

NexGen IoT Acceleration Lab
(Advance Project Acceleration WG)
IoT Support Committee (Third Meeting)

Agenda

Date: 9:00-10:30, Tuesday, December 6, 2016

Location: Ministry of Economy, Trade and Industry
Main Building B2F Auditorium

Proceedings: Activity Report and Future Action Plans
of NexGen IoT Acceleration Lab

[Handouts]

Material #1: Member List

Material #2: Activity Report and Future Action Plans
of NexGen IoT Acceleration Lab

Reference Material #1: Lists of projects to be supported/selected
through 2nd IoT Lab Selection

Reference Material #2: Implementation State of IoT Lab Demonstration
by Themes

NextGen IoT Acceleration Lab IoT Support Committee Member

<Chairman>

Kazuhiko Toyama Representative Director and CEO,
Industrial Growth Platform, Inc.

<Member>

Fujiyo Ishiguro President and CEO, Netyear Group Corp.
Hiroaki Nakanishi Chairman of the Board, Representative Executive Officer,
Hitachi, Ltd.
Dr. Jun Murai Dean/Professor, Faculty of Environment and
Information Studies, Keio University
Junichi Tsujii Director, Artificial Intelligence Research Center
Makiko Eda Representative Director and President, Intel K.K.
Makoto Takahashi Executive Vice President, Representative Director,
KDDI CORPORATION
Marco Annunziata Chief Economist, General Electric
Masaaki Tanaka Senior Global Advisor, Pricewaterhouse Coopers International
Paul Daugherty Chief Technology Officer, Accenture plc
Peter Fitzgerald Japan Managing Director, Google Inc.
Shinichi Koide Executive Vice President, salesforce.com, inc.
Chairman and CEO, salesforce.com Co., Ltd.
Soichi Kariyazono Chairman, Japan Venture Capital Association
Tadao Nagasaki Representative Director and President,
Amazon Web Services Japan K.K.
Taizo Son President & CEO, Mistletoe, Inc.
Takayuki Hashimoto Vice Chairman, IBM Japan, Ltd.
Takeshi Natsuno Guest Professor, Graduate School of Media and Governance,
Keio University
Taro Shimada Senior Executive Operating Officer & Division lead,
Digital Factory / Process Ind. & Drives Division, Siemens K.K.
Tatsuya Harada Professor, School of Information Science and Technology,
The University of Tokyo
Tony Blevins Vice President, Apple Inc.
Dr. Udo Wolz President and Representative Director, Bosch Corporation
Wayoh(Kazuhiro) Suzuki Managing Director, Strategic Solution and Business,

Wataru Baba	Development, Cisco Systems G.K.
Yasufumi Kanemaru	Vice President, Chief Innovation Officer, SAP Japan Co., Ltd.
Yasuyuki Higuchi	Chief Executive Officer, Future Architect, Inc.
	Chairperson, Microsoft Japan Co., Ltd.

Activity Report and Future Action Plans of NexGen IoT Acceleration Lab (Discussion Issues)

December 6, 2016

Commerce and Information Policy
Bureau

Ministry of Economy, Trade and Industry

Activities of NexGen IoT Acceleration Lab

Activity Report

In order to create new IoT business models, and discover and develop IoT platform creators so that they can serve as a driving force for new growth, the IoT Acceleration Lab aims to

- ① provide short term project support and business matching support,
- ② expand activities to mid and long term project support and regional/global collaboration, and link these activities organically.

Future Action Plans

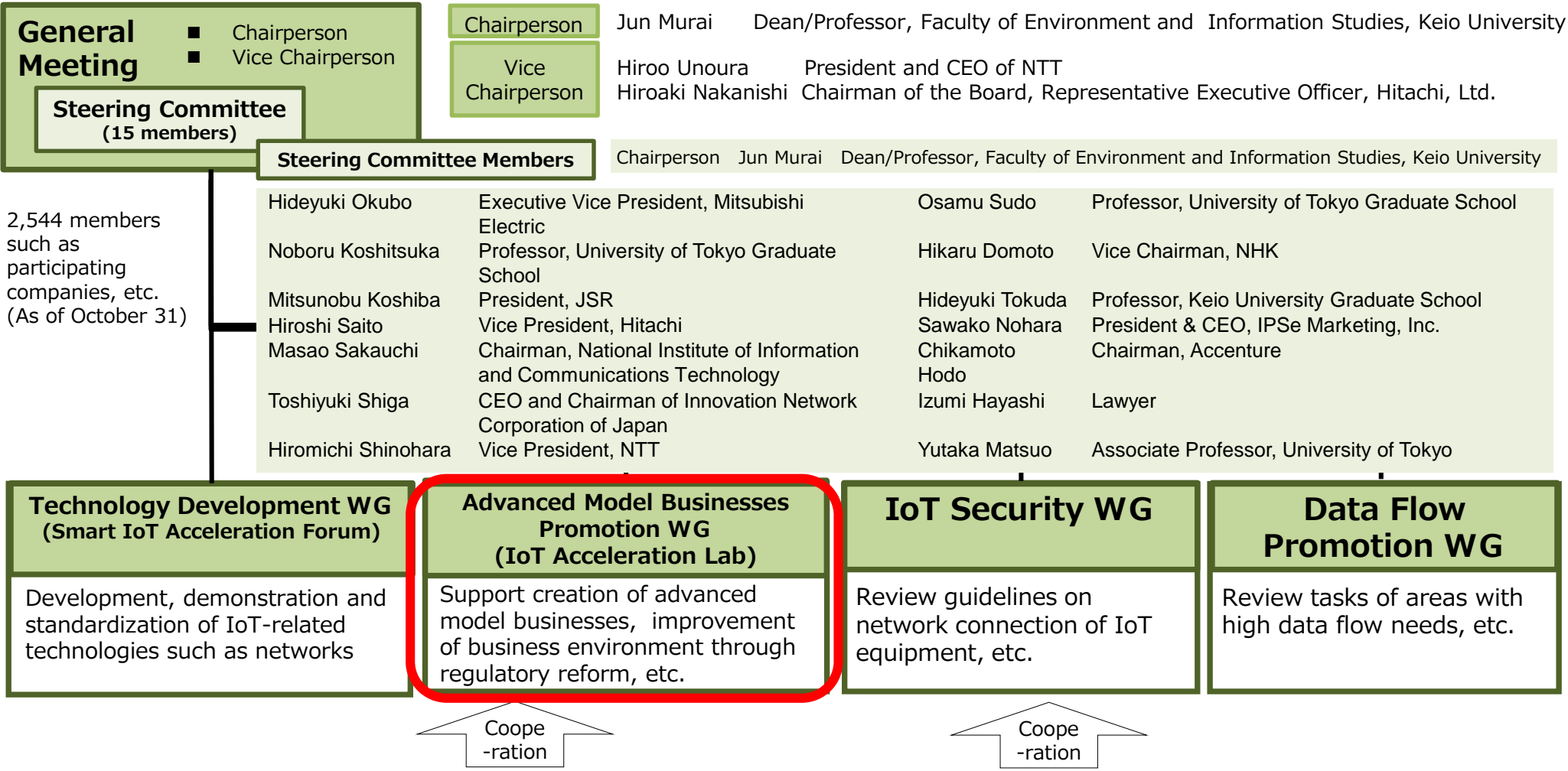
- **How to build platforms for large companies, venture companies, and overseas companies to collaborate with each other.**
- **At this time, determine which areas or what specific solutions for social problems to place importance on.**

<Keyword> ... P30~37

- ◆ Award type support (Task setting)
- ◆ Platform construction
- ◆ Participation of overseas companies
- ◆ Regulatory reform for broad areas
- ◆ Human resource development
- ◆ Linkage with private sector VC support
- ◆ Reinforcement of distribution inside and outside 内外への発信強化

IoT Acceleration Consortium

- In response to the era of IoT/Big Data/AI, the **"IoT Acceleration Consortium"** was established as an organization led by the private sector to **promote use of IoT in industry, government, and academia beyond the framework of individual companies and industries.** (Established on Friday, October 23, 2015)
- Makes proposes on technological development use of IoT, solutions for policy issues, etc. Presently, there are **more than 2500 member companies.**



Ministry of Internal Affairs and Communications, Ministry of Economy, Trade and Industry, etc.

IoT Acceleration Lab

The IoT Acceleration Lab supports the following projects through (1)financial support, (2)regulatory support (review of regulations, establishment of rules), and (3)business matching

- Short-term outstanding projects by individual companies and
- Mid and long-term projects participated by multiple companies

Aiming at social implementation

Presently, there are **more than 2500** member companies.



IoT Acceleration Consortium

Steering Committee (15members)

Details of support

Financial support

Regulatory support

Corporate collaboration support

IoT Lab Demonstration (Test bed demonstration)

→Support mid and long-term thematic projects by multiple companies

IoT Lab Connection (Business matching)

→Organize matching events for companies, research organizations, and municipals.

IoT Lab Selection (IoT Project Selection Meeting)

→Support short-term individual project

Tech. Dev. WG (Smart IoT Acceleration Forum)

Development & demonstration, and standardization of IoT-related technologies such as a network

IoT Acceleration Lab (Advanced Project Acceleration WG)

JIPDEC
Creation of advanced project, Improvement of biz environment such as regulatory reform

Support Committee

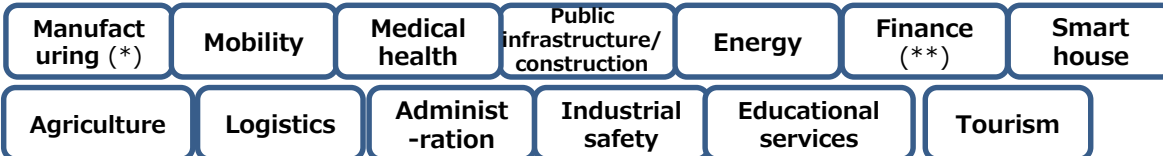
Specific WG

Established according to issues
• **Security WG**
• **Data distribution WG**

- Provide advice, and administrative recommendations on regulations and systems, etc. to IoT projects



[Topics (Draft)]



* Work closely with Robot Revolution initiative

**Work closely with Study Group on FinTech

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Activities of IoT Acceleration Lab (Outline)

- In order to create new IoT business models, and discover and develop IoT platform creators so that they can serve as a driving force for new growth, the IoT Acceleration Lab aims to provide short term project support and business matching support, and expand activities to mid and long term project support and regional/global collaboration, and link these activities organically.

Financial support

Regulatory reform, standardization, etc.

Corporate collaboration support

① IoT Lab Selection (IoT Project Selection Meeting)

Scout and select advanced IoT projects to provide financial support, mentor support, deregulation support Sun



② IoT Lab Connection (Solutions/matching)

Until now, established matches in the areas of tourism, manufacturing, healthcare (medical care and health), sports, logistics, distribution, infrastructure, smart-homes, mobility.



