

# Release of ECHONET 2.0 Vision



**ECHONET**

**Katsuhiko HIRAMATSU**  
**Representative Director, ECHONET Consortium**



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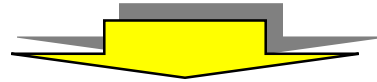
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# 1. Overview of ECHONET activities

# Establishment of the ECHONET Consortium

A variety of problems emerged in the late 1990s

- Development of energy-saving technology for individual devices is already saturated?
  - New age that understands the home as a system to manage effective use of energy
- Establishment of a system to support everyday life of senior citizens and manage health conditions is an urgent necessity



Need for eco-friendly living spaces through networking of devices and social cooperation



Research sponsored by the Ministry of International Trade and Industry (MITI)  
“Investigation and research committee for the ideal 21st century home network” (October 1996 through May 1997)



**Establishment of the ECHONET Consortium (December 1997)**



# What is the ECHONET Consortium?

The ECHONET Consortium is a group that promotes the “ECHONET Lite” communication protocol that links IoT home electric devices and equipment.



## Members

\*Total 284 members (as of December 1, 2018)

- **Managing members:** Formulation of standard specifications, operation of the Consortium, and spreading and promotion and facilitation activities  
7 managing members (Hitachi, Ltd., Mitsubishi Electric Corp., Nippon Telegraph and Telephone Corporation, Panasonic Corporation, Sharp, Tokyo Electric Power Company Holdings, Inc., Toshiba Corp.) and 42 managing associate members
- **General members:** Supporting standard specifications and development of ECHONET devices and services  
168 general members and 36 general associate members
- **Academic members:** Formulation of standard specifications and support for popularization  
31 members



# Structure

**Representative Director:** Katsuhiko Hiramatsu (Panasonic Corporation)

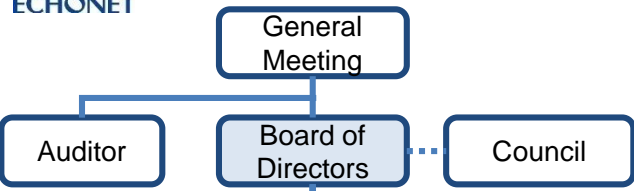
**Managing Director:** Hisashi Kodama

**Directors:**

Toshio Nomura (Sharp Corporation), Takayuki Amatsu (Tokyo Electric Power Company Holdings, Inc.), Hiroshi Kubota (TOSHIBA CORPORATION), Michiyasu Kawada (Nippon Telegraph and Telephone Corporation), Takashi Hasegawa (Hitachi Appliances, Inc.), Namihei Suzuki (Mitsubishi Electric Corporation)

**Advisory fellow:**

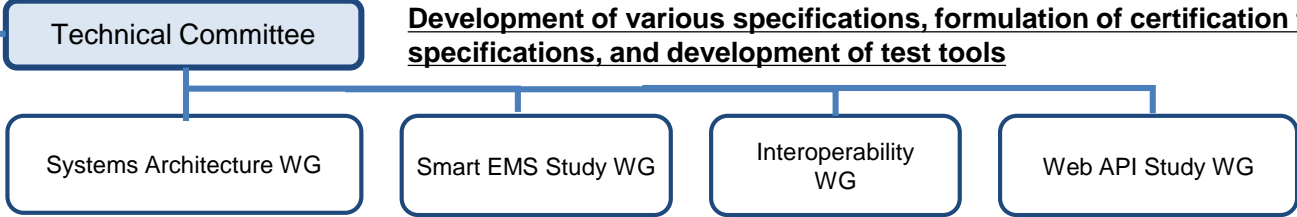
- Yasuo Tan (Prof. of Japan Advanced Institute of Science and Technology)
- Issiki Masao (Prof. of Kanagawa Institute of Technology)
- Dr. Masaki Umejima, Project Associate Professor at Keio University Graduate School



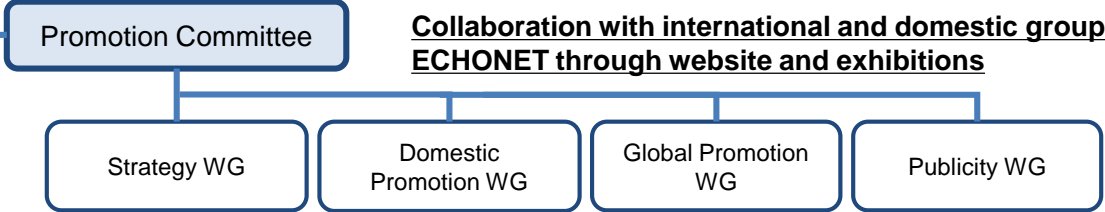
**Operation of the Consortium and study of institutional design**



**Development of various specifications, formulation of certification test specifications, and development of test tools**



**Collaboration with international and domestic groups, and promoting and spreading ECHONET through website and exhibitions**





# History of the ECHONET

December 1997 through June 2011

June 2011 through December 2018

1997  
Establishment of  
the Consortium

Formulation of the  
ECHONET specifications  
and promotion and  
facilitation activities

Formulation of the ECHONET Lite  
specifications and activities to popularize AIF  
**ECHONET 1.0**

2000  
Released ECHONET  
specifications Ver.1.00

2002  
Released  
Ver.2.00

2005  
Released  
Ver.3.00

2011  
Released  
Ver.4.00

Jun 2011  
Released  
ECHONET Lite  
Ver.1.00

Oct 2015  
Released  
ECHONET Lite  
Ver.1.12 Release

2016 and onward  
Started third-party  
certification of the  
ECHONET Lite AIF

2002 and onward  
Manufacturers started  
selling ECHONET  
devices

2008 and onward  
ECHONET made into  
an international  
standard

Feb 2012  
ECHONET Lite  
recommended as HEMS  
standard interface

2014 and onward  
Started installation for  
smart meters with  
ECHONET Lite

Network-connected home  
appliances attract attention as  
next-generation devices

