SOCIAL INNOVATION: OUR VISION FOR THE CUSTOMER

Yasuo Tanabe
VP and Executive Officer,
Government & External Relations
Hitachi Ltd.

MAYOR'S OFFICE OF ECONOMIC DEVELOPMENT MAUI COUNTY

maui economic DEVELOPMENT BOARD

HITACHI
Inspire the Next

Contents

1-1. Hitachi Profile

HITACHI
Inspire the Next

HITACHI

1-2. Business field of Hitachi (FY2013)

HITACHI
Inspire the Next

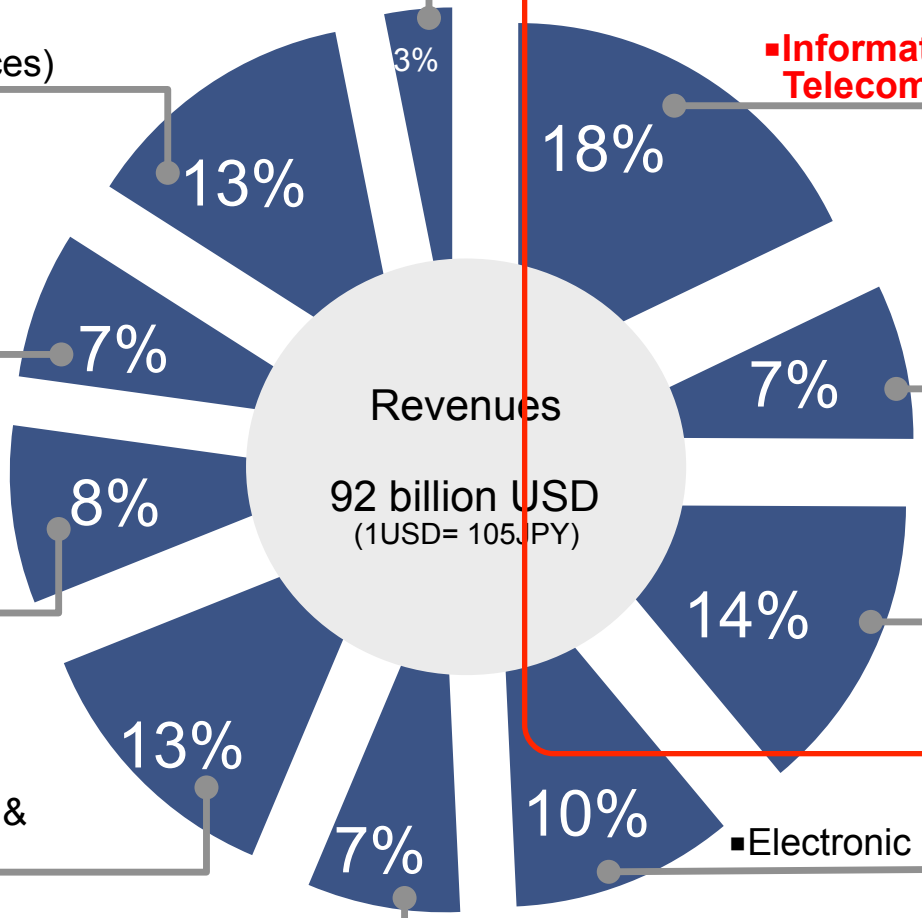
▪Financial Services

▪Others
(Logistics and Other services)

▪Smart Life &
Ecofriendly Systems

▪Automotive Systems

▪High Functional Materials &
Components



▪Information &
Telecommunication Systems

▪Power Systems

▪Social Infrastructure &
Industrial Systems

▪Electronic Systems & Equipment

▪Construction Machinery

* The percentages are based on the new segment classifications effective from FY2014

HITACHI
Inspire the Next

Serving the world with our social innovation business

SOCIAL INNOVATION – IT'S OUR FUTURE

"IT" × "Social infrastructure"