②-1 Big Data Analysis Contest



Competition for developing algorithms online utilizing tourism big data provided by companies

②-2 Collaboration with CEATEC



Exhibition by selection winners, Connection, etc.

③ IoT Lab Demonstration (Test bed demonstration)

Mid and long term demonstration involving multiple companies according to theme

④ Local IoT Acceleration Lab

Select regional efforts for creating IoT business as "Local IoT Acceleration Labs", and carry out matching, projects (product development, events, etc.), demonstration tests, etc. at the regional level. At present 29 regions have been selected.



①、②、②-1

...Started from 2015

③~⑤、②-2

...Started from 2016

⑤ IoT Lab Global Connection (Global IoT Acceleration Lab)

Aim at matching of overseas companies and Lab members, and collaborations with other global organizations.



Short-term projects

Mid & long term PJ

Regional

Global

Activities and Future Schedule

① IoT Lab Selection

February 7 1st IoT Project Selection Meeting
 July 13 2nd IoT Project Selection Meeting ★1
March 13 3rd IoT Project Selection Meeting ★3

② IoT Lab Connection

January 28 1st matching event [Themes: Factory and tourism]
 July 31 2nd matching event [Themes: Healthcare, sports, logistics, distribution and infrastructure] ★1
 October 5 3rd matching event [Theme: Smarthome and mobility] ★2
March 13 4th matching event [Theme: Fintech, education and agriculture] ★3

[Big Data Analysis Contest]

February 7 1st Award-giving Ceremony
 October 5 2nd Award-giving Ceremony ★2

[Held jointly with CEATEC]

October 4-7 Exhibition by selection winners ★2

③ IoT Lab Demonstration

[FY2017 Demonstration]

May 31 Deadline for application
 From June FS (feasibility study) survey
 From April Start demonstration

[FY2016 Demonstration]

From April Start public invitation and demonstration

④ Local IoT Acceleration Labs

July 31 1st Selection
 March 13 2nd Selection ★3

⑤ IoT Lab Global Connection

October 4-7 1st matching [ASEAN, India, Israel] ★2
March 13 2nd matching ★3

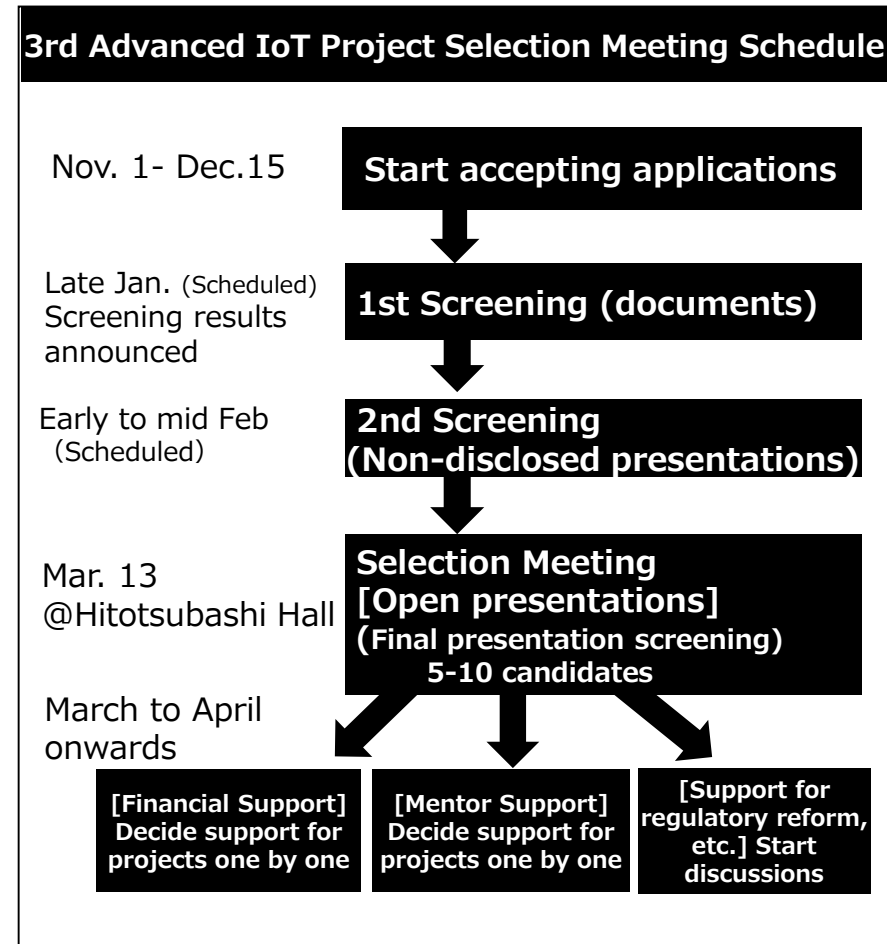
※Events marked with the same numbers (★1, ★2, ★3) are held at the same time

- Scout and select advanced IoT projects to be supported such as **①Financing, ②Mentor dispatching, ③ Deregulation and standardization**, jointly by government agencies, financial institutions, venture capitals, etc.
- **Select advanced projects from the perspectives of growth, leadership, repercussion, social development, etc. Selected and awarded during the “3rd IoT Project Selection Meeting”** held on March 13.
- Changes made from the 1st and 2nd meetings were **new horizontal platform framework and regional economic revitalization framework were set.**

Target Groups and Items Evaluated	<p>Target groups: All advanced projects using technologies such as the IoT (All types of businesses, including large enterprises, small and medium enterprises (SMEs), and individuals)</p> <p>Items evaluated: The following are evaluated (1) Growth potential (2) Openness (3) Sociality (4) Feasibility of realization</p>
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Support Details	<p>The following three types of support are available (multiple types allowed)</p> <p>(1) Financial support (2) Continuous, one-on-one support from mentors (3) Support related to regulatory reform and standardization (Support in completing procedures for use of systems such as the System to Remove Gray Zone Areas and the System of Special Arrangements for Corporate Field Tests, research and demonstrations for regulatory reform and standardization, etc.)</p>
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Sharing Application Content	<p>If an applicant desires, it is possible to share the contents of one’s application with</p> <p>(1) participating support organizations and (2) Lab members.</p> <p>*Entities which are not selected for the final selection can transmit the details of their projects to supporting institutions, Lab member companies, etc.</p>
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IoT Lab Selection Awarded Projects

The first and second Lab selections gathered a total of **405** applications, from which **29 finalists were selected**. Presentations open to the public were given by the finalists and outstanding projects were awarded prizes. Support for finalists have also started. **For details of projects, refer to Reference Material #1**

Funding support : A total of 16 companies applying for NEDO/IPA support (NEDO: 8 companies, IPA: 8 companies) have been selected for funding. Projects to receive funding support by other participating support organizations are also gradually being decided..

Mentor support : Four companies have already been selected. Another four are currently being screened for selection.

Regulatory support, etc. : Clarification of deregulations based on the system for resolving gray zones and revision of laws and regulations have started for four companies.

★Grand Prize★ UniFa Corporation

-Supporting the digitalization of services for monitoring the premises of nursery schools-
Activities at nursery schools are supported using smartphones/sensors/robots, etc. So that even inexperienced nursery school teachers are able to take care of children safely. Specifically, the company is currently developing services such as the **digitalization of handwritten documents which tend to pose as huge work burden** (Communication notebook/afternoon nap check table, temperature sheet, etc.) **and support for monitoring of children during their afternoon naps which have the risks of fatal accidents** (using video camera/bed sensor).



Progress of project

- Selected for IPA fund/mentor support
- Resolves gray zones of Child Welfare Act

★Second Prize★ Phoenix Solution Co., Ltd.

-World's-first RFID tag that is readable even through the metal to which it is attached-
Phoenix has developed **special metal tags which can be read using normal readers, especially behind metals and in laminated states**. The company aims to apply it to supply chains for improving work efficiency and reducing management costs in industries using high volume of metallic materials such as manufacturing, construction, lease, distribution, infrastructure and facilities, etc., and also further expand uses through linkage with sensors, drones, etc. This is the first technology of its kind in the world. By developing various types of tags, the companies is aiming at extensive dissemination around the world, and realizing the IoT of metal products.



Progress of project

- NEDO funding decided (Compact metal RFID)

★Second Prize★ Zenrin Co., Ltd.

-Demonstration project concerning information on three-dimensional aerial maps toward the realization of safe drone flight over city areas-
The company is aiming to develop an **automatic drone flying support system** as an infrastructure for realizing **"contact flight in manned regions such as city areas, etc."** as the ultimate usage of drones. (Level 4)

In this project, the company aims to realize **"3D maps of the sky"** including recommended flight routes and obstacles, as well as develop technologies enabling safe drone flight in manned regions by the real-time tracking of drones deviated from their routes by **gathering and analyzing drone probe information**.



Progress of project

- NEDO funding decided (3D map construction technology)

★Special Jury Prize★ exMedio Inc.

-Technology for recognizing ophthalmic disorders using images and data from medical interviews-
For non-ophthalmic disorders, **develop AI enabling automatic identification and diagnostic support of eye diseases using images and medical examination data, and mount to mobile apps "Memiru chan"**.



Progress of project

- Selected for IPA fund/mentor support

- New business has been developed through the projects selected in the 1st Lab Selection.

★Grand Prize★ Liquid Inc.

Project support

- NEDO Funding support (Ikebukuro Project)
- Resolves gray zones of Hotel and Ryokan Management Law



-Personal authentication of tourists to Japan using fingerprint. (For settling payments, personal identification)-

Business Development

- Has started services at tourist resorts such as Yugawara in collaborations with JTB Corporate Sales..



★Second Prize★ Aba Inc.

Project support

- Mentor support



-Excretion detection seat Lifi for reducing nursing burden-

Business Development

- Through business collaborations, Paramount Bed is manufacturing and selling Lifi.



★Second Prize★ Routrek Networks, Inc.

Project support

- IPA funding support (Outdoor cultivation algorithms)



-Agriculture system which optimally controls drop culture water and fertilizers-

Business Development

- Tied up with Israel's Netafim to operate Zero Agree in Vietnam.
- Has agreed to capital tie-up with Oisix

★Special Jury Prize★ EverySense Japan, Inc.

Project support

- Establishment of rules (Authorization of agreements on data mediation business at Data Distribution Promotion WG)



-Aiming to be platform creators of data transactions using systems mediating transactions between corporate big data and individual data-

Business Development

- Launched IoT information distribution market "EverySense"

ZEROBILLBANK

Has tied up with MUFG and Kabu.com Securities to introduce corporate coin "OOIRI" mainly in the Otemachi area.

Strobo

Developed home IoT device window sensor "leafee mag". Carrying out cloud funding.