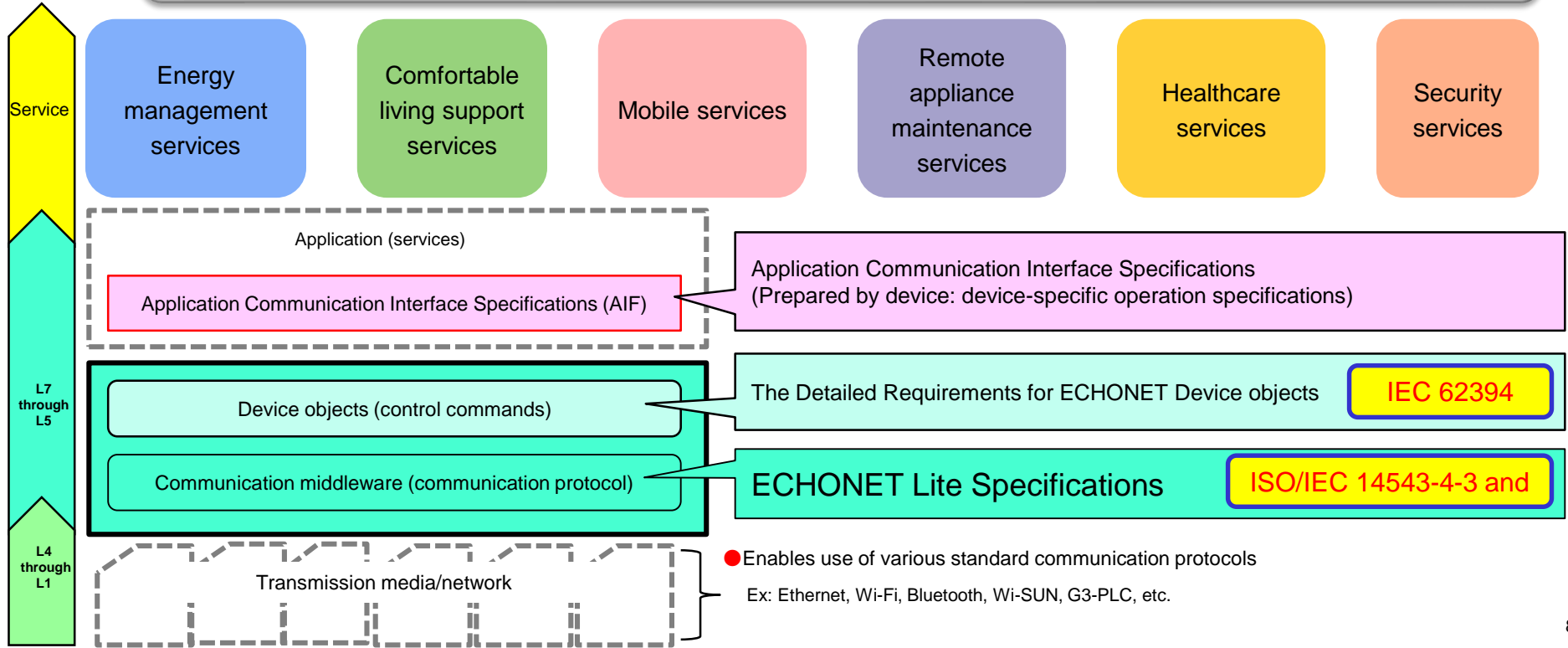
HEMS attracted side attention  
as a way to stabilize power  
supply

2012 and onward  
ECHONET Lite made  
into an international  
standard



# ECHONET Lite specifications

Promoting development and standardization of a communication protocol to realize various services under a multi-vendor environment



● Enables use of various standard communication protocols  
 Ex: Ethernet, Wi-Fi, Bluetooth, Wi-SUN, G3-PLC, etc.



## 2. Achievements of ECHONET 1.0

### What is ECHONET 1.0?:

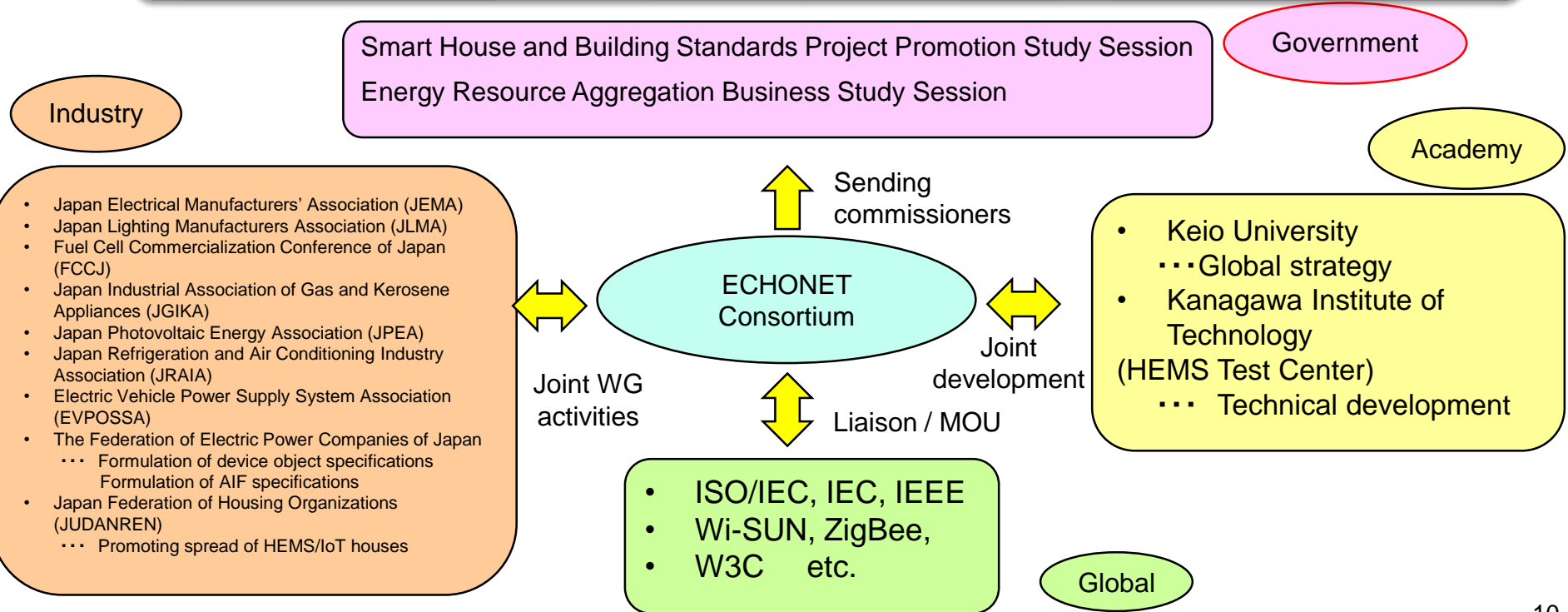
ECHONET Lite specifications and promotion and facilitation activities for AIF, primarily targeting energy management

