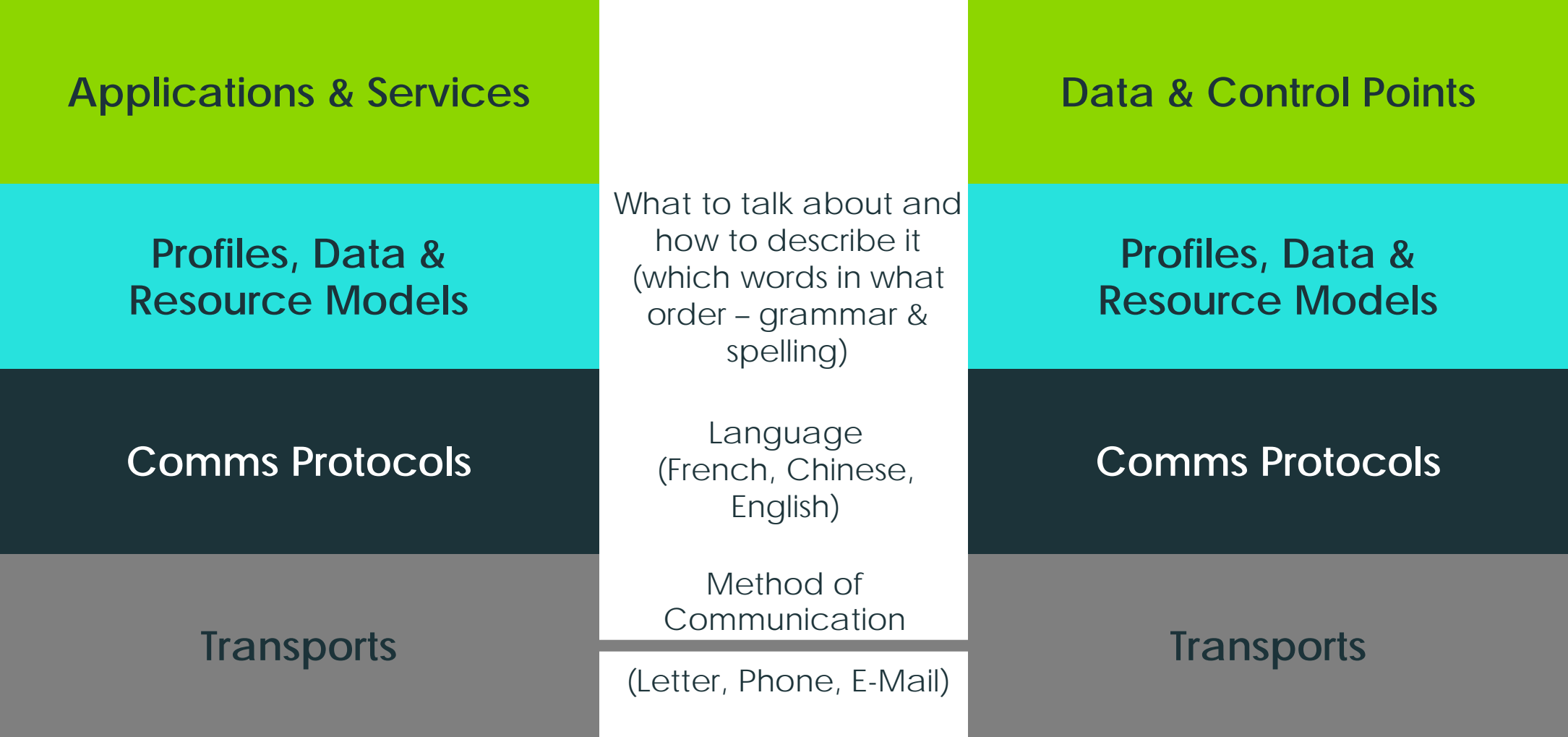
*Automotive will be a great potential domain for OCF in terms of business as well as technology, since one of the key promises of OCF is to guarantee the cross-platform/domain interoperability in enabling IoT.*