3-1. Total Solution Provider for High Speed Rail

HITACHI
Inspire the Next

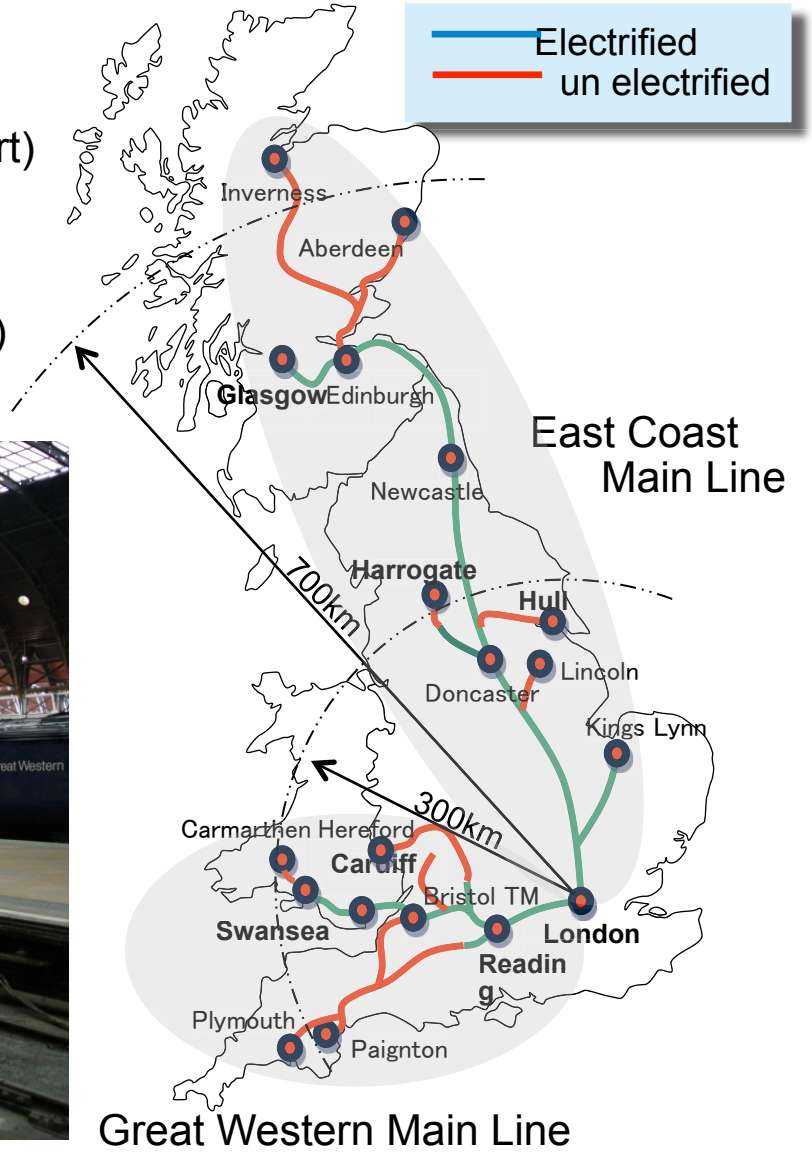
Provide the Total Solution with High Speed Rail

3-2. Intercity Express Program in U.K.

HITACHI
Inspire the Next

Project Overview

- Customer : DfT (UK Department for Transport)
- No. of rolling stocks : Total 866 cars with 27.5 years' maintenance
- Delivery : 2017 - 2019
- Procurement method : PPP (Public Private Partnership)



3-3. Acquisition of AnsaldoBreda & Ansaldo STS

HITACHI
Inspire the Next

FINMECCANICA

HITACHI
Inspire the Next

FOR IMMEDIATE RELEASE

Hitachi to invest in Signalling and Rolling Stock operations of Finmeccanica, positioning for leadership in the global Rail Sector

Tokyo, Japan, and Rome, Italy, 24 February, 2015 --- Hitachi, Ltd. (TSE:6501, "Hitachi" or "Hitachi Group") and Finmeccanica S.p.A. ([FNM.IM,] "Finmeccanica" or "Finmeccanica Group") have announced today that they have signed binding agreements for the sale and purchase of:

- the current business of AnsaldoBreda S.p.A., with the exclusion of some revamping activities and certain residual contracts, and
- the entire interest owned by Finmeccanica in Ansaldo STS S.p.A. ("Ansaldo STS"), equal to approximately 40% of the share capital.

3-4. Honolulu Rail Transit Project

HITACHI
Inspire the Next

Source: Honolulu Rail Transit Project Official Website, City of County of Honolulu

4-1. Hitachi Pump Technologies

HITACHI
Inspire the Next

- In 2004, Hitachi was commissioned to renovate the Edmonston Pumping Plant, one of the world's largest lift pumping plants.
- The plant is the most important pumping infrastructure in the 960km-long waterway connecting northern and Southern California.
- It is an indispensable facility for supplying water from northern California to Los Angels, San Diego, and agricultural areas in Southern California.

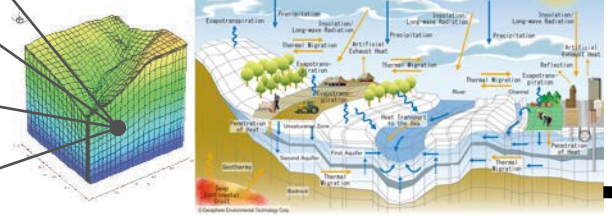
Vertical Multi Stage Centrifugal Turbine Pumps achieved the world's highest level of pumping efficiency while contributing to reductions in CO_2 emissions.

4-2. Water Cycle Simulation Service (WCSS)

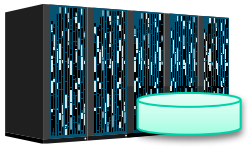
HITACHI
Inspire the Next

Calculating simultaneously the groundwater and surface water and acquiring high accurate analysis corresponds to support the water issues. And contribute planning & build the most appropriate facilities.