\*AIF specifications: Application Communication Interface Specifications



# Collaborative activities to realize ECHONET 1.0 (Energy Management)

- Completed formulation of standard specifications supporting energy management, and started third-party certification
- More and more devices (including eight key devices) support ECHONET Lite





# Number of registered members

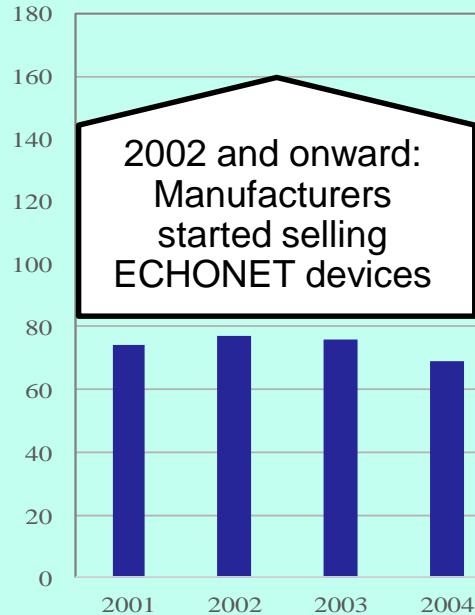
December 1997 through June 2011

June 2011 through December 2018

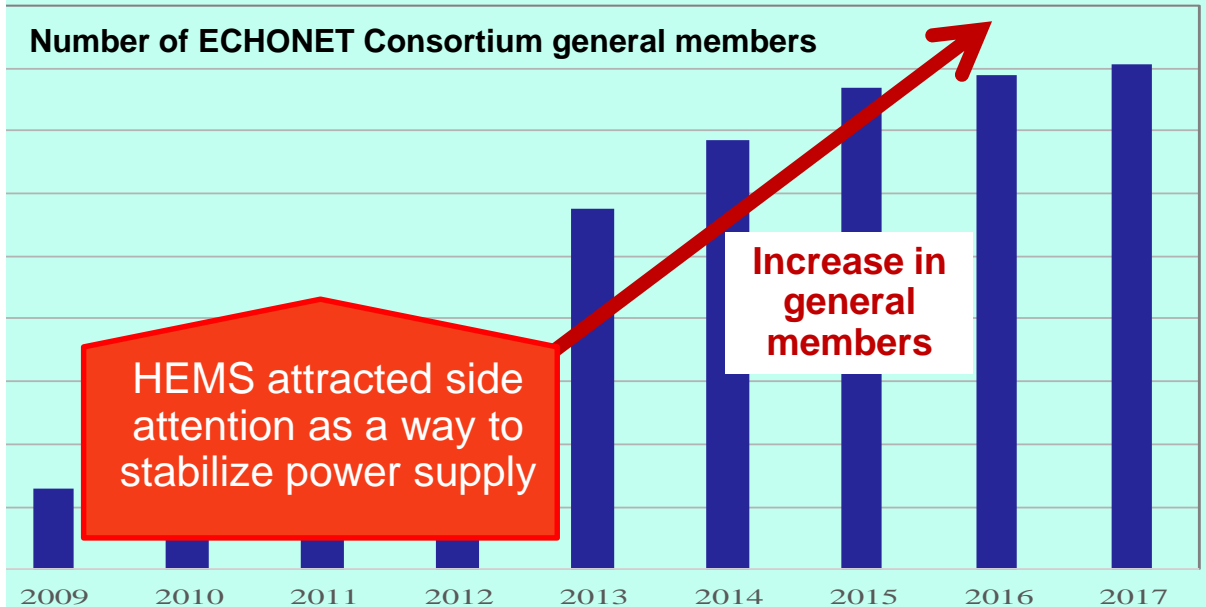
1997:  
Establishment  
of the  
Consortium

Formulation of the ECHONET  
specifications and promotion  
and facilitation activities

Formulation of the ECHONET Lite  
specifications and activities to popularize AIF  
**ECHONET 1.0**



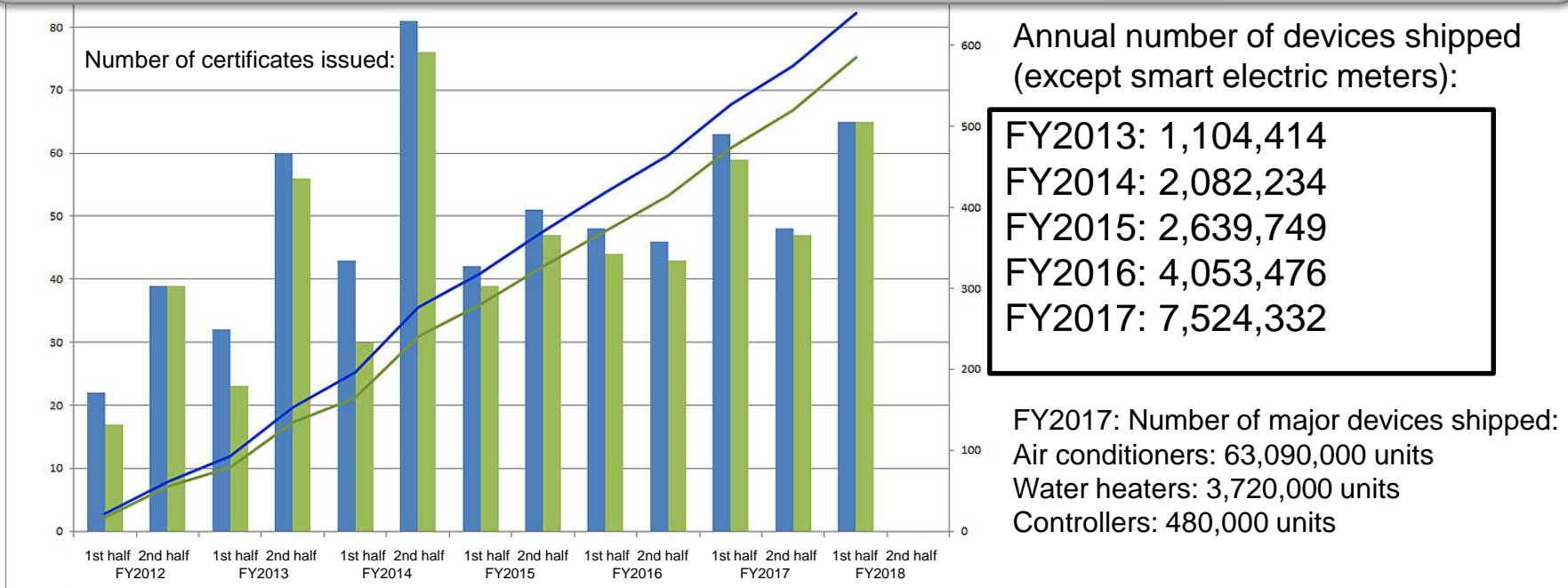
Number of ECHONET Consortium general members