IoT Lab Selection List of Finalists

1st Selection Finalists

Applicant	Name of Project
★Grand Prize★ Liquid. Inc.	Personal authentication of foreign tourists by fingerprints (payment verification)
★Second Prize★ Aba Inc.	Excretion detection sheet "Lifi" to decrease the burden of nursing
★Second Prize★ Routrek Networks, Inc.	Agricultural system optimizing control of water and fertilizer for drip irrigation
★Special Jury Prize★ EverySense Japan, Inc.	Commercialization of data exchange market in Japan and US
OMRON Corporation	Build trading system for real time sensor data distribution
ZEROBILLBANK LTD	Convert individual ideas and actions to visible values (coin) utilizing blockchain
Hottolink, Inc.	To be a global player of SNS big data from Japan
Strobo Inc.	Smart chair visualizing body conditions by pressure sensors
BSIZE Inc.	Realize new communication business for IoT
AFRO Co., Ltd.	Business optimization of taxi using smartphone
Social Impact Research Co., Ltd.	Automated system that can be used by anyone to provide asset management advise for achieving profits and social development
Graduate School of Information Science and Technology, Hokkaido University	Realize individual medical services utilizing health data
Cerevo Inc.	Realize inexpensive home security
SONY Corporation	Realize display devices suited to the IoT era
Wireless Power Transfer Consortium for Practical Application (WiPoT)	Practical Applications(WiPoT) Practical demonstration of long-distance microwave radio transmission system
Acadia Systems Inc.	Individual exercise program based on physical conditions

2nd Selection Finalists

Applicant	Project
★Grand Prize★ UniFa Corporation	Supporting the digitalization of services for monitoring the premises of nursery schools
★Second Prize★ Phoenix Solution Co., Ltd.	World's-first RFID tag that is readable even through the metal to which it is attached
★Second Prize★ Zenrin Co., Ltd.	Demonstration project concerning information on three-dimensional aerial maps toward the realization of safe drone flight over city areas
★Special Jury Prize★ exMedio Inc.	Technology for recognizing ophthalmic disorders using images and data from medical interviews
Orylab.Inc.	Realize a community for conveying our existence using avatar robot OriHime
GNN Machinery Japan	Raw concrete quality continuous management system (Smart agitator)
DeNa.Co.Ltd.	Realize personal shopper service for reinforcing regional consumption eco system
smart-FOA	IoT age data flow information infrastructure "FOA system" for boosting the manufacturing industry in Japan
Konica Minolta, Inc.	Home medical care support system by non-contact respiratory sensing.
Aerosense Inc.	Realize safe, simple, and high precision 3D modeling operations
JVC KENWOOD	Build health management and remote diagnosis service by self recording breathing sounds
Space Market, Inc.	Realize regional revitalization by space sharing business and create micro-entrepreneurs
ABEJA	Research and development of data system capable of comprehensively managing complicated data for IoT society

Regulation support on 4 cases developed through IoT Lab Selection

Liquid. Inc.

-Personal authentication of tourists to Japan using fingerprint. (For settling payments, personal identification) -

Development of biometric authentication system capable of personal identification just from fingerprints. By categorizing fingerprints using artificial intelligence according to characteristics, the system is able to realize 1 million authentications in just 0.05 seconds. Currently, this takes about several hundred seconds. Authentication using two fingers reduces the risks of mis-authentication by 1/1 trillion. Already, the company carries out verifications of personal identification and payment settlement, etc. using fingerprints only at hotels and shops (no passport and credit cards needed) for tourists to Japan by working together with leading hotels, etc. in this project.



Clarified how to use the fingerprint authentication system developed by Liquid for checking passports at check-in.

Resolved gray zone !

AFRO Co., Ltd.

-Enhancement of work efficiency of taxis using smartphones-

Development of application mounting taxi meter functions to smartphone. Application connected to the car for enhancing driving and work efficiency by not only acquiring information on driving distance and calculating taxi fares, but also automating daily reporting work normally done by hand (taxi usage information, and immediate tracking of the service status of taxis (place, whether customer on board, etc.)). These sophisticated functions can be realized at much lower costs than building a special device.



Clarified the specific requirements for "electronic sealing" of taxi meters.

Resolved gray zone !

UniFa Corporation

-Supporting the digitalization of services for monitoring the premises of nursery schools -

The company is currently developing services such as the digitalization of handwritten documents which tend to pose as huge work burden (Communication notebook/afternoon nap check table, temperature sheet, etc.) and support for monitoring of children during their afternoon naps which have the risks of fatal accidents (using video camera/bed sensor). Activities at nursery schools are supported using smartphones/sensors/robots, etc. So that even inexperienced nursery school teachers are able to take care of children safely.



Clarified that digitalization of "account books" based on the Child Welfare Act is possible.

Resolved gray zone !

SONY Corporation

devices suitable for IoT age-

Aim to commercialize laser type display devices which do not require focusing (focus free) and considered to be an effective display device for the IoT community, and promote its spread in the IoT age.

-Development/commercialization of display

Partially revised ministerial ordinances related to Consumer Product Safety Act

IoT Lab Connection

Matching Events for Promotion of Corporate Collaborations (Solutions Matching)

- The **matching event** was held **for enterprises aiming to create new business models** such as member companies with seeds or needs, and associations and municipalities to meet others with related **business models, technologies, and services** to promote the creation of businesses leading to ideas required for realizing the business models and applying them in society.
- The theme of the first event (January) was (1)Tourism (2)Manufacturing. That of the second event (July) was **(1)Healthcare (medical care/health) and Sports, and (2)Logistics, distribution and infrastructure**. That of the third (October) was (1)Smart homes (2)Mobility and this event was held at the CEATEC hall.

Details of 2nd event

Date: Sunday, July 31, 2016, 10:30-16:45

Venue: Tokyo Hitotsubashi Hall (Hitotsubashi University)

Co-hosts: IoT Acceleration Lab and METI

Support entity: Ministry of Land, Infrastructure, Transport and Tourism / Japan Sports Agency

Participating municipalities: Tokyo, Chiba Pref. Chiba City, Kanagawa Pref. Kawasaki City, Nagano Pref. Matsumoto City, Mie Pref. Hyogo Pref. Kobe City, Shimane Pref., Fukuoka Pref. Fukuoka City

① Business Matching (1:1 Matching)



Based on the needs and seeds submitted by the participants society, in advance, **a list of matching companies was created prior to the event. 15-minute private sessions** were held on the day.

Approx. 183 companies/organizations participated.
Approx. 518 matches were carried out

② Presentation Matching (1:N Matching)



Popular matching companies, etc. **presented** their seeds and needs to the general public. **Meetings were held with interested enterprises at the venue.**

7 government agencies and companies presented
Approx. 300 participants

③ Municipalities Booth Matching (Municipalities : N Matching)



Booths were set up by municipalities. Companies/organizations interested in municipality's seeds and needs held meetings at the venue.

8 municipalities set up booths

IoT Lab Connection

Matching Events for Promoting Corporate Collaborations (Solutions Matching)

[1st event] Thursday, January 28, 2016 @Tokyo Hitotsubashi Hall (Hitotsubashi University)

Theme: Tourism, manufacturing (Smart factories)

About 190 companies/organizations participated, and about 550 matchings were carried out.

(Average of questionnaire results)

No. of companies who interchanged with each other: 10.6 companies

No. of companies planning to continue interchange: 3.6 companies

[2nd event] Sunday, July 31 @Tokyo Hitotsubashi Hall (Hitotsubashi University)

Theme: Healthcare (medical care/health), sports, distribution, logistics, infrastructure

About 183 companies/organizations participated, and about 518 matchings were carried out.

(Average of questionnaire results)

No. of companies who interchanged with each other: 6.8 companies

No. of companies planning to continue interchange: 3.4 companies

[3rd event] Tuesday, October 4, 2016 @CEATEC JAPAN 2016

Theme: Smart home, mobility

About 135 companies/organizations participated, and about 454 matchings were carried out.

(Average of questionnaire results)

No. of companies who interchanged with each other: 6.8 companies

No. of companies planning to continue interchange: 3.0 companies

→ Total for 3 events

About 508 (375 when overlaps are excluded) companies/organizations participated, and about 1,522 matchings were carried out.

(Average of questionnaire results)

No. of companies who interchanged with each other: 8.1 companies

No. of companies planning to continue interchange: 3.3 companies

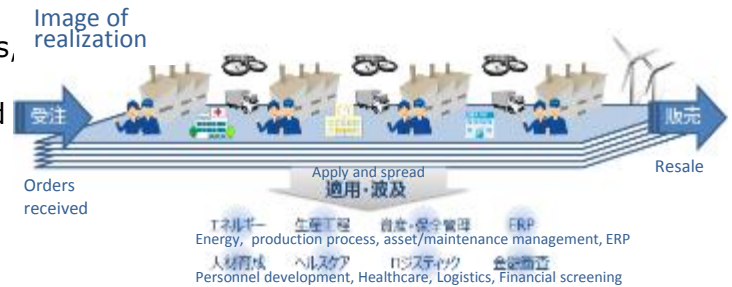
According to the information from the 36 companies responding to the secretariat's survey, about 16 collaborative partnerships were formed.

Lab member companies who have never participated in matching events to date 1,779/2,123 companies
(Approx. 83.8%)

Results of Past IoT Lab Connection

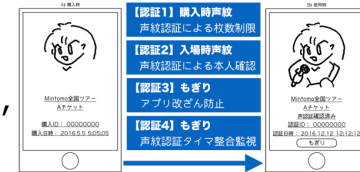
■ NTT DoCoMo × Niigata Institute of Technology × Japan GE × Oki Electric ※Starting point of matching is NTT DoCoMo and Japan GE

NTT DoCoMo which proactively participates in collaborations between different industries, Niigata Institute of Technology which has a strong network with regional manufacturing companies, Japan GE which has an IoT platform for analyzing sensor data of plants, and Oki Electric which has wireless units and modules have jointly launched “Smart Factory City in Kashiwazaki” in the aim to optimize the whole supply chain by sharing data exceeding the realms of companies. As part of efforts to promote the understanding of these activities, the companies plan to start study groups for local companies.



■ Mintomo x Nuance Communications Japan

Collaboration between Mintomo, a venture company developing apps strong in gamification, and Nuance, developing voice and fingerprint recognition technologies, making use of the respective characteristics of the two companies. To prevent the reselling of tickets which is now a social problem, they are developing a digital ticket “KOE-PASS” which allows use only by the purchaser by voice recognition.



Others...

■ Software development ventures × companies owning device

Started reviews aiming to combine data gathered from apps and from different devices to enhance the forecast accuracy of applications.

■ Facilities related companies × leading Internet companies

Started reviews aiming to create new values anticipating future changes in social structures.

■ Device manufacturers × leading companies

Started reviews leading to demonstration tests in the fields of leading companies using new devices developed.

■ Companies owning sensors × leading manufacturers

Started reviews towards new product development using sensors.

In addition to the above, relations are continuing amongst many companies.