# OCF Basics

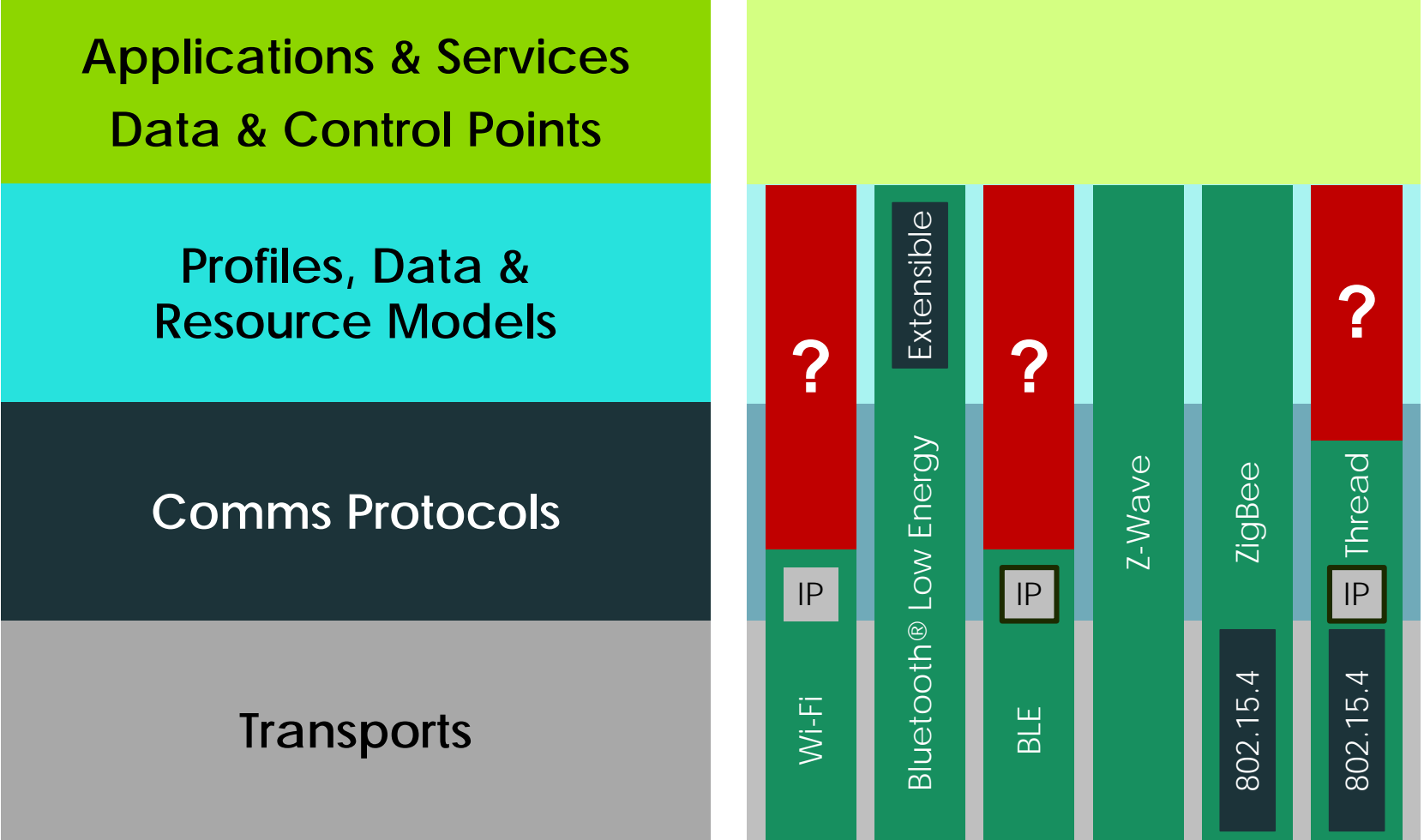
- The Open Interconnect Consortium (OCF) defines a common communication framework that connects and intelligently manages the flow of information among devices to address the emerging needs of the Internet of Things
- Regardless of form factor, operating system, vertical market, manufacturer or service provider
- Based on industry standard technologies
- OCF certifies products for interoperability and compliance with the OCF specifications
- OCF sponsors the IoTivity Project, an open source reference implementation of the OCF framework.
- OCF promotes the goal of broad interoperability via collaboration with other organisations and standards