# Current spread of ECHONET Lite devices

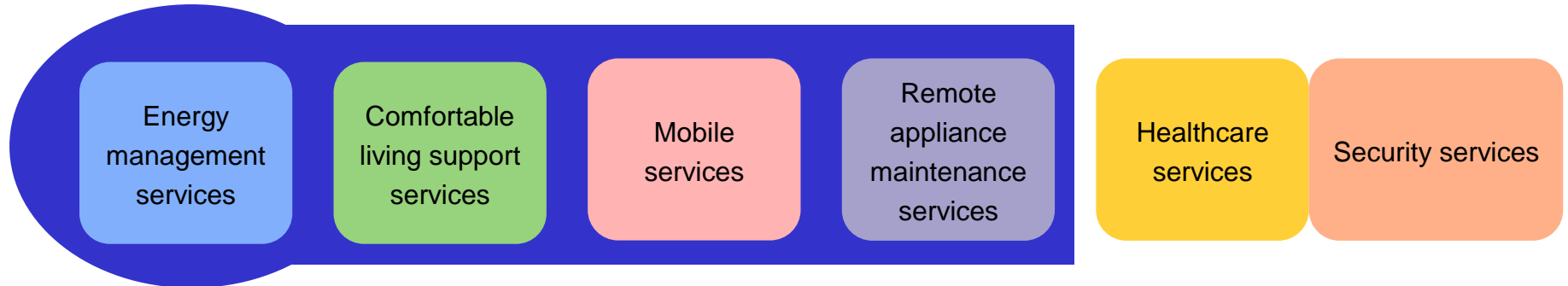
Number of shipped devices supporting ECHONET Lite from 2012 onward  
Number of certified ECHONET Lite devices: **17 million units** (more than 500 types)  
Smart meters implementing route B: **more than 27 million units**





# Services already provided with ECHONET 1.0

Using **ECHONET Lite devices** focusing on energy management to provide a variety of services. These include comfortable living support services, mobile devices, and remote appliance maintenance services.



Major targets include large household electrical appliances (known as “white goods”), commercial-use equipment, and housing facilities.



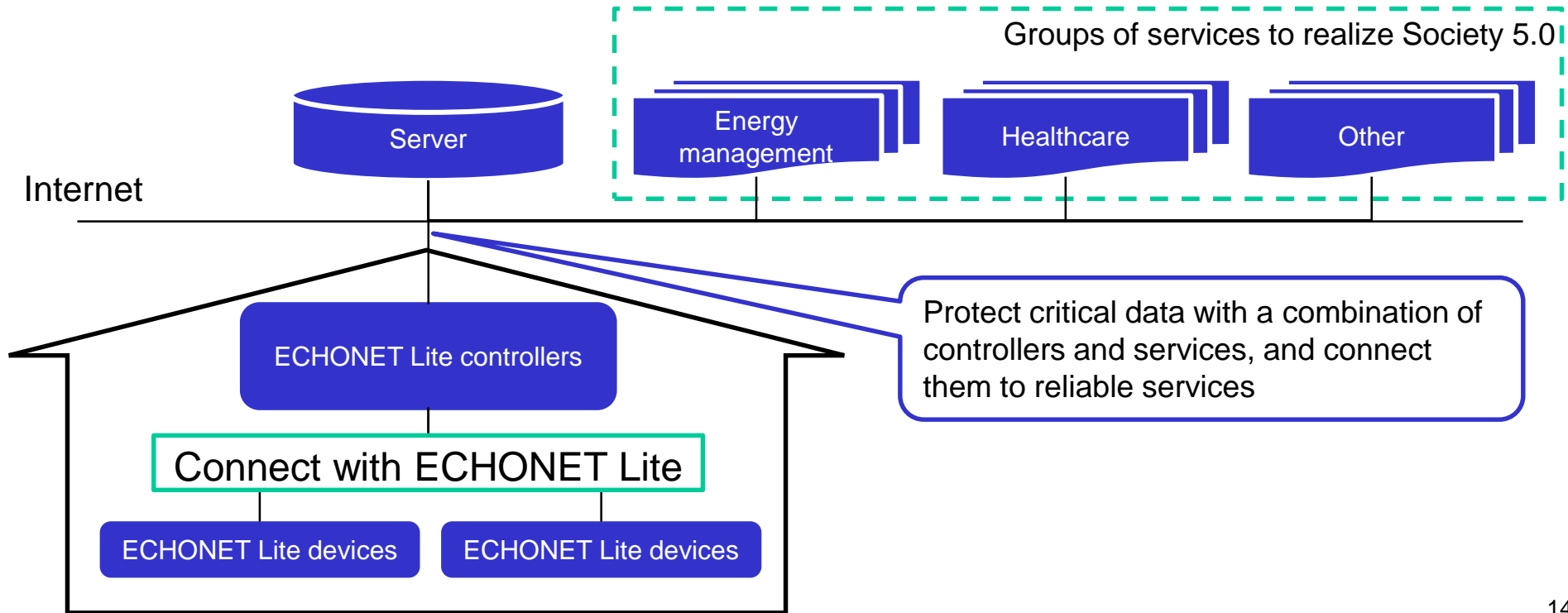
Targeting new devices/services

Towards ECHONET 2.0



# Contributing to Society 5.0 with ECHONET 2.0

Creating a **better society (Society 5.0)** by facilitating the use of cloud data in ECHONET Lite devices for energy management, healthcare services, and other services