IoT Lab Connection Big Data Analysis Contest

Algorithm development contests where participants compete over the analysis of big data provided by companies, etc. and the accuracy of data analysis using this data are held online to enable ease of participation. Participants are invited widely from the public including students. By analyzing the challenges and data of industry, the contest aims to discover outstanding data scientists, match them with data providers, etc., and at personnel development. The first contest (December 2015 to January) was themed on tourism and aimed at the development of algorithms for predicting the number of tourists. The second content was themed on **distribution and retail (development of sales forecast algorithm/new product development).**

〈Outline of 2nd Contest〉

Co-organizers: IoT Acceleration Lab, Ministry of Economy, Trade and Industry (METI)

Supporting organizations: Ministry of Education, Culture, Sports, Science and Technology (MEXT), National Institute of Advanced Industrial Science and Technology (AIST), Research Organization of Information and Systems (ROIS)

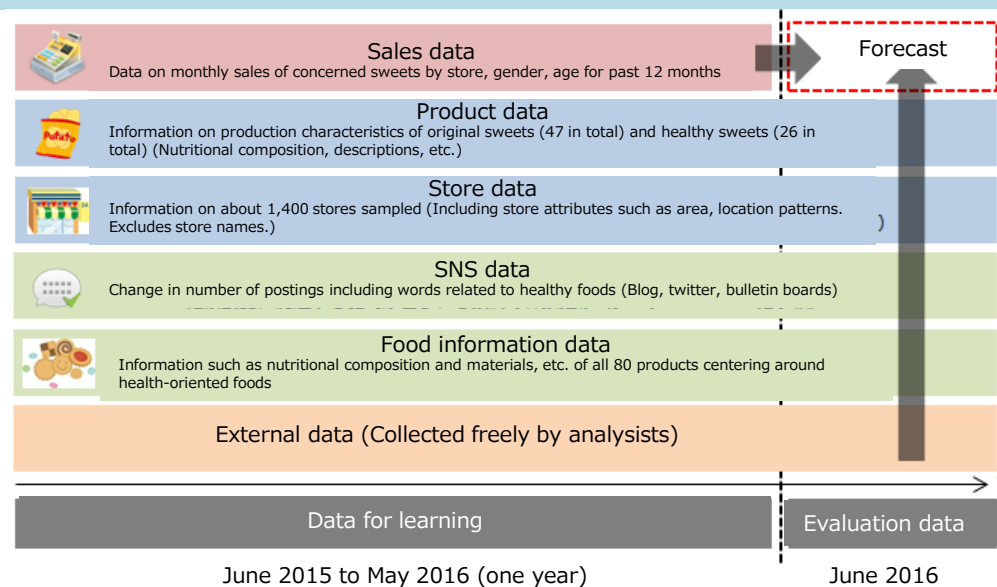
Design/operations : Opt Holdings

Date : July 7, 2016 to September 1, 2016

No. of participants : **150**

No. of applications : **2,226**

(Multiple applications allowed)



[Sales forecast]

- Compete over precision to forecast sales data of the latest month from data

[New product development]

- Compete over product development proposals for new sweets liked by men in 30's from data.

→ University students and working adults won the prizes



- Big data analysis is participated not only by universities, but by many company employees. Personnel specializing in machine learning make up about 30% of all participants.
- Participants are able to experience data analysis using raw data which is directly linked actual business. The contest has received many favorable comments as a place for practicing data analysis.

Attributes of applicants

Out of the **150** applicants,

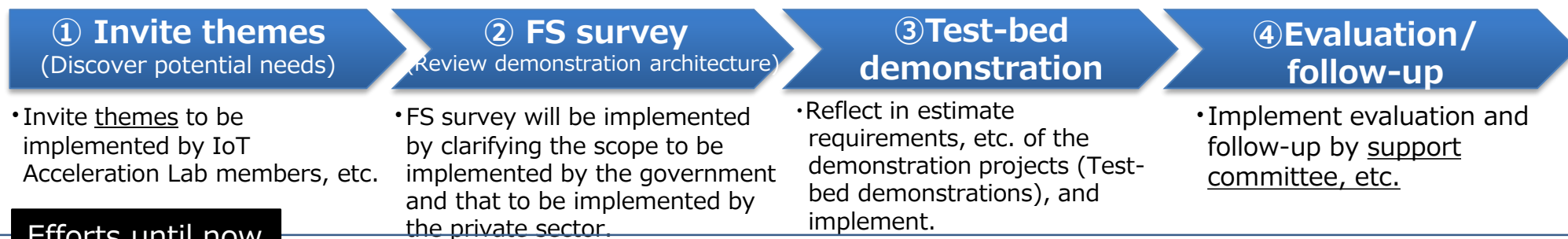
- Less than 50% are in their **20**'s
- 60% are **full-time employees**, of which more than 60% are **IT companies**
- 57% are **university graduates**
- Field of specialty includes **machine learning** 30%, **data mining** 22%, **time series analysis** 10%

Voices of applicants

- I was able to experience actual business issues and learn the importance of practice than theory and logic. I truly learnt a lot.
- Through this contest, I had the opportunity to observe people buying sweets in my neighborhood, conduct questionnaire surveys on my friends, and so on. Because the themes were related to everyday life, data processing and the results obtained were all very interesting. The whole work was very fun.
- I hope to continue participating in this event. It would be nice if there are more of such opportunities in the future.

- **IoT Lab Demonstration** is **demonstration project by multiple companies** aiming at mid and long term social implementation. They aim to form a platform for sharing and using data exceeding the realms of office, company, and time by identifying competitive areas and collaborative areas. **For details of projects, refer to Reference Material #2.**

Flow of IoT Lab Demonstration



Efforts until now

• Themes were invited between April 28 and May 31, 2016, and **25 were proposed.**

(Proposed themes)	
•Infrastructure/construction	6
•Manufacturing	4
•Medical/healthcare	4
•Logistics/distribution	3
•Smart homes	3
•Agriculture	2
•Industrial safety	1
•Tourism	1
•Administration	1

• Based on the proposals, **FS surveys will be conducted on 13 themes.**

(Examples of themes)	
•Smart home	
•Aircraft	
•Security	
•Distribution	
•Development of mines, etc.	

• Reflect in estimate requirements, etc. of the demonstration projects (Test-bed demonstrations), and implement.

• In addition to themes that have been implemented so far, demonstrations related to the **smartphone and aircraft areas, etc.** will be carried out.

(Ongoing demonstration themes)	
• Manufacturing (Smart factories)	
• Social infrastructures	
• Industrial safety	
• Administration	
• Medical/health care	
• Distribution/space	
• Service	

• Implement evaluation and follow-up by support committee, etc.

• A responsible support committee will be set up for each theme. In the future, the committee will hold meetings twice a year to report the state of implementation, and comments from responsible committee members will be reflected in future efforts.
• Responsible AI center researchers will be appointed for each theme. Comments on use of AI will be reflected in future efforts, etc.

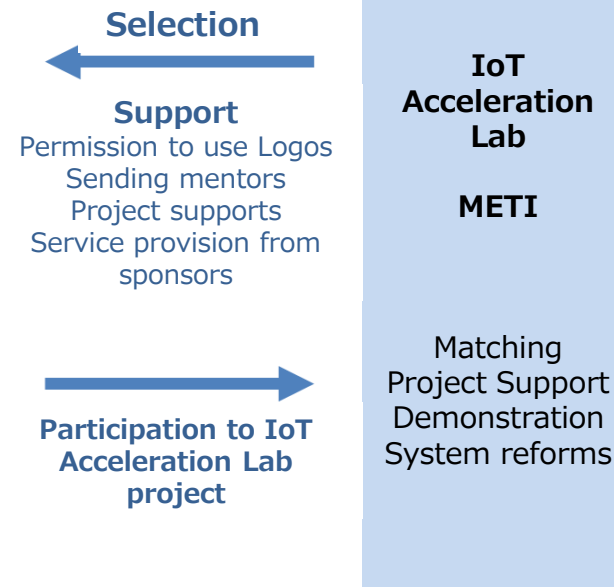
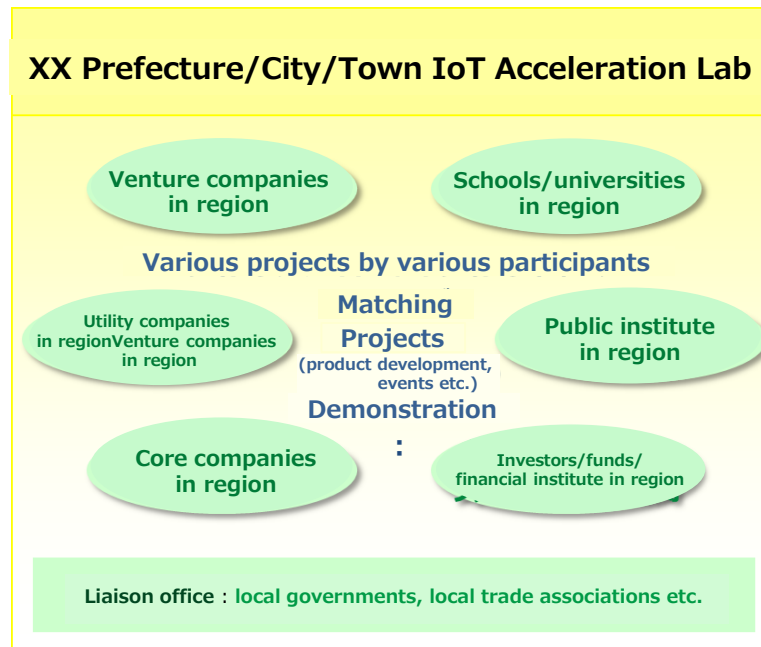
Through the demonstrations, the Japanese government is ① **Reassessing regulations according to new technologies** such as IoT, and ② establishing minimal rules for companies to follow, such as standardized data formats, equipment ID management and authentication rules.



● Regional efforts to promote IoT business as local **IoT Acceleration Lab**.

Selection Criteria (3 criteria for selection as Local IoT Acceleration Labs)

1. Regionality
2. Enthusiasm and continuity of municipalities (Scenario for independence, key persons)
3. Sense of unity with diversity



Support for Regional IoT Acceleration Lab

1. Grant rights to use "Local IoT Acceleration Lab" mark
2. PR to IoT Acceleration Lab members in mail magazines, Lab events, etc.
3. Dispatch mentors contributing to realizing/developing regional projects/companies, etc.

* Review support by cooperating companies and linkage with various grant systems according to business progress.

Latest Schedule

Jun. 10 Start invitation to apply
(Regions submit to METI)

(Note 1) No deadlines are set for the invitations. Applications are accepted and screened all year long.

(Note 2) After selection, mentors and cooperating companies are gathered..

Jul. 31 1st Selection (18 prefectures 11 cities/towns)

Mar. 13 2nd Selection

First Selection of Applicants for Local IoT Acceleration Labs

- 29 regions were selected as “Local IoT Acceleration Lab”. In the future, these local IoT Acceleration Labs and the IoT Acceleration Lab will work together to support and encourage IoT efforts around the country through the dispatch of mentors, etc.