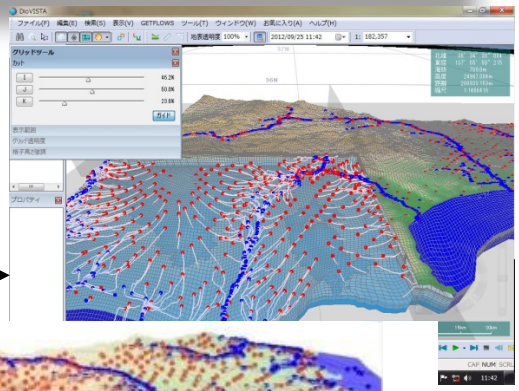
Meteorology
Topography
Land use
Geology



Simulation Model

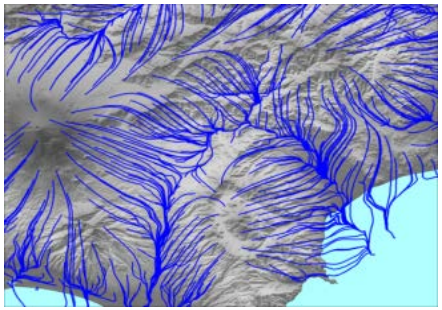


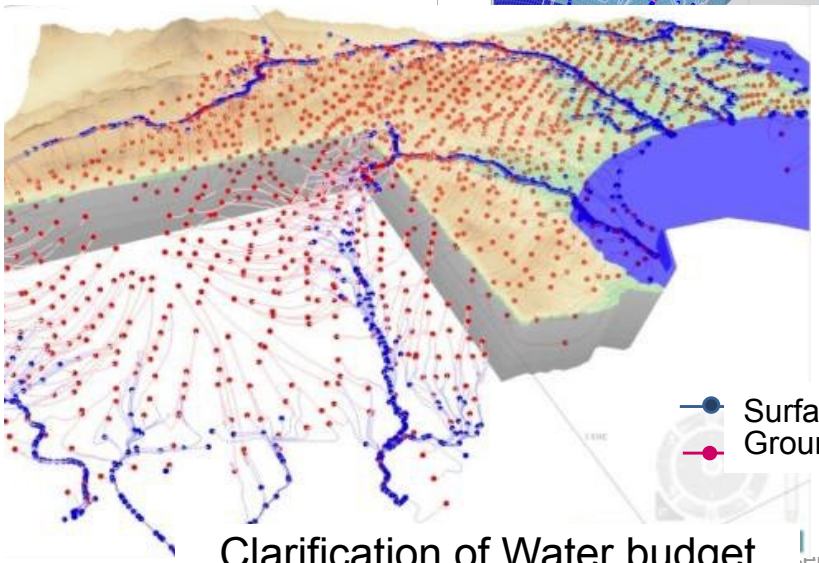
Calculating



Output

Analysis of groundwater flow path and recharged water quantity .





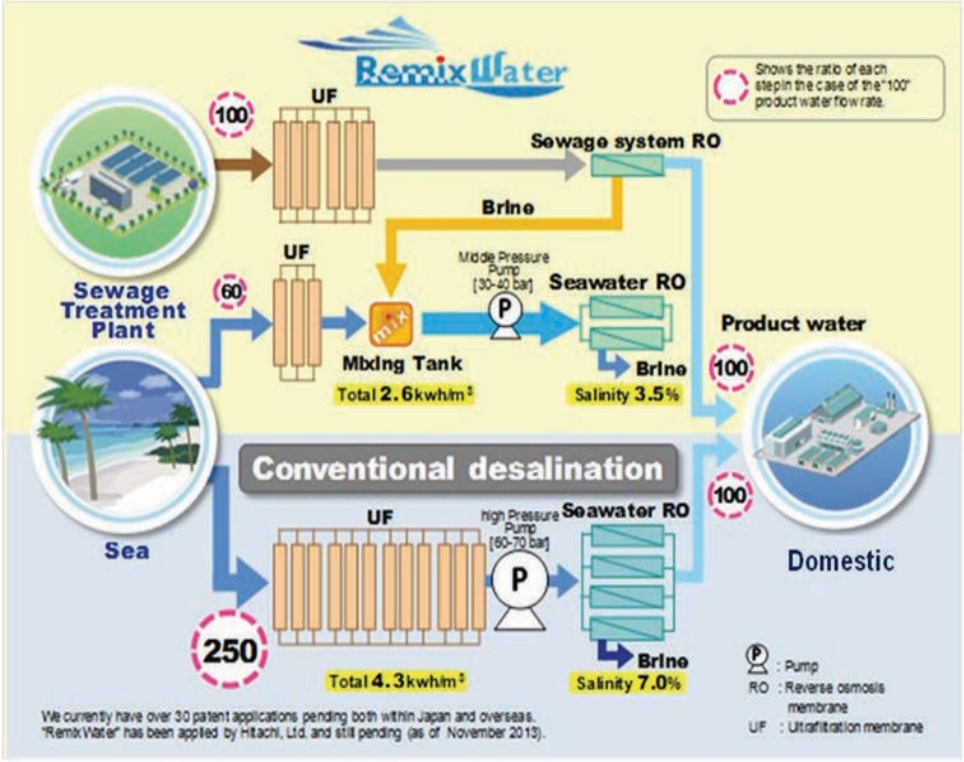
Clarification of Water budget

This Simulation Service supports your decision making for the solution of water issues.

4-3. Outline of “Remix Water”

HITACHI
Inspire the Next

- Having been supported by JICA , newly developed Hitachi’s energy saving and environmental friendly desalination technology “Remix Water System” is on promotion.
- The system consists of seawater desalination process and sewerage reuse process to save energy consumption.