## 3. About ECHONET 2.0

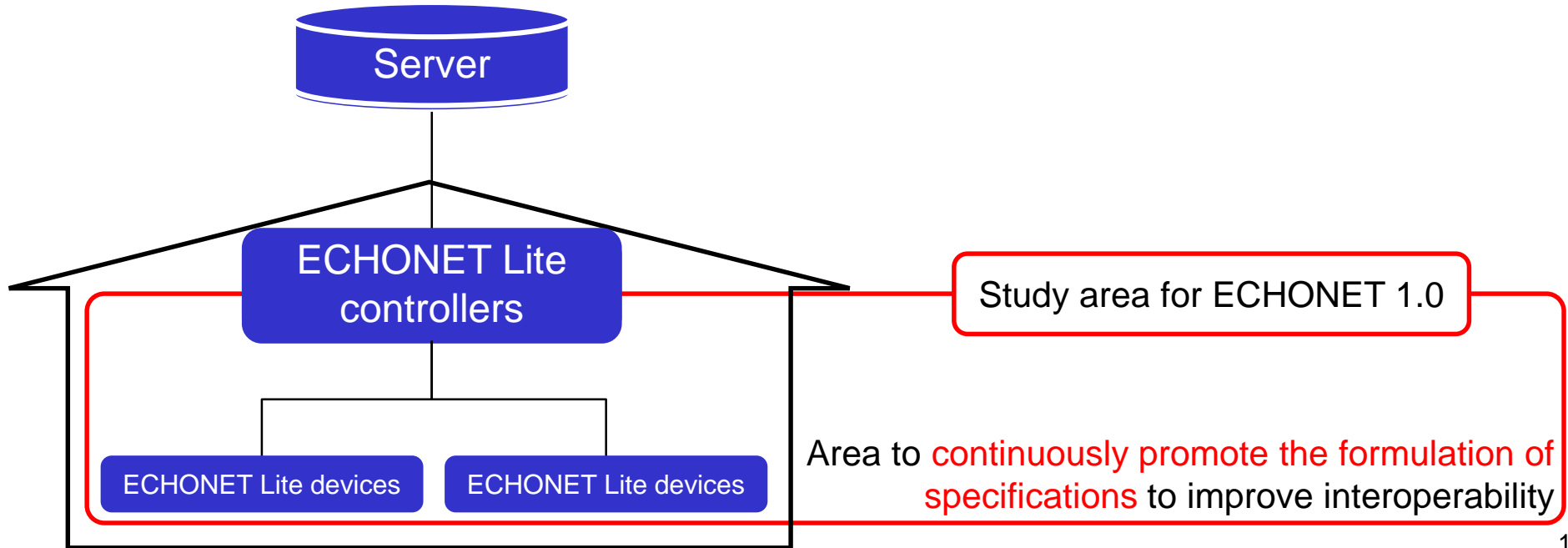
### What is ECHONET 2.0?

Activities **that help realize an IoT society/Society 5.0** to add healthcare services as the second core service following to the energy management. o add healthcare services as the second core service following to the energy management



# The ECHONET 2.0 approach

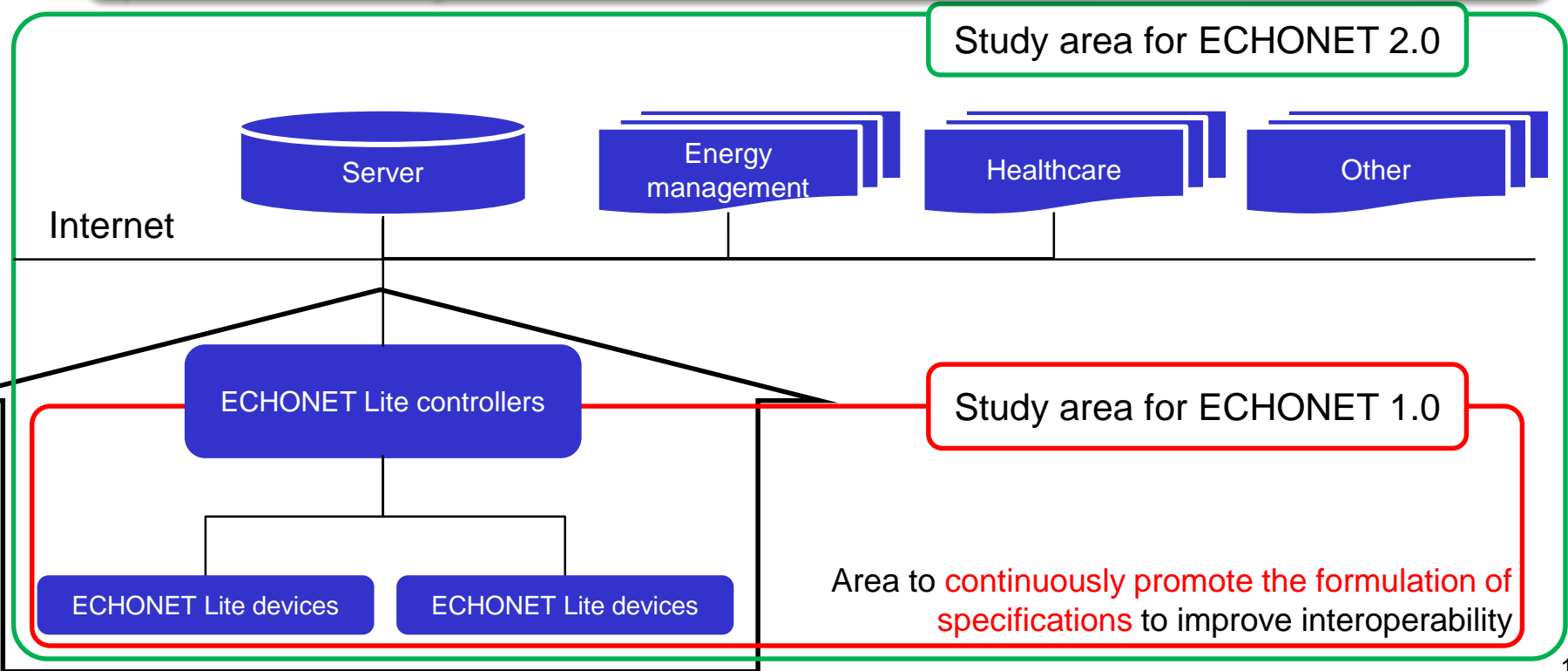
To clearly demonstrate that ECHONET Lite devices make a contribution to IoT society, study the feasibility of **policy formulation for the system as a whole** in addition to **extending to previous specifications**, including the internet.