(Selected 29 regions)

Sapporo City, Hokkaido Prefecture / Kushiro City, Hokkaido Prefecture / Shihoro Town, Hokkaido Prefecture
 Miyagi Prefecture / Aizuwakamatsu City, Fukushima Prefecture / Ibaraki Prefecture / Toyama Prefecture
 Ishikawa Prefecture / Kaga City, Ishikawa Prefecture / Fukui Prefecture / Ina City, Nagano Prefecture
 Gifu Prefecture / Shizuoka Prefecture / Aichi Prefecture / Mie Prefecture / Kyoto City, Kyoto Prefecture
 Osaka City, Osaka Prefecture / Kobe City, Hyogo Prefecture / Nara Prefecture / Wakayama Prefecture
 Shimane Prefecture / Hiroshima Prefecture / Kochi Prefecture / Fukuoka Prefecture
 Kitakyushu City, Fukuoka Prefecture / Fukuoka City, Fukuoka Prefecture / Kumamoto Prefecture
 Kagoshima Prefecture / Okinawa Prefecture

Local IoT Acceleration Labs

Summary of Regions Selected in 1st Selection

- Local IoT Acceleration Labs can broadly be divided into ①Support types and ②Project types. Diverse efforts are selected according to regional characteristics and tasks, and supported

Support Type Labs

Labs which are formed mainly by municipalities to support companies attempting to carry out IoT business.

i) Business contest labs

Focusing on projects, these labs screens degree of completion and innovativeness through competition and supports/awards outstanding projects.

ii) Personnel development labs

Focusing on personnel, these labs aim to foster outstanding IoT personnel in the labs.

iii) Test-bed labs

Labs which prepare test beds for companies belonging to the labs to freely participate in demonstrations in the aim to create outstanding projects through trial and error.

Project type labs

Labs comprised mainly of companies to carry out one specific project.

(E.g.) Hokkaido Shihorocho

- The agricultural IoT device “e-kakashi” developing PS solutions is installed demonstration farms owned by the local Shihoro High School.

The accumulated environment data is biologically and physically analyzed and students learn skills cultivated by using the data. It contributes to the fostering of outstanding agricultural personnel.



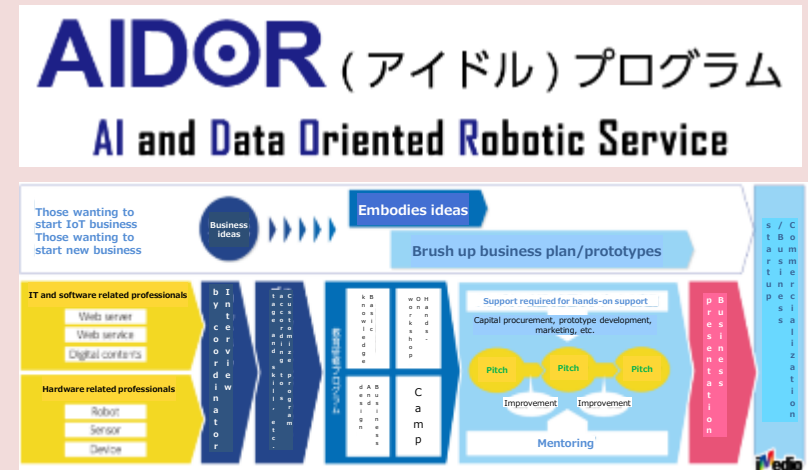
- By formularizing cultivation methods (=recipes) using data, aim to transfer cultivation techniques through the high school students, and improve productivity of the whole regions through cross-section development to farmers in the region.

⇒ Aim to construct an eco system for creating new IoT business that are independent in the region.

Local IoT Acceleration Lab Advanced Project ① : Business Contest type Lab

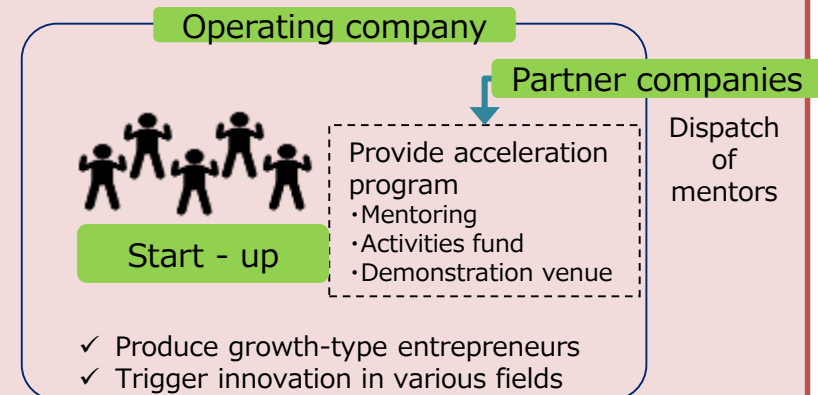
■ Osaka City, Osaka Prefecture

- In Osaka City, small and medium sized companies make up 98% of all companies. In order to create new businesses and services using IoT so that these **small and medium sized companies can acquire the ability to make profits and gain competitive strength, the entrepreneur development program "AIDOR" dedicated to IoT business has been launched**
- Led by the Advanced Telecommunications Research Institute International(ATR) which conducts studies in the IT area and Osaka Urban Industry Promotion Center which provides supports for various business needs from startup to business transfer, the program aims to brush up businesses by mentoring, etc. It aims to **contribute to economic growth in Osaka City by creating new businesses, fostering business minds, etc.**



■ Kobe City, Kobe Prefecture

- Amidst the major structure changes of industry and society due to the progress of IoT, AI, and big data technologies, Kobe City aims to **invigorate Kobe's economy, by supporting IoT startups** by mainly launching acceleration programs.
- Kobe City became the first city in Japan to invite the **"500 Startups" program** to Japan. This program is a top level accelerator (organization to support the development of startups) in the world which provides accelerator programs in Silicon Valley. Kobe City aims to **gather many outstanding young generations from inside and outside the country to trigger the flow of people and make Kobe a city where it is easy to start business.**



■ Aizuwakamatsu City, Fukushima Prefecture

- **Aizuwakamatsu City aims to reinvigorate the region through high quality jobs with higher income than Tokyo by concentrating the IT industry in the area**, making use of the locational strength of the University of Aizu, a university specializing in IT.
- It is reviewing the following to establish the city as a mecca for data analysis and usage as “Smart City Aizuwakamatsu”.
 - ① It aims to **make open data obtained** from sensors installed in the city, (E.g.: traffic information on public transportation, etc.) and create **test-beds of streets so** that companies can investigate the feasibility of using the data for their business.
 - ② It is reviewing the construction of **ICT offices which can be leased by IT companies and IoT related companies** in the region.
- Accenture will set up an office at the site to intensively support the city’s efforts and lead the collaboration. (Currently more than 30 companies are discussing collaborations)



ICT offices (image)

■ Kitakyushu City, Fukuoka Prefecture

- Kitakyushu provides support on the promotion of projects and business startups from various perspectives to IoT projects contributing to resolving regional issues. Support includes **knowhow and technical support, providing test-bed venues, financial support, providing and running local information infrastructures, and support is provided through the “e-PORT Partner” collaboration consisting of industry, academia, government, private sector, and financial sector.**
- In particular, it is currently carrying a test-bed project led by YASKAWA Information Systems and Human Media Creation Center/KYUSHU to create live and excitement in areas around the Kitakyushu Stadium, which is home to the local professional soccer team “Giravanz KitaKyushu” (completed in March 2017).
- **Installing beacons and sensors in central areas, it aims to reinvigorate the region and resolve administrative issues** by creating live and visualizing the flow of people.



Kitakyushu Stadium (image)

IoT Lab Global Connection

Matching of Overseas IoT Ventures and Japanese Companies

- Invite global companies to Japan and promote global collaborations of Japanese companies in order to construct eco systems through the formation of IoT projects centering around Japanese companies.
- First, IoT venture companies wishing to collaborate with Japanese companies will be broadly invited from three regions ASEAN, India, and Israel. 164 companies applied, of which a total of 29 companies were selected through voting by IoT Acceleration Lab members. Business matching was carried out between these companies and Japanese companies at the CEATEC JAPAN venue.
- The overseas venture companies set up exhibition booths in the venture areas at the CEATEC JAPAN venue.
- Local embassies, experts, etc. were invited to briefings held on economic situation, etc., lectures were given on investment opportunities and government support policies, and pitch meetings were held by overseas companies.

① Business matching (1:1 matching)



Combinations of overseas and Japanese companies whose seeds and needs met were set beforehand, **and matching was carried out for 20 minutes each.**

41 Japanese companies and organizations participated.
214 matchings were carried out.

② Exhibition booth

Overseas ventures set up exhibition booths.



③ Pitching session



The Israeli Embassy in Japan and NASSCOM talked about the country's economic situation, and government support. **Overseas companies appealed their technologies in the pitching session.**

This session was held for each of the 3 regions.

The audience totaled about

325 people

Date: Tuesday, October 4 to Friday, October 7, 2016

Venue: CEATEC JAPAN 2016 Hall (Makihari Messe)












Co-organizers: IoT Acceleration Lab, Ministry of Economy, Trade and Industry (METI)

No. of participating countries: 29 from overseas, 41 from Japan.

IoT Lab Global Connection ①

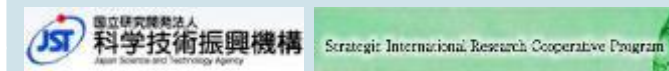
List of Participating Companies from Israel and Details of Support

•55 companies applied from Israel, of which 10 companies were selected after strict screening. In the future, collaborations will be accelerated while using funds, etc.

Company name	Outline of project	Details of support
	Vayyar Imaging	<p>○ NEDO grants Joint project with Israel Industrial Technology Research Development Center. Support projects including R&D themes such as new energy, energy saving, smart community, environment, robot, machine systems, electronics/information, materials/nanotechnology, biotechnology, etc. Provides funds with 50 million yen as the upper limit per year. (Maximum 3 years) Started from 2014 (Up to now held 3 public offerings, next offering is not decided.)</p>  
	Perytons	
	Powertags	
	Sol Chip Ltd.	
	SCADAfence	
	HearTracker	
	3D Signal	
	Magna BSP	
	Voiceit	

○ **JST Funding (for University)**

Joint project with Strategic International Research Cooperative Program. Support research themes on ICT for resilient society. Provides funds with 18 million yen as upper limit in 3 years. Started from 2009 (Up to now held 6 public offerings, next offering is not decided.)














To find partners, the "Program to Introduce Israel Ventures for Global Companies" by the Israel Innovation Authority can be used.