Advantages of “ Remix Water System “

- Saving 40% electricity consumption by middle pressure RO feed pump(2.6kwh/m3).
- Achieved 3.5% salinity level of brine(almost same as seawater level)

Challenges of Conventional Desalination

- Reduction of high electricity consumption caused by high pressure RO feed pump(4.3kwh/m3)
- Lowering 7% salinity level of brine. (two times higher than seawater level)

5. Healthcare

HITACHI
Inspire the Next

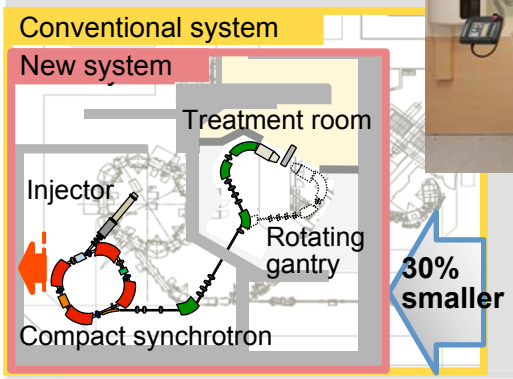
Expanding healthcare business with competitive care cycle service

Treatment

- Wide-range of products effective for cancer treatment, such as X-ray therapy systems and particle beam (proton and heavy particle beam) therapy systems

Particle beam therapy systems

- 11 orders received globally, mainly in Japan and North America
- Spot scanning irradiation and real-time, tumor-tracking radiation
- Compact footprint 30% smaller than in the past *1

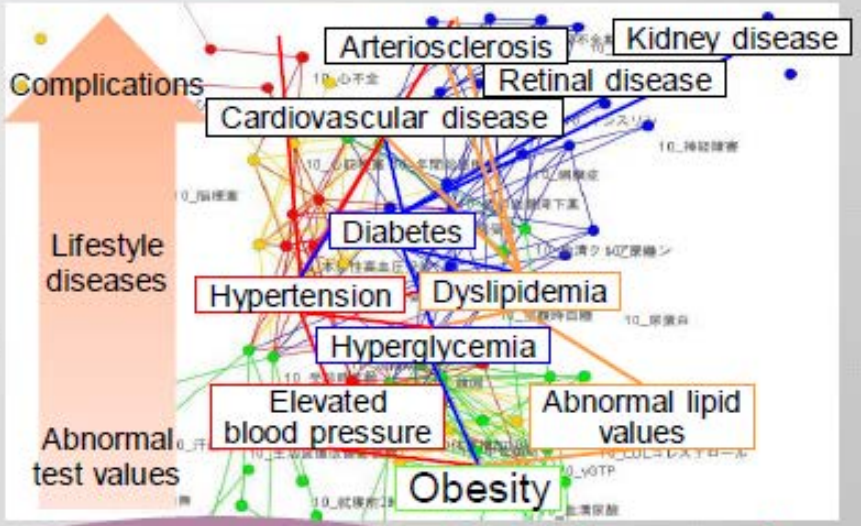


*1 case of Proton beam therapy systems

Prevention & Check-ups

- Pathology transition model using Big Data at Hitachi Health Insurance Society (Hitachi-kenpo)
- Services for predicting total future medical costs for lifestyle diseases