# The ECHONET 2.0 approach

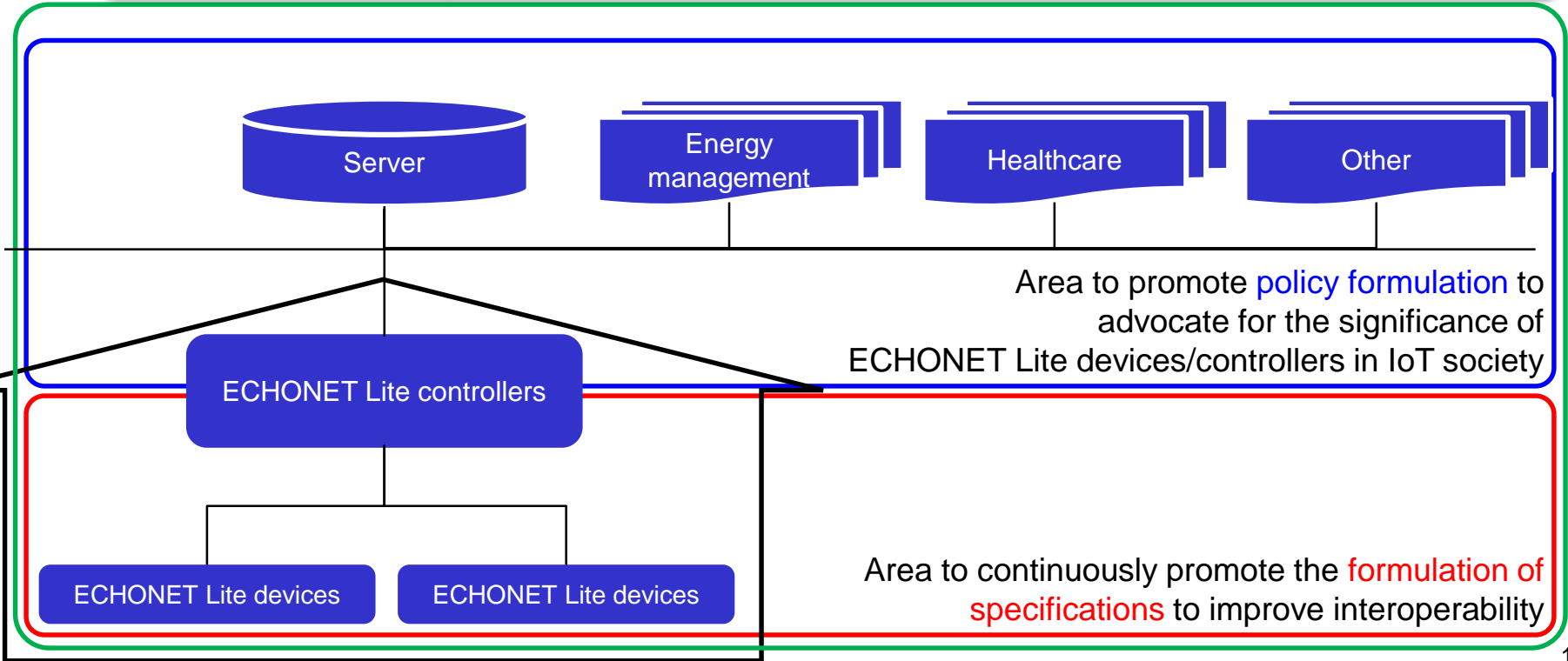
To clearly demonstrate that ECHONET Lite devices make a contribution to IoT society, study the feasibility of **policy formulation for the system as a whole** in addition to **extending to previous specifications**, including the internet





# The ECHONET 2.0 approach

To clearly demonstrate that ECHONET Lite devices make contribution to IoT society, study the feasibility of **policy formulation for the system as a whole** in addition to **extending to previous specifications**, including the internet



# Goals and basic policy of ECHONET 2.0

## Goals of ECHONET 2.0

1. Achieve the highest **penetration to IoT homes/offices** in the world using ECHONET Lite home appliances and commercial-use equipment
2. Promote and develop the leading international interface in Japan to **support economic development and resolve social challenges**

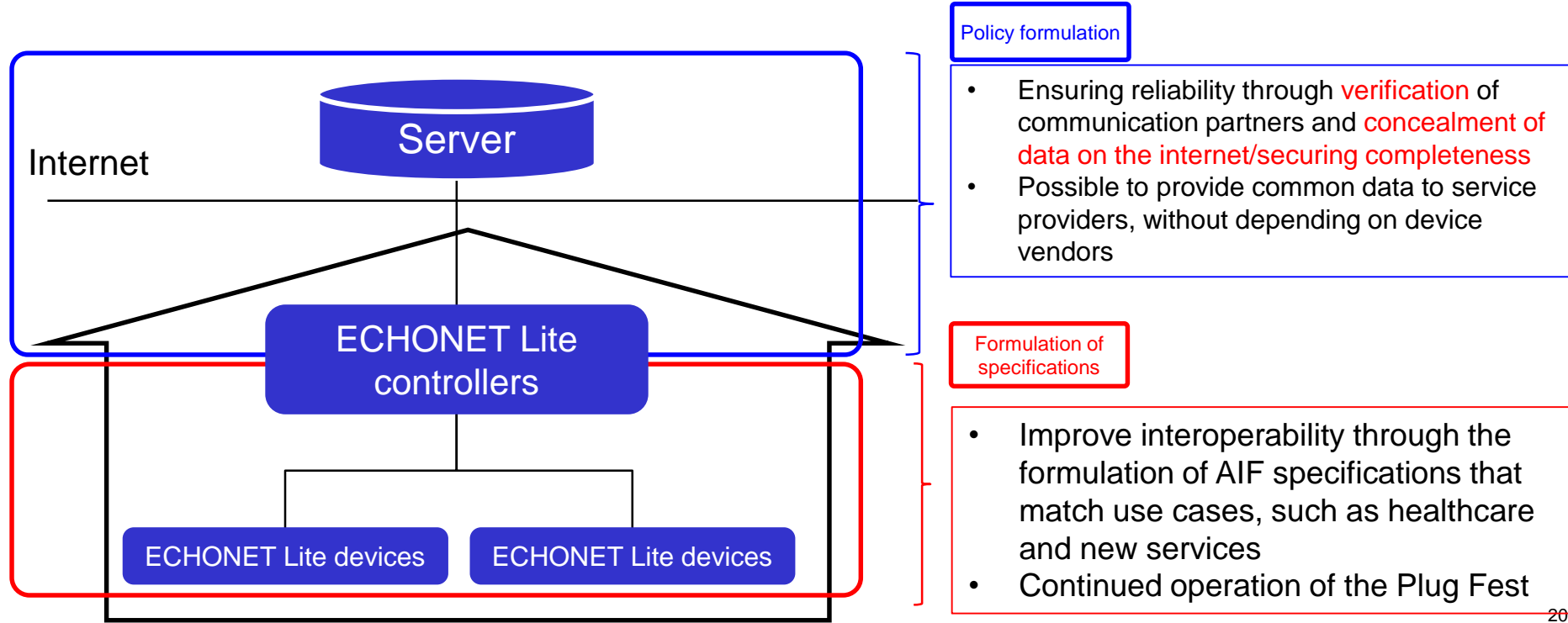


## Basic policy of ECHONET 2.0

1. Promote **service creation that satisfies needs (e.g. IoT and IoB)**, taking advantage of the number of ECHONET Lite devices spread
  - A) Extension of the ECHONET Lite devices
  - B) Organizing the concept of system reliability using ECHONET Lite devices**
  - C) Study inter-server linking technologies to link a great variety of services**
  - D) Strengthen collaboration between service providers**
2. **Obtain more collaborators** by working with groups involved in standardization and allowing more business operators to enter the industry
  - A) Promoting international standardization and spreading specifications worldwide
  - B) Improving the development environment for new business entrants**