IoT Lab Global Connection ②

List of Participating Companies from India and Details of Support


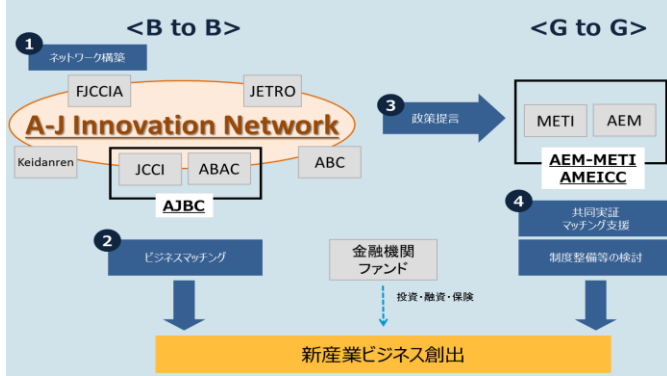









•64 companies applied from India, of which 10 companies were selected after strict screening. In the future, collaborations will be accelerated through Japan-India JWG.

Company name		Outline of project	Efforts made for collaboration
 Flutura Business Solutions Private	Flutura Business Solutions Private	IoT platform for optimizing industrial machinery.	<p>○Japan-India JWG This JWG was installed as a framework for policy dialogues participated by industry and government from the viewpoint of further accelerating collaborations between Japan and India in the IT and electronics industry and strengthening competition of both parties based on the ministerial talks between former IT Ministry of India Mr. Shival and former Minister of Economics, Trade and Industry Mr. Shigeki in February 2013. The Japan side top is METI Commerce and Information Policy Bureau Chief while the India side is Communication and IT Ministry Electronic Information Technology Bureau (DeitY) director. Consists of three layers: ① Private sector meetings ② Public and private sector meetings ③ government level meetings. Meetings held to date 1st meeting : November 2013 @Deli 2nd meeting : October 2014 @Tokyo 3rd meeting : November 2015 @Deli 4th meeting November 2016 @Tokyo planned. Bilateral discussions between Japan and India on hardware, human resources, and business collaborations</p>  <p style="text-align: center;">Scene of 2nd Japan-India JWG</p>
 Linkeddots Engineering Solutions Private	Linkeddots Engineering Solutions Private	Management of room entry/exit using beacon, etc.	
 LOCANIX	LOCANIX	Development of data analysis and management system using telematrix which is already being used for 90% of ice cream deliveries in Gujarat.	
 SenseGiz	SenseGiz	IoT platform centering around smart home.	
 Preva Systems	Preva Systems	IoT platform centering around distribution, education, and healthcare	
 Stesalit Systems	Stesalit Systems	Specializing in agricultural IoT. Individual development from device to applications.	
 Teevr Data Pvt	Teevr Data Pvt	Cuts communication costs by 90% using unique data compression technology.	
 Yuktix Technologies	Yuktix Technologies	Applied data analysis using large-scale wireless network.	
 Srishti ESDM	Srishti ESDM	Settlement system applying the IDs and biodata of India already possessed by the company.	
 TartanSense	TartanSense	Provider of serial image analysis using UAV	

IoT Lab Global Connection ③

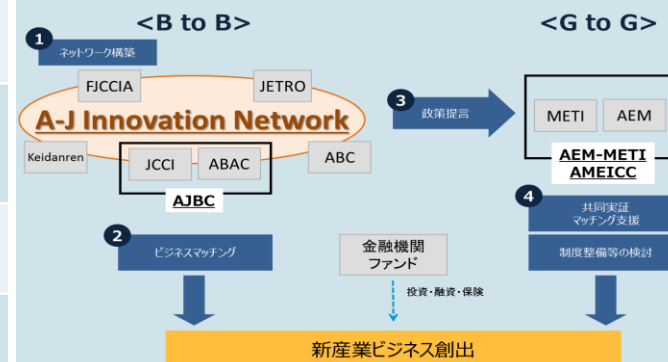
List of Participating Companies from ASEAN and Details of Support

•45 companies applied from ASEAN, of which 10 companies were selected after strict screening. In the future, collaborations will be accelerated through Japan-ASEAN new industry creation support projects, etc.

Company name	Outline of project	Details of support
 glueck	Glueck Technologies Determines gender and emotions using image processing technologies and optimizes outdoor advertisements.	<p>○Support creation of new industries in Japan and ASEAN</p> <p>To foster new industries, business organizations in Japan and ASEAN will work together to promote corporate collaborations (matching), policy recommendations (deregulation, etc.). To support these, governments will establish systems, provide financial support, etc.</p> 
 ELECTRONIC NOS	Electronic Nose "Electronic nose" which imitates the olfactory sense of mammals including humans, and identifies smell.	
 df AUTOMATION & ROBOTICS	DF Automation & Robotics Sdn Bhd Manufactures mobile robots for transportation which can be navigated without guide tapes.	
 VP9 VIET NAM Making Visual Connection	VP9 Vietnam Joint Stock Company Inexpensive high speed video streaming using outstanding compression algorithm. Awarded research prize by the World Bank.	
 DataMicron	Datamicron Systems Sdn Bhd Already have customers in seven countries for patented large volume high speed communication technologies.	
 PIPELINE	Pipeline Network Capable of high volume communication with communication module using HetNet.	
 RENEON TECHNOLOGIES	Reneon Technologies Technologies for reducing power costs of general households and commercial facilities and CO2 using energy management platform.	
 Techcare Innovator	Techcare Innovation IoT balance board which can carry out rehabilitation effectively.	
 Sophic	SOPHIC MSC SDN BHD Provides diverse solutions in data analysis from manufacturing to agriculture.	
 AE&C Innovation for Better Life	Angkor E&C (Cambodia) Co., Ltd. Provides solutions for preventing car theft. Capable of tracking from PC and smartphone .	

○Support creation of new industries in Japan and ASEAN

To foster new industries, business organizations in Japan and ASEAN will work together **to promote corporate collaborations (matching), policy recommendations (deregulation, etc.)**. To support these, governments will establish systems, provide financial support, etc.



Joint verification projects, etc. will also be carried out with local companies so that backbone and small and medium sized companies in Japan can contribute to the advancement of industrial structures of ASEAN, and deepen economic cooperation between Japan and ASEAN.

International Collaborations with IoT Acceleration Consortium

- The IoT Acceleration Consortium **promotes collaborations with overseas in the IoT test-bed demonstrations and in the review of standardization that follows.** It aims to **create and spread global IoT business by Japanese companies.**
- On October 3, 2016, the IoT Acceleration Consortium signed an MOU with U.S. IoT related organizations Industrial Internet Consortium (IIC) and OpenFog.

Industrial Internet Consortium (IIC)



<Outline of organization >
Established in March 2014 by five founding members AT&T, CISCO, GE, IBM, and Intel. Aims to promote industrial IoT (Internet of Things).

<Aim of MOU>

Share demonstration environment and implement demonstrations based on common architecture understanding, to enable creation of efficient and effective global IoT solutions.

OpenFog Consortium



<Outline of organization >
Established in November 19, 2015 mainly by ARM, CISCO, Dell, Intel, Microsoft, and Princeton University. Aims to accelerate open architecture and distributed (processing) computing development (Fog computing technology).

<Aim of MOU>

Promote collaborations in the demonstration and standardization, etc. taking into account distributed computing aiming at IoT solutions for fields which particularly require real time and large volume data processing.

Joint activities will include

- ✓ Identifying and sharing best practices
- ✓ Collaborating on test beds and research and development projects
- ✓ Realizing interoperability by harmonizing architecture and other elements
- ✓ Collaborating on standardization
- ✓ Other activities to which both parties agree

Future Action Plans of NexGen IoT
Acceleration Lab
(Discussion Topics)

How we lead it to platform in collaboration with large companies, advanced technology ventures and global companies.

[Case example]

- Mechanism where venture companies and global companies with unique technologies can join the projects carried out in Demonstration

Example of participation of Selection finalists in Demonstration

Liquid Marketing which won the Grand Prix of the first Lab Selection is participating in the Demonstration "IoT-Based Service Demonstration Project". Partnering with JTB, this cutting edge project could not have been realized with conventional collaborations between large companies.



How do we attract overseas companies to Japan

[Case Example]

- Invite overseas companies test-bed demonstration in collaboration with IIC.

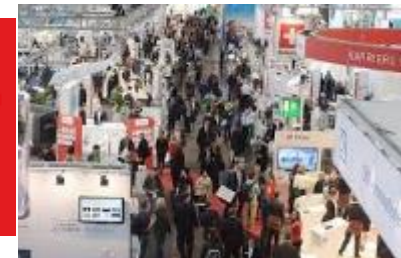
Collaboration with IIC and OpenFog

Conclusion of MOU with overseas organizations.



Exhibiting Japan Pavilion at CeBIT in Germany

Members of IoT Acceleration Labs to exhibit at CeBIT in Hanover, Germany as Japan Pavilion.



Collaboration with overseas ventures and Japanese companies

Matching with companies in ASEAN, Israel, and India were carried out this year.



How do we find the regulatory reforms and rules which will lead to proposals made to the government, not limiting efforts to those by individual companies?

[Case Examples]

- IoT Regulatory Reform Selection

Setting up a framework for conducting surveys on ideas with economical impact acquired from new businesses from the technical feasibility and legal aspects, inviting demonstration themes for reviewing regulation and rules which pose as challenges in the implementation of IoT, and carrying out regulatory reform selection.

- Regulations Customer Desk at private incubation facilities, etc.

Setting up customer desks at private incubation facilities, where consultation meetings by lawyers, etc. are held, to activate the projects which have come to a deadlock although they were promising business models due to hindrance by regulations.

To excavate leading-edge companies, how do we reassess the project selection method and support method.

[Case Example]

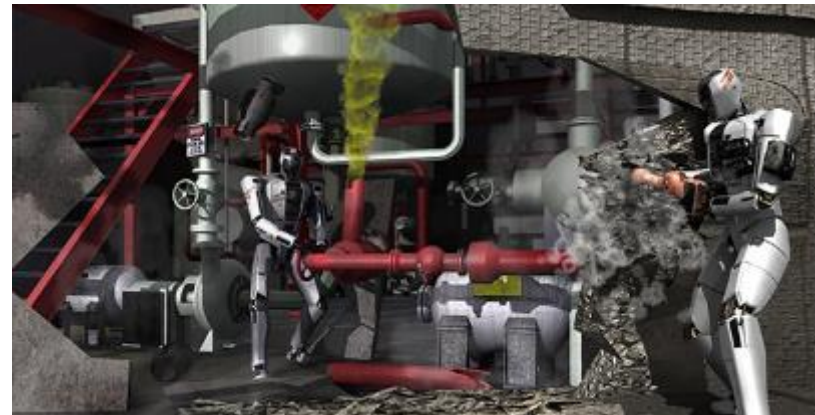
- Award type support projects

Setting up award type supports providing the funds to the companies which has been awarded for the best results on a theme.

DARPA Robotics Challenge

Contest for competing over the performance of disaster relief robots operated by remote control sponsored by DARPA giving away prizes totaling 3.5 million dollars.

Participating by universities, private companies, national research centers, etc. from all over the world, to compete and create innovation.



How do we lead to human resource development as the IoT Acceleration Lab?