Pathology transition model

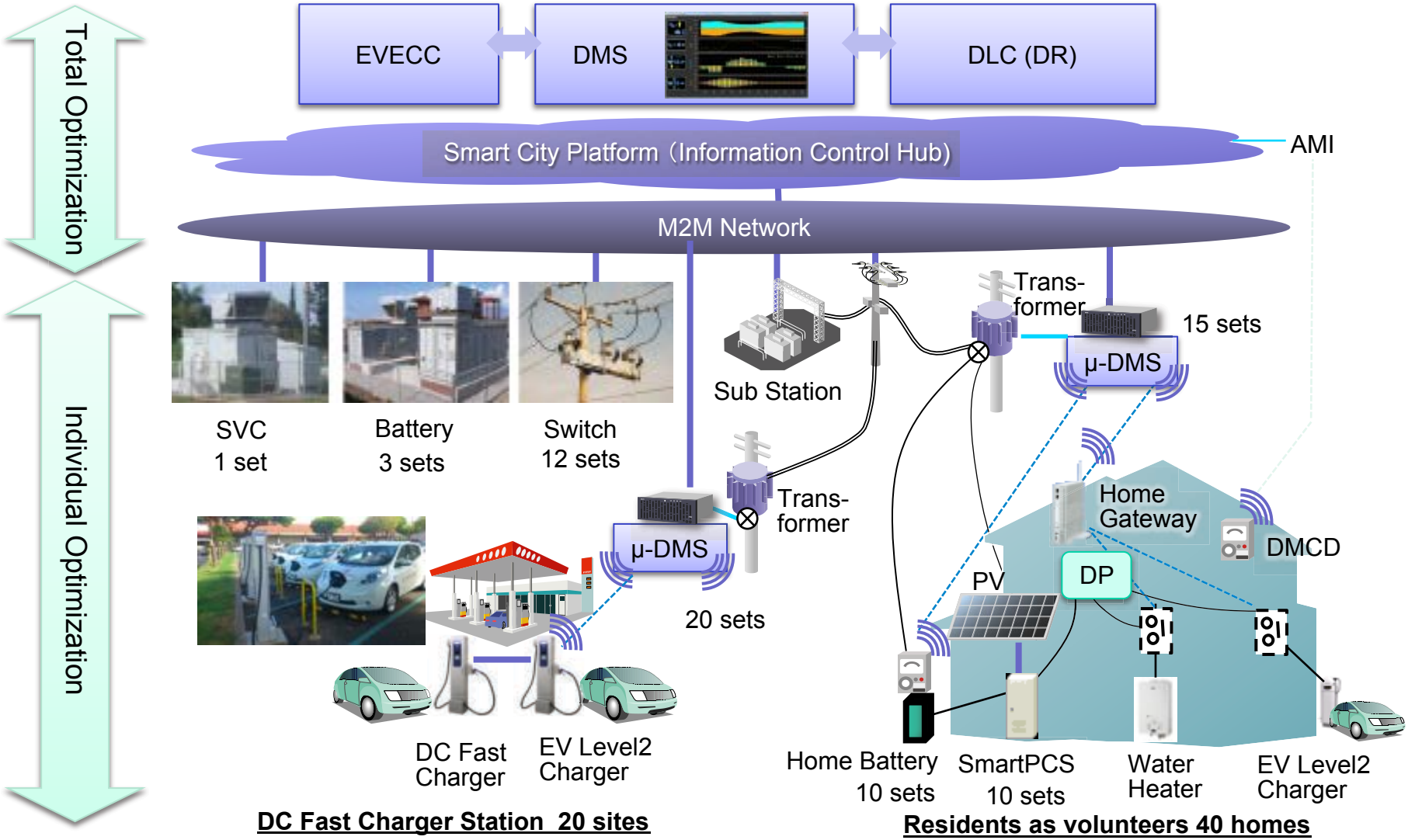


Hitachi-kenpo
Approx. 110,000 members

Prediction error for total medical cost: Under 5% on average

6-1. JUMPSmartMaui: Hierarchical configuration

HITACHI
Inspire the Next



EVECC: EV Energy Control Center
DMS: Distributed Management System
DLC: Direct Load Control
DR: Demand Response

AMI: Advanced Metering Infrastructure
M2M: Machine to Machine
SVC: Static Var Compensator
DMCD: Data Measuring & Communication Device

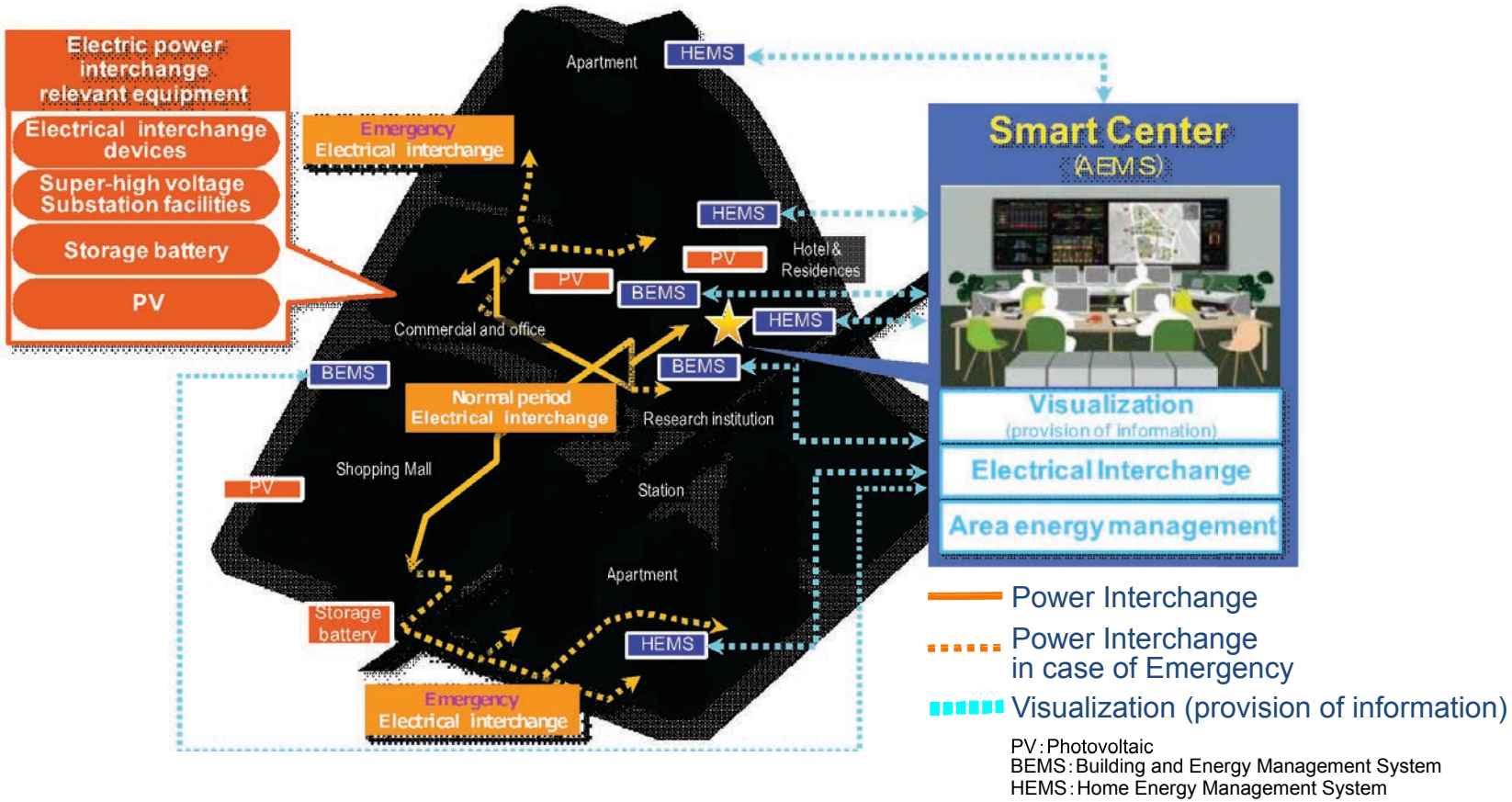
DP: Distribution Panel
PV: Photovoltaic
PCS: Power Conditioning System