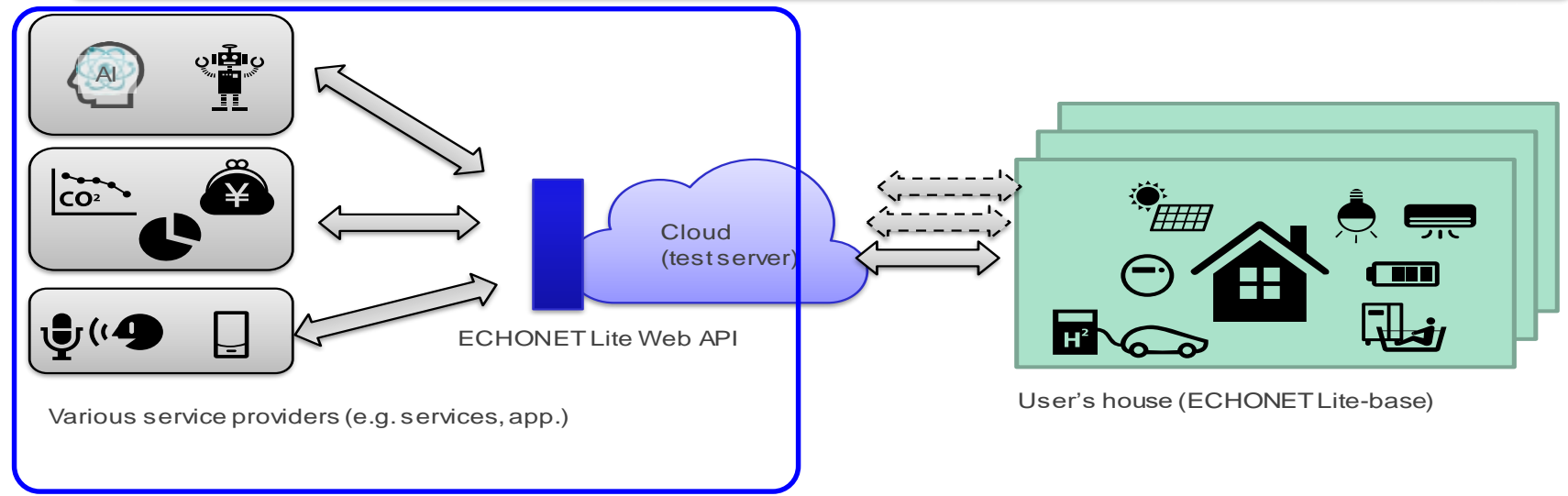
# Policy1-B: Organizing the concept of system reliability

- Superior interoperability between controllers and ECHONET Lite devices
- Study system reliability that can be configured in combinations of controllers and servers



# Policy1-C: Study linking technology between servers

- Study Web API on a web server to enable service providers to develop various services and applications for ECHONET Lite devices.

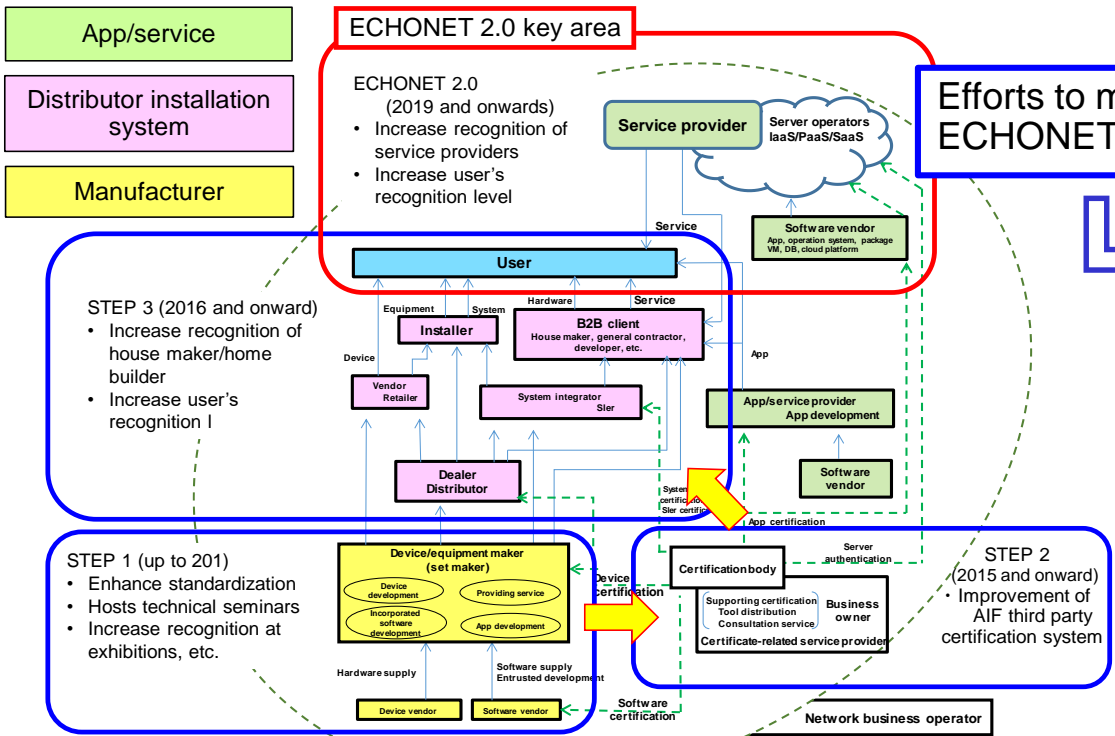


Policy formulation

- Web API specification document (first edition) to realize basic functions such as controlling/referring status
- The specification document (second edition) to realize service-level functions is planned for release next spring.
- Experimental servers for various service providers are now under construction. Operation is planned to start this winter (members only).