[Case Example]

Providing the opportunities for outstanding human resources to use their skills in collaboration with Mitou Kaigi (Meeting of outstanding exploratory IT Human Resources), etc.

Creating environments for exploratory IT human resources to play an active role

In last year's Mitou Kaigi meeting, IoT Acceleration Lab member companies and Mitou Kaigi members were matched as a trial. As a result, opportunities for members to play an active role in unexplored areas were born and members were able to secure outstanding personnel.



Foster personnel linking software, hardware, and business

As many IoT startups are launched by software engineers, they come to a bottleneck in hardware development. There are very little private sector efforts linking software and hardware.

3Meister



Foster AI engineers

Use working space where AI engineers gather and offer advise from non-Japanese famous researchers



Co-working Space
Artificial Intelligence Research Center



Foster data scientists

Setting up a framework that enables to evaluate skills of data scientists, such as Big Data Analysis Contest



How do we tie up with support activities for IoT startups in private sector ?

[Case Example]

- Collaboration with private sector startup support

Linking with Selection as step-up for entrepreneurs developed with startup supports from private sector.

Docomo Innovation Village



Main activities

- Village alliance
Creates joint services by DoCoMo and venture companies.
- Village social entrepreneurs
Support for social entrepreneurs (advice from specialists)
- Village community
Provide open innovation communities

KDDI∞Labo



Main activities

- KDDI and partner companies support innovative ideas of entrepreneurs and venture companies from seeds to start stages.
- Provides the environment for developing programs aiming for commercialization, also support mentoring by KDDI employees, advice and management by specialists.
- After the program ends, implement funding and business alliance with KDDI according to the feasibility of commercialization, etc.

III / Mirai



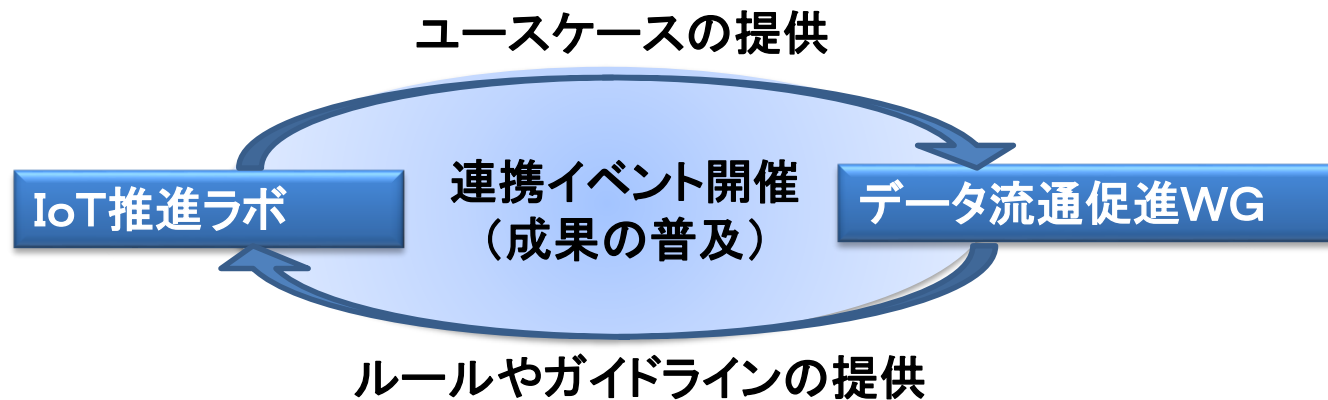
Main activities

- 異業種連携の事業開発コンソーシアムIIIによるインキュベーション・アクセラレーションプログラム「未来」の運営（専門家によるビジネスプランの作成支援・メンタリング等）
- ベンチャーと大企業とのネットワーキング・ビジネスマッチング・共同研究・新規事業開発の推進およびVCとのマッチング
- イノベーションに即した法制度・ルール整備を行う為の政策提言・官民プロジェクト政策提案

How do we link each activity of the IoT Acceleration Consortium and IoT Acceleration Lab?

[Case Example]

- Setting up mechanism to review the cases of uses of Selection finalists with priority in Data Distribution Promotion WG
- Setting up mechanism to link IoT Acceleration Lab Selection with the Selection carried out by Local IoT Acceleration Labs



How do we provide test-beds (servers, systems, data, actual fields, etc.) that allow companies to challenge IoT business?

[Case Example]

- Carry out Selection of test-bed users to participate, inviting test-bed providers

How do we use and expand the results of Demonstration?

[Case Example]

- Collaboration with Demonstration and private sector platform.

To promote open data of companies and municipalities, there is a need for efforts which allow people to feel the value of data and new methods of using the data.

[Case Example]

- Holding workshops to provide the opportunity to discuss about new data usages, gathering information on open data by companies and municipalities.



How do we provide more information inside and outside the country?

[Case Example]

- Video distribution of the project results of finalists, etc.

今年4月に支援委員ウド
ヴォルツ氏の協力でIoT推
進ラボの政府広報動画を
配信



IoT Acceleration Lab
2nd Selection Meeting for Innovative IoT Projects
IoT Lab Selection

List of Supported Projects

- Contents -

①	[Grand Prize] UniFa Corporation [Supporting the digitalization of services for monitoring the premises of nursery schools centering on the monitoring robot MEEBO]	2
②	[Second Prize] Phoenix Solution Co., Ltd. [World's-first RFID tag that is readable even through the metal to which it is attached]	3
③	[Second Prize] Zenrin Co., Ltd. [Demonstration project concerning information on three-dimensional aerial maps toward the realization of safe drone flight over city areas]	4
④	[Special Jury Prize] exMedio Inc. [Technology for recognizing ophthalmic disorders using images and data from medical interviews]	5
⑤	OryLab Inc. [Realize a community for conveying our existence using avatar robot OriHime]	6
⑥	GNN Machinery Japan [Raw concrete quality continuous management system (Smart Agitator)]	7
⑦	DeNa Co., Ltd. [Realize personal shopper service for reinforcing regional consumption eco system]	8
⑧	smart-FOA [IoT age data flow information infrastructure "FOA system" for boosting the manufacturing industry in Japan]	9
⑨	Konica-Minolta Inc. [Home medical care support system by non-contact respiratory sensing]	10
⑩	Aerosense Inc. [Realize safe, simple, and high precision 3D modeling operations]	11
⑪	JVC KENWOOD Corporation [Build health management and remote diagnosis service by self recording breathing sounds]	12
⑫	Space Market, Inc. [Realize regional revitalization by space sharing business and create micro-entrepreneurs]	13
⑬	ABEJA, Inc. [Research and development of data system capable of comprehensively managing complicated data for IoT society]	14

- Supporting the digitalization of services for monitoring the premises of nursery schools -

Outline of Project

The company aims **to resolve the problem of lack of nursery school teachers** which is a social issue, and **support activities at nursery schools** using smartphones/sensors/robots, etc. so that even inexperienced nursery school teachers are able to take care of children safely.

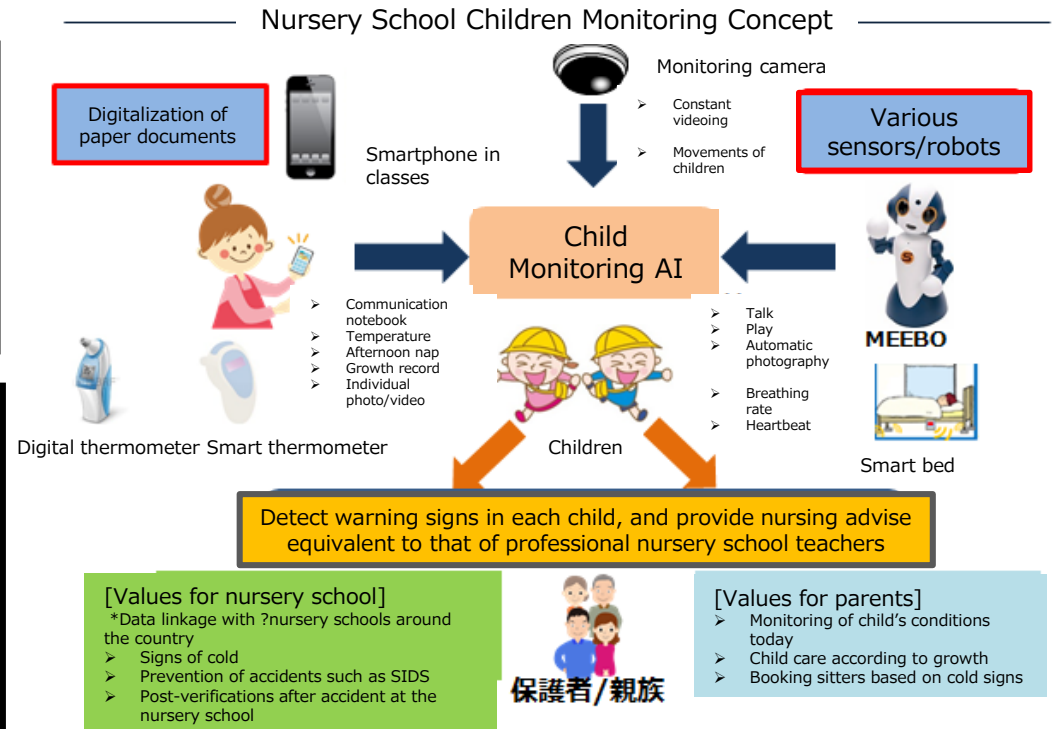
Specifically, the company is currently developing services such as **the digitalization of handwritten documents which tend to pose as huge work burden** (Communication notebook/afternoon nap check table, temperature sheet, etc.) and **support for monitoring of children during their afternoon naps which have the risks of fatal accidents** (using video camera/smart bed sensor).

Outline of Required Support

- Financial support (Public support for technological development, etc.)
- Escort-type support such as guidance, advice by mentors.
- Deregulation (Legal position of digitalization of related documents, etc.)

Future Vision

By realizing both high quality nursery care and work efficiency, help resolve values problems faced by nurseries such as lack of nursery school teacher. Furthermore, by analyzing data related to nursery school children, advanced data usages such as disease prevention, etc. will be possible.



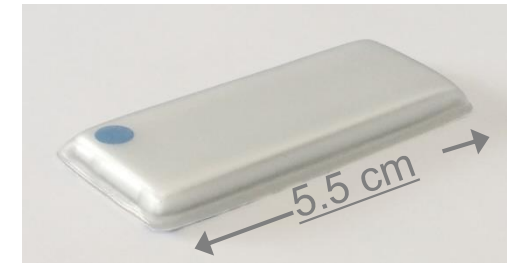
- World's-first RFID tag that is readable even through the metal to which it is attached -

Outline of Project

Phoenix has developed **special metal tags which can be read using normal readers, especially behind metals and in laminated states (no batteries needed)**. These tags are expected to improve work efficiency and reduce management costs in industries using high volume of metallic materials such as manufacturing, construction, lease, distribution, infrastructure and facilities, etc. (Examples of uses: metallic pallets, basket carriage, gas cylinder, construction scaffold, etc.) The company aims to further expand use by application to supply chains and linkage with sensors, drones, etc. This is the first technology of its kind in the world. By developing various types of tags, the companies is aiming at extensive dissemination around the world, and realizing the IoT of metal products.