6-2. Recent microgrid project: Kashiwa-no-ha

HITACHI
Inspire the Next

"Smart Center" manages regional energy

- Visualize energy consumption such as electricity, water and gas.
- Interchange power supply between different blocks in the town.



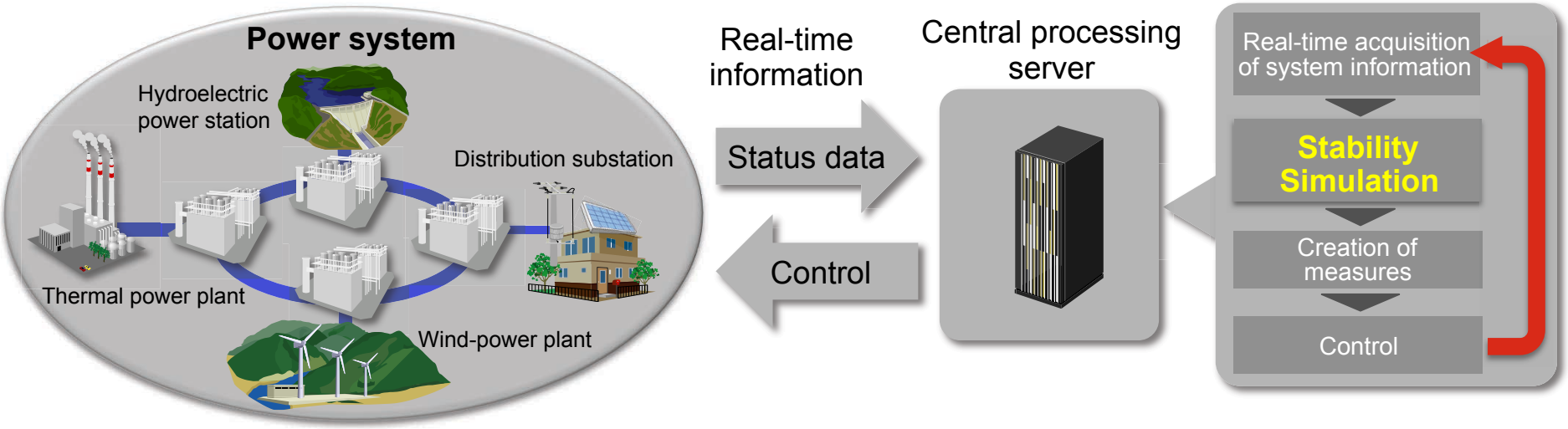
- "Kashiwa-no-Ha Smart Center" has begun operations from May, 2014.
- Aiming to provide new services by utilizing Big Data.

6-3. Grid Stabilization

HITACHI
Inspire the Next

Agreement with Bonneville Power Administration, U.S. Department of Energy to Conduct Demonstration Project for Grid Stabilization

- Verify grid control technology for preventing large outages caused by phenomena such as the flow-on effects of grid faults.
- Use data collected from the grid in real time and investigate possible reliability improvements, economic benefits and viability for practical implementation.