# Policy1-D: Promoting the spread of service providers

- To promote the spread of services using ECHONET Lite devices, increase recognition of business plans of service providers and the market



Efforts to materialize ECHONET 2.0



- To spread ECHONET Lite devices, get feedback from service providers **to create a Market Requirements Document for areas such as healthcare services**
- Study a Web API that would result in **simplified service development** by gathering feedback through the use of a test server

- Expanding services with a focus on healthcare, **allowing more business operators to enter the industry** is key
- To form alliances, look at the **horizontal deployment of test centers** and **disclosing development environments**

1. Improve the verification environment for ECHONET Lite healthcare devices

2. To collaborate with service providers, look at disclosing development environments on the cloud (including opening source codes)

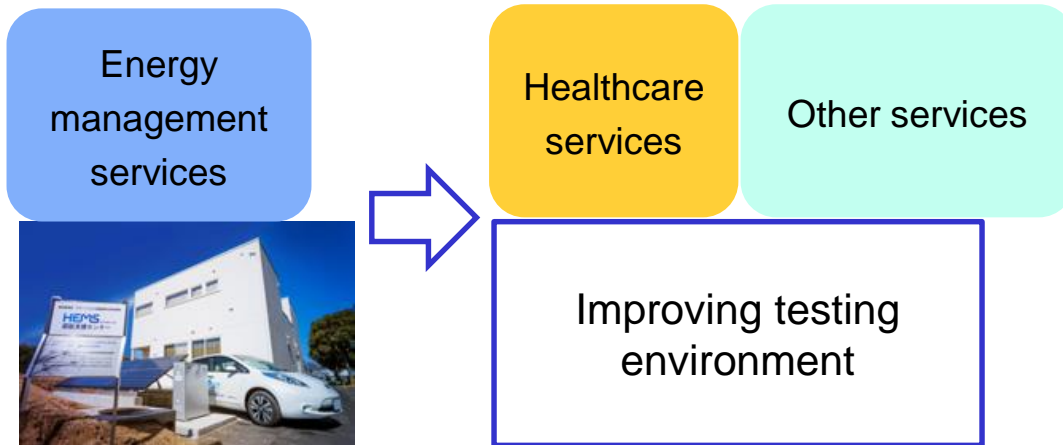
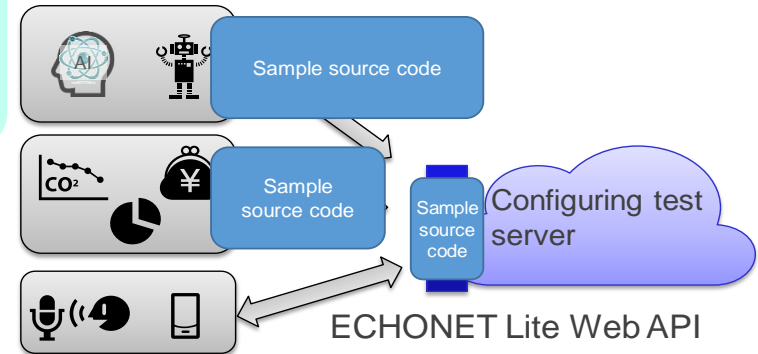


Photo: HEMS Test Center



Various service providers (service, app, etc.)

# 4. Summary

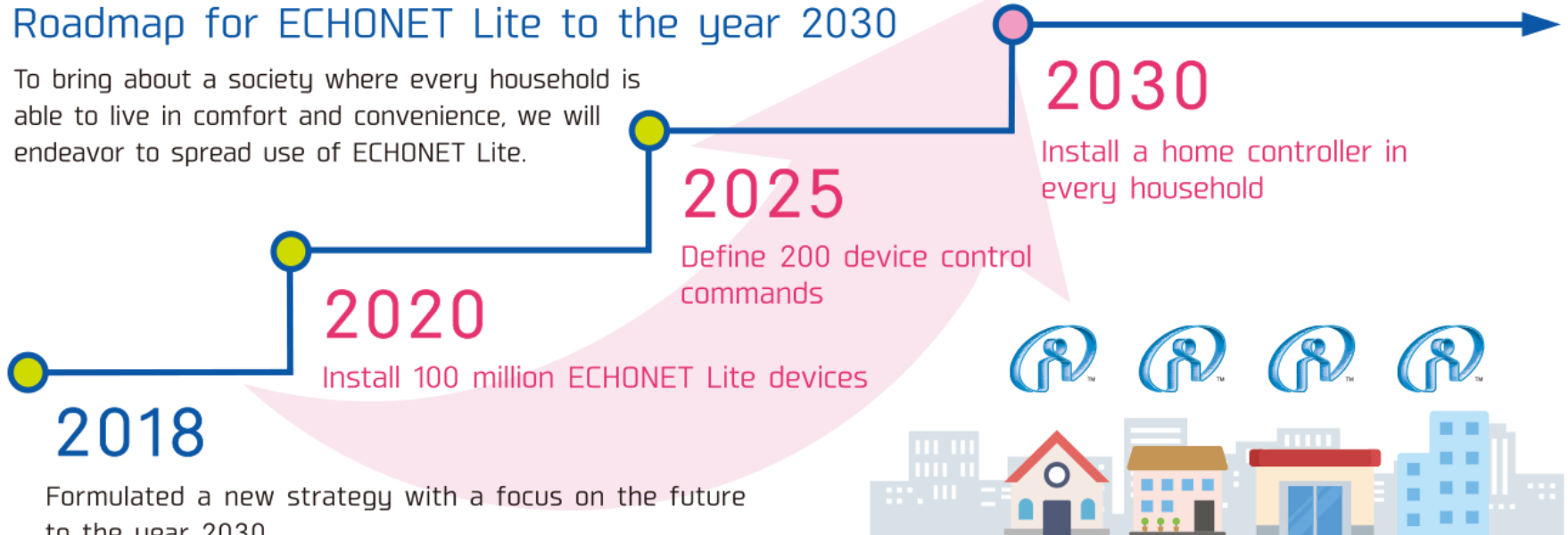


# Ideal future of the ECHONET 2.0

- ECHONET Lite-implemented devices: **100 million units** (by 2020) --> Including expanded application to commercial-use equipment
- Definitions of device objects: **200 models** (by 2025) --> Application to new services such as healthcare
- Introduce home controllers **to all household** (by 2030) --> Contribute to Society 5.0

## Roadmap for ECHONET Lite to the year 2030

To bring about a society where every household is able to live in comfort and convenience, we will endeavor to spread use of ECHONET Lite.





# Conclusion

We promote **ECHONET 2.0** to **help realize IoT society/Society 5.0** and add healthcare services as the second core service following energy management.

Thank you for your continued support of the ECHONET Consortium.



Thank you.