Outline of Required Support

- Financial support (Public support for technological development, etc.)
- Escort-type support such as guidance, advice by mentors.



860MHz-950MHz (UHF)

Future Vision

The global IoT market is expected to be 400 trillion yen in 2020, with 30~50 billion equipment and things connected to networks. **Thus efforts will be made to expand this technology using open platforms and sweep the global market in a short period of time.**

Normal metal tag



Cannot read Metal

Phoenix solution's metal tag



Can read Metal

- Demonstration project concerning information on three-dimensional aerial maps toward the realization of safe drone flight over city areas -

Outline of Project

The company is aiming **to develop an automatic drone flying support system** as an infrastructure for realizing **“contact flight in manned regions such as city areas, etc.”** as the ultimate usage of drones. (Level 4)

In this project, the company aims to realize **“3D maps of the sky”** including recommended flight routes and obstacles, as well as develop technologies enabling safe drone flight in manned regions by the real-time tracking of drones deviated from their routes by **gathering and analyzing drone probe information**.

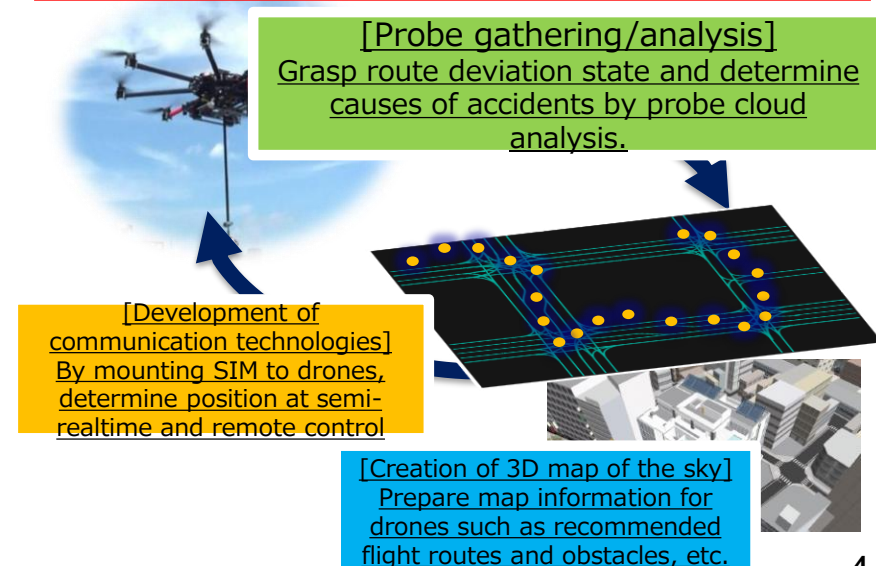
Outline of Required Support

- Financial support (Public support for technological development, etc.)

Future Vision

- **Establish de facto standards in the guidance/control/management fields** serving as infrastructure for industrial use of drone.
- **Radically expand the scope of use of drone** and **realize innovative new services** by realizing contact flight in city areas, etc.

Automatic drone flying support system



- Technology for recognizing ophthalmic disorders using images and data from medical interviews -

Outline of Project

For non-ophthalmic disorders, the company aims to **develop AI enabling automatic identification and diagnostic support of eye diseases using images and medical examination data, and mount to mobile apps "Memiru"**.

Presently, **non-ophthalmologists are forced to carry out eye diagnosis** in some situations such as remote island and places, hospitals with single departments, disaster areas, etc., and **the high misdiagnosis rate*** is a problem.

exMedio is currently developing skin disease automatic identification AI boasting high identification accuracy, and aims to apply this technology to eye diseases in this project.

Outline of Required Support

- Financial support (Public support for technological development, etc.)
- Escort-type support such as guidance, advice by mentors.

Future Vision

Through diagnostic support using AI, it will be possible to **reduce misdiagnosis rate** by non-specialist doctors, and improve patient QOL. In the future, the scope of application will be expanded to other medical departments and **the service will be provided to developing countries and poor regions, etc.** as a low cost diagnostic support technology.



*There are research reports indicating that 84% of diagnosis results of non-ophthalmologists and ophthalmologists are different. BMJ 1988;1162-1167

OryLab Inc.

- Realize a community for conveying our existence using avatar robot OriHime -

Outline of Project

OryLab has developed **an avatar robot OriHime capable of “conveying existence”**. It serves as an avatar for going to places where we cannot go due to physical reasons such as Lou Gehrig's disease or distant places when posted far away from home, or meeting people we cannot meet. Even on the bed, we can learn, work, participate in community through OriHime.

Presently, it is used for patients with difficult to cure diseases, disabled persons, and for those working at home such as women taking of their children, etc.

Outline of Required Support

- Financial support (Support for technological development for strengthening “sense of presence”.)
- Expand scope of support of national grant projects.

Future Vision

In the future, by allowing the robot to be placed anywhere in facilities or at home, it will be possible to construct a presence infrastructure in which anybody can virtually go to the required places anytime and carry out natural communication with people in far away places, learn, work, etc.



GNN Machinery Japan

- Raw concrete quality continuous management system (Smart Agitator) -

Outline of Project

The company has **developed a continuous ready-mixed concrete quality management system (Smart Agitator) capable of high quality control by sending the state of ready-mixed concrete being transported** (hereafter ready-mixed concrete) together with car information such as GPS position information, drum rotating speed, drum inner pressure, etc., **to the cloud server at real-time.**

Presently, ready-mixed concrete product inspection is manual sampling inspection by operators at the site with certain level of skills. As a result, **quality is inconsistent**, and there **are problems such as needing to secure such matured workers.**

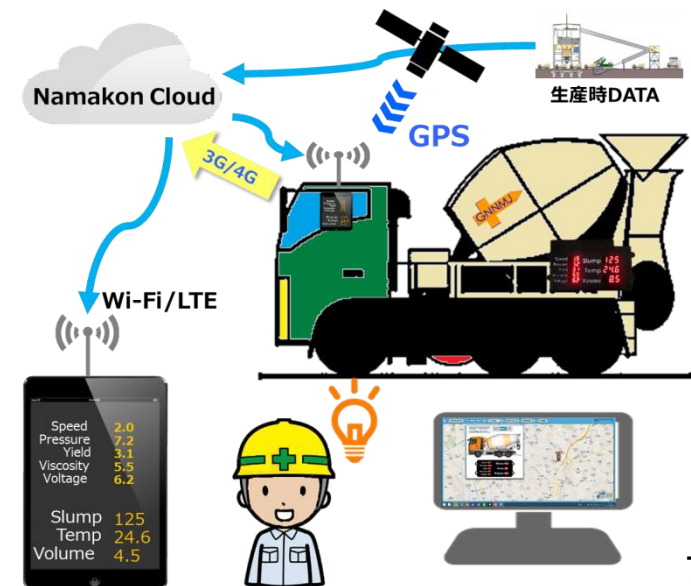
The use of this system realizes **automatic measures that does not need human assistance**, and **management of ready-mixed concrete quality for all products.** It helps resolve the challenges faced in the ready-mixed concrete and construction industry such as **reducing work time by 40% in addition** as well as **ensuring safety.**

Outline of Required Support

Financial support (Public support, funds, etc. for service development)

Future Vision

With the problems faced in the ready-mixed concrete and construction industry being increasingly resolved by IoT (improved inspection efficiency , securing of time-series management and traceability for all products, securing of personnel, etc.), Japan is currently facing a construction rush towards the 2020 Tokyo Olympics/Paralympics. This technology is expected to contribute to the maintenance of high quality construction technologies.



DeNa Co., Ltd.

- Implementation of a shopping agent that strengthens the local consumption eco system -

Outline of Project

By cooperating with the major distribution companies, the company aims to create a service that connects local stores with consumers via the use of self driven vehicles.

Together with the research and development of self driving, they aim to create a system where various data such as the store selling the goods, the delivery address, order time and local traffic information can be **analyzed via artificial intelligence to create the most effective delivery route possible.**

It should be possible to solve **the issue of disadvantaged shoppers, revitalize local shopping districts, increase the efficiency of delivery truck routes** and avoiding traffic congestion thereby **decreasing CO2 emissions.**

With a locally based **EC network constructed to strengthen local consumption,** it will become **a new axis of formation within the EC world.**

Outline of Required Support

- Financial support
 1. Development of a **highly efficient delivery planning algorithm**
 2. Development of technology that will **detect the most efficient vehicle placement for goods pickup**
- Deregulation (**Definite implementation of public-private talks (2015.11) towards self driving vehicles**)

Future Vision

- **Stress free delivery becomes possible which takes in to consideration people's movements and daily lives, with pin point delivery of goods at designated times and locations.**
- **Elimination of disadvantaged shoppers and revitalization of local shopping districts,** contributing to resolving local issues.



ロボネコヤマト

Service Flow



Obtain goods from local stores online



Store goods from shops in storage box



Confirm delivery time and address for the goods



Send notification before delivery



Receive the goods

smart-FOA

- IoT age data flow information infrastructure "FOA system" for boosting the manufacturing industry in Japan -

Outline of Project

It is predicted that with the advance of IoT, the information systems at manufacturing locations will get mixed together, making it more complicated to connect data together. The 'FOA System' is able to **resolve these problems via it's capability to consolidate information from various systems related to 'Events' (such as 'Defective product detected')**. With this event driven flow type data system, it has become possible for people on-site to people in management to "**enable to understand**"* what is happening at manufacturing locations. Furthermore it is possible to retrofit current systems, allowing small and medium sized companies to make a small start. In the future the 'Smart-FOA Platform' system will be developed so that with standard API an open platform can be achieved, which can be expandable without the need to stop the system of various services.

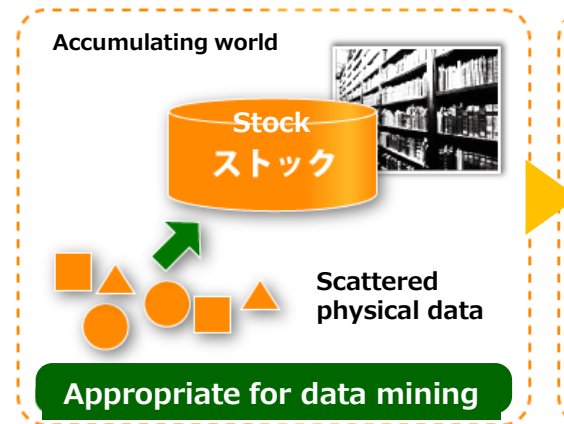
Outline of Required Support

- Financial support (Public support for technological development, etc.)
- Escort-type support such as guidance, advice by mentors.