# Comms Framework – Simple IoT Layers Model





# Current Consumer Radio-Based Standards



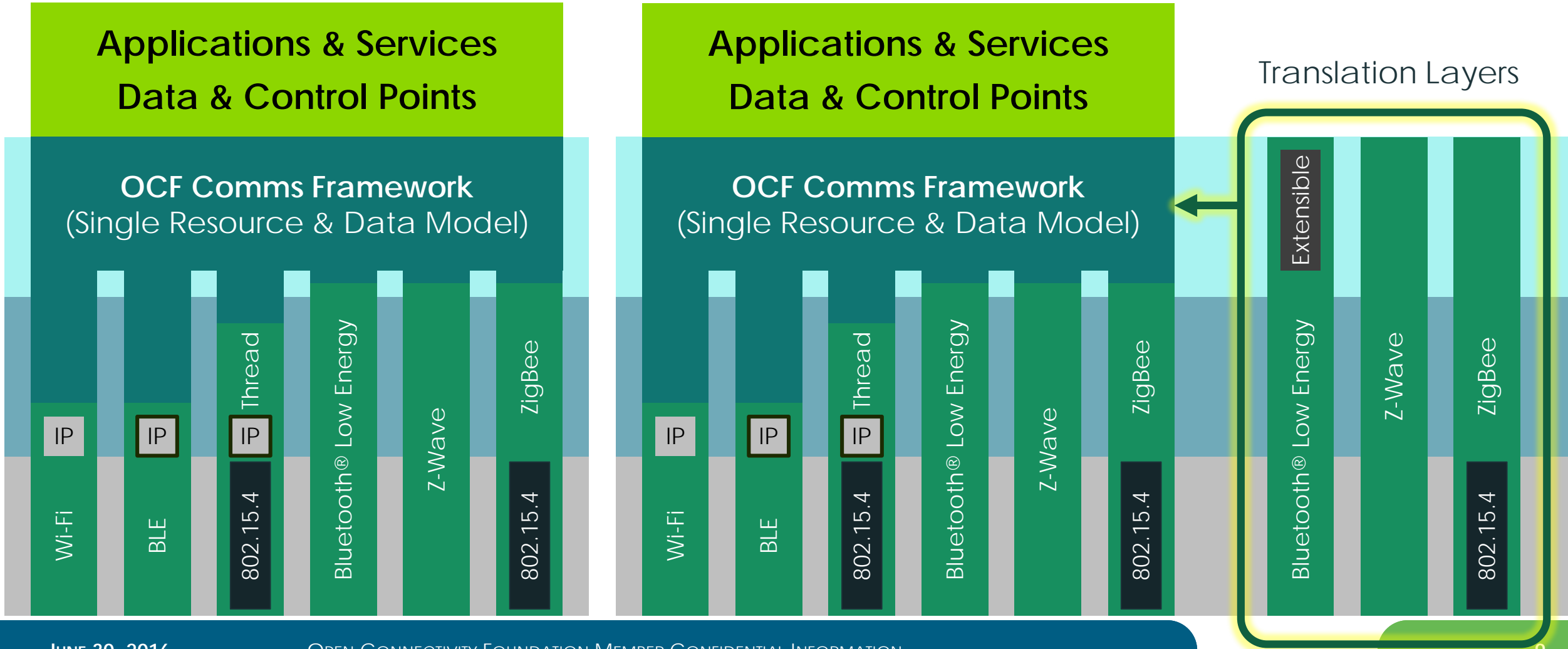
IP = 6LoWPAN



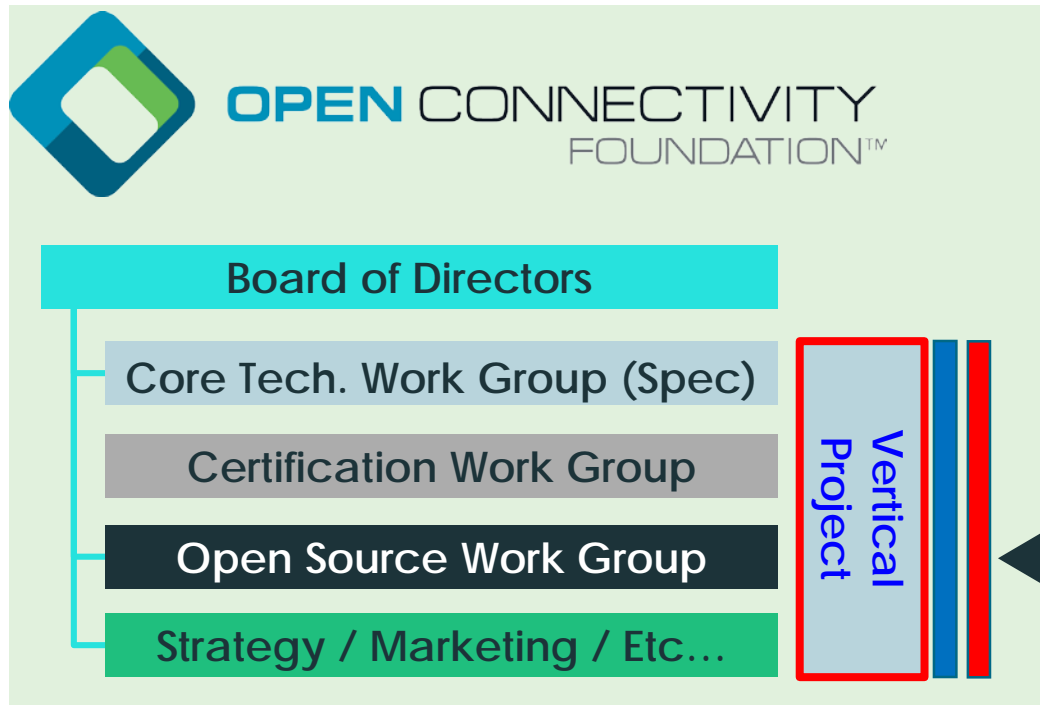
# OCF Comms Framework



- Native OCF
- Translation Model



# OCF & IoTivity Structure



**Innovative coordination – Specs & Open Source ready simultaneously,  
Time to market approach – Vertical Project harmonizing to all**



# OCF Automotive Project – Mission Statement

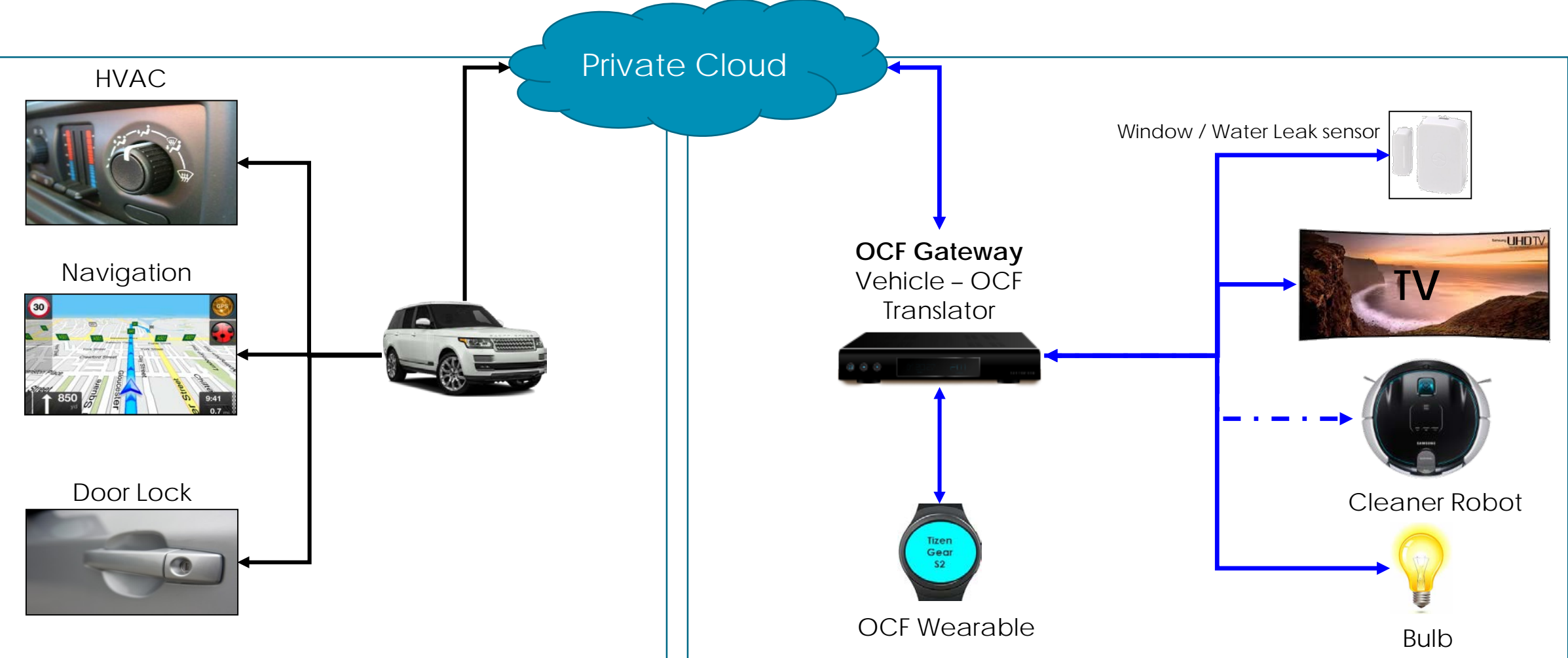
- OCF Automotive Project is launched to achieve this goal through...
  - Mining valid **use cases**
  - Representing promising **demos**
  - Delivering interoperable automotive **specification and certification** program
  - Releasing regarding IoTivity **open source implementation**
  - Recruiting more automotive industry players into **OCF membership**
  - Collaborating with **existing standards bodies**
- What does **OCF Automotive Project not intend to do?**
  - Avoid to only be trapped to define automotive data model that will be isolated (not interoperable and not adopted) from the existing automotive players' technology/business
- **Why is OCF the right place** for this project?
  - OCF guarantees cross-domain/platform interoperability, so we make much bigger synergy not only in automotive, but also in combination with a variety of verticals, e.g. smarthome, healthcare, and industrial.