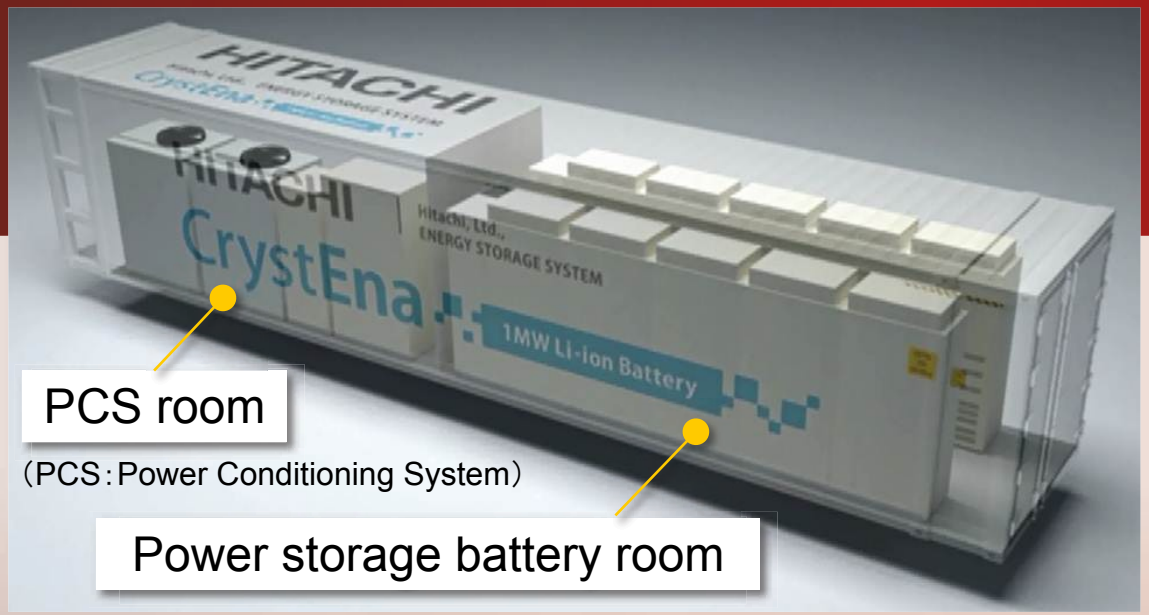


BPA: Bonneville Power Administration

6-4. Wide-Area Grid Stability Solution in the U.S.

HITACHI
Inspire the Next

- High-speed-response Lithium Ion batteries are used to adjust the frequency.
- All-in-one package including a battery, PCS, control device, and air-conditioning facilities reduces the installation period and construction cost.
- System capacity can be increased easily by increasing the number of containers.
- The control software and battery configuration can be changed to suit other applications such as peak shift.



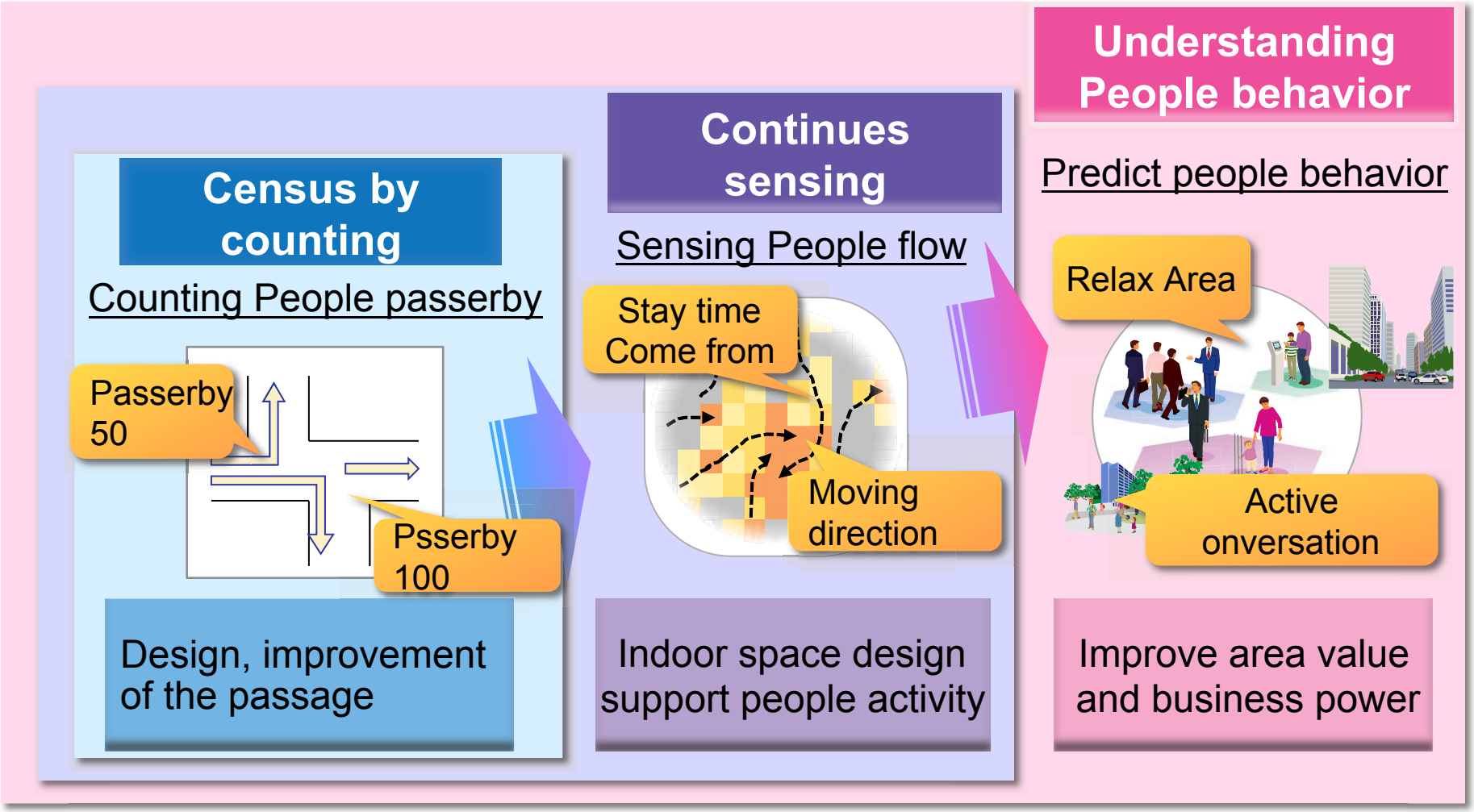
Item	Specifications
System output	±1 MW
PCS	500 kW × 2 units
Battery	450-kWh lithium ion battery
Standard	PCS UL 1741
Expected life	System: 15 years or longer Battery: 10 years or longer
Cooling system	Air cooling
Size	40 ft-class container

"CrystEna" is a registered trademark of Hitachi, Ltd.