# Use Case Example #1 (Vehicle from/to Smart Home)

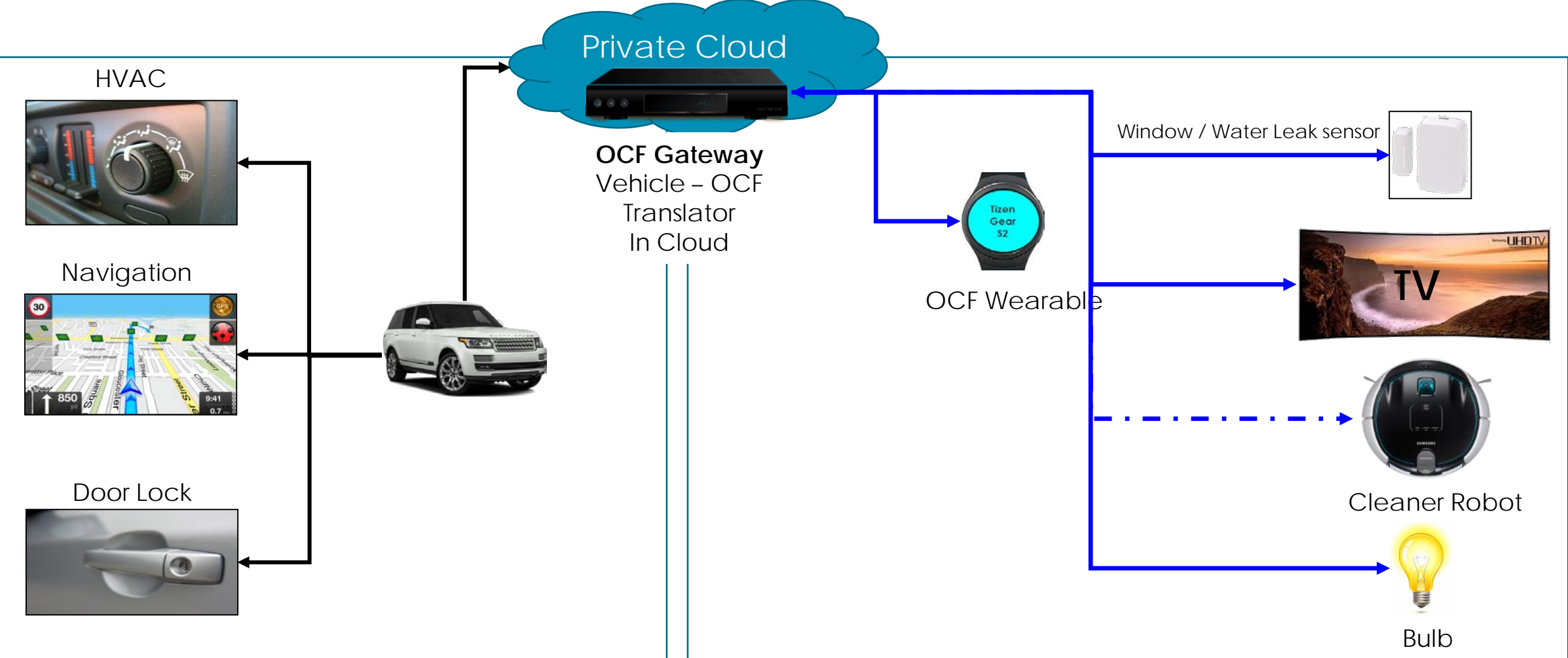


- Control Smart Home devices from Vehicle Dashboard.
  - Control Vehicle parameters from Smart Home Devices.
- Trigger notifications on devices on certain events
  - Vehicle unlocked, location triggers, Point of Interest triggers
- Scene implementations
  - Vehicle arrives – smart home devices change state to be ready.
  - Vehicle leaves - smart home devices change state to save power.
- Vehicle customization based on user.
  - User wears an OCF wearable device and vehicle sets HVAC, audio accordingly
- Location based use cases
  - Start vehicle and set navigation to office route every weekday morning at 8 am
  - Start vehicle and set navigation to home route every weekday evening at 7 pm
  - Notifications when vehicle crosses a Geofence.

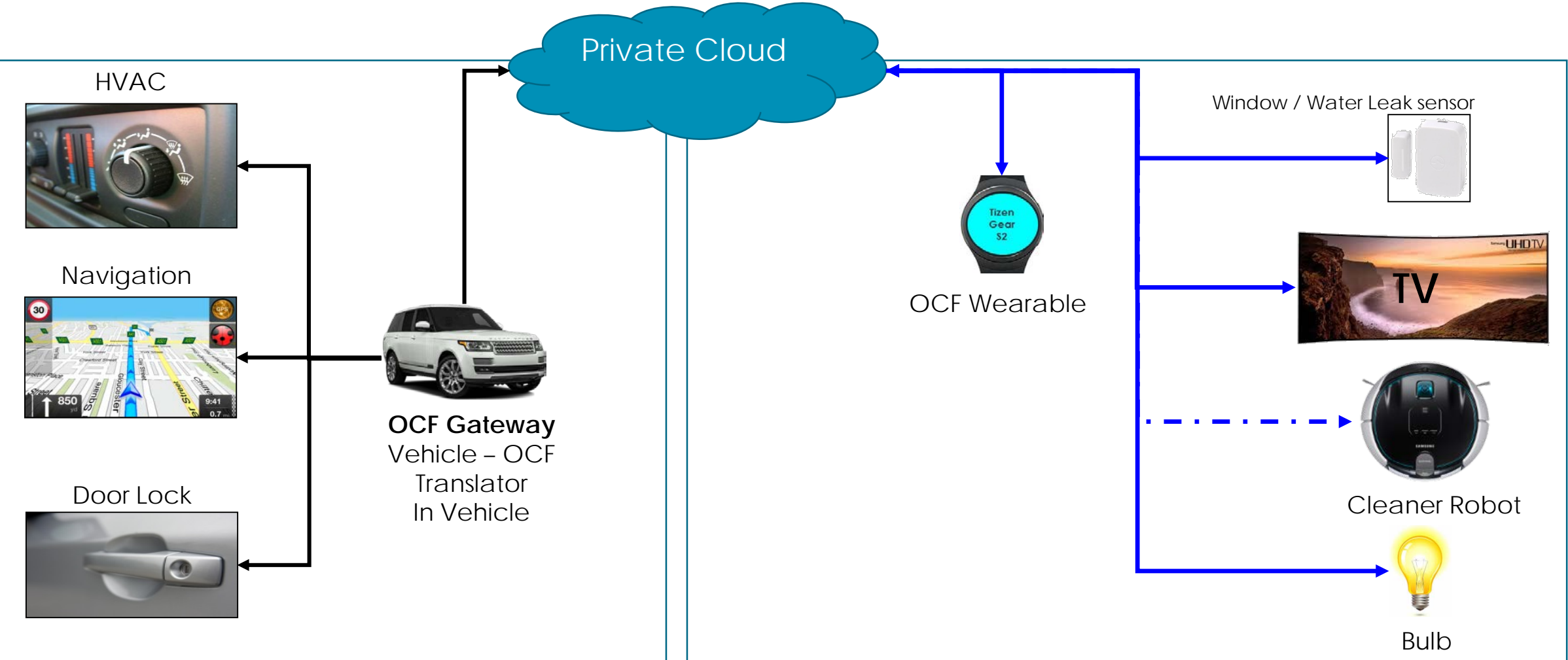
# Vehicle to Smart home Interactions (via Home Gateway)