6-5. People Behavior Analysis

HITACHI
Inspire the Next

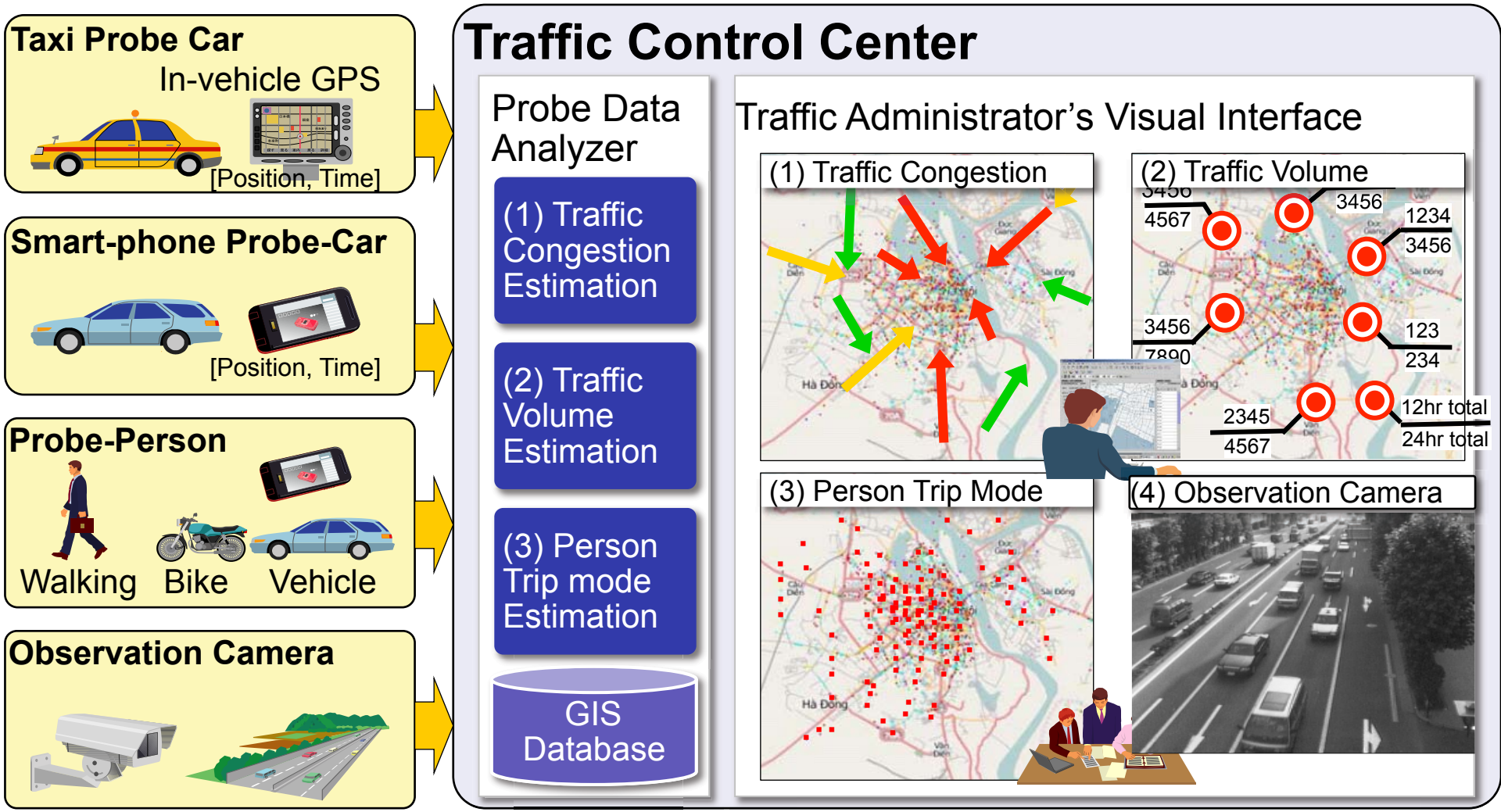
- **Analyze People behavior using advanced sensors**
- **Improve area value and business power using people behavior**



6-6. Application Image of the Traffic Control Center

HITACHI
Inspire the Next

- Gathering traffic information by Probe-Car Data and Probe-Person Data
- Government use these data for traffic operation and city planning



7. Conclusion

HITACHI
Inspire the Next

- Hitachi will contribute to the solution for the challenges of global societies through "Social Innovation" businesses.
- Hitachi will think globally, act locally.
- Hitachi commits Hawaii and Maui, demonstrates our capability.

MAHALO!

HITACHI
Inspire the Next

HITACHI

Inspire the Next