# Vehicle to Smart home Interactions (via Gateway in the Cloud)



# Vehicle to Smart home Interactions (via OCF in Vehicle)

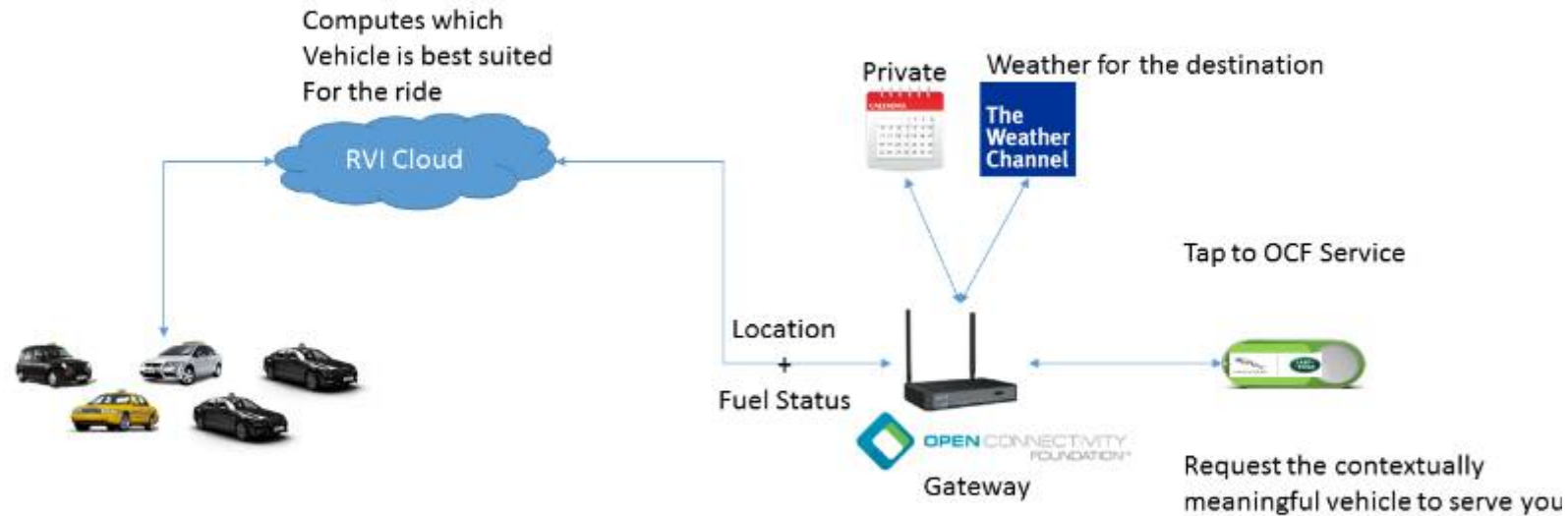




# Use Case Examples #2 (with Web Services)

- Multiple vehicle management for big families or a neighborhood.

## Contextual Vehicle Service







# Use Case Examples #3

- Fleet management console for Car Sharing / Ride sharing services

## Integrated Fleet Management Mini Taxi Fleet / Large Family





# Deliverable (Tentative)

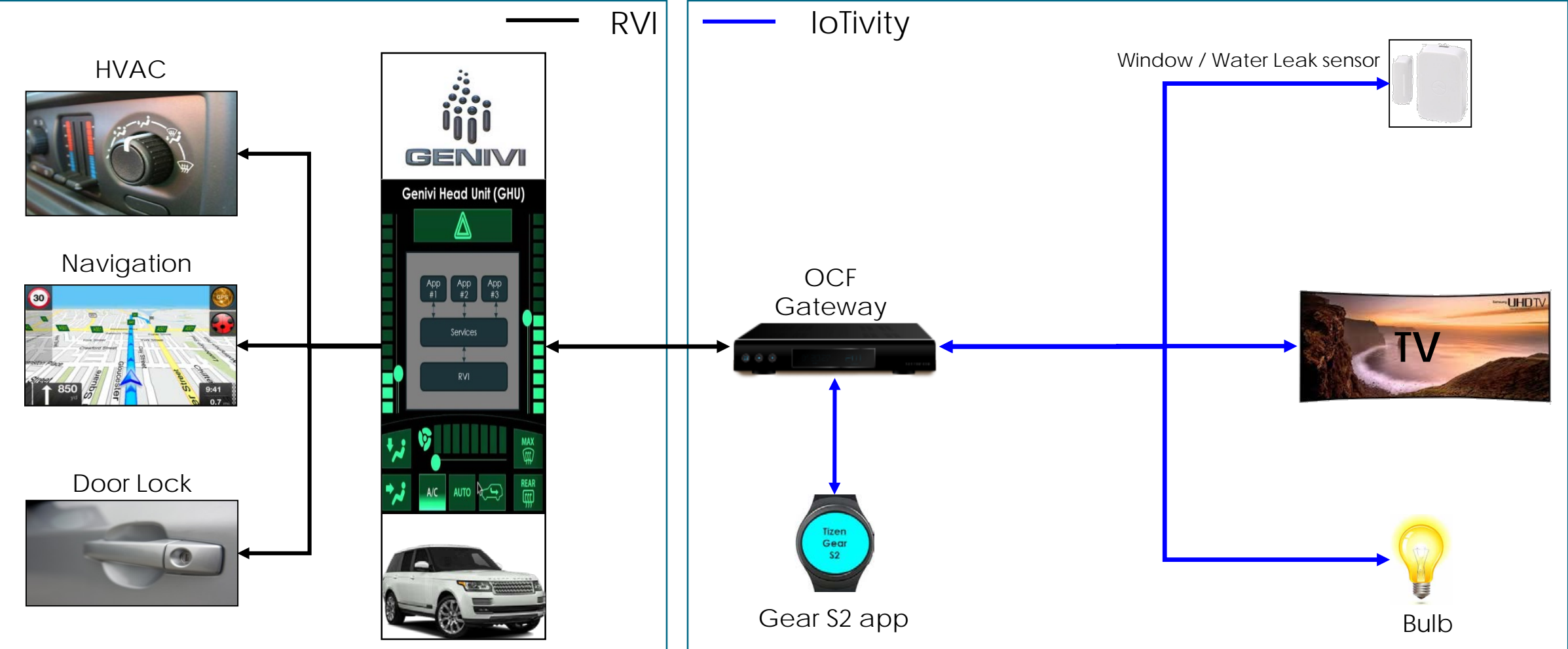
- ~10 feasible use cases not only in automotive, but also a harmonization with different verticals
- Automotive promotion with products-based demos at the upcoming CES '17 and others
- OCF Core / Security specification satisfying requirements gathered from automotive industry
- OCF Automotive data model release at oneIoTa
- IoTivity code release contributed by IoTivity Automotive Project
- OCF Certification Program for automotive
- +30 Automotive regarding membership recruitment



# DEMO 1: SMARTHOME + CONNECTED VEHICLE

Jaguar Land Rover, Samsung Electronics

# Demo Topology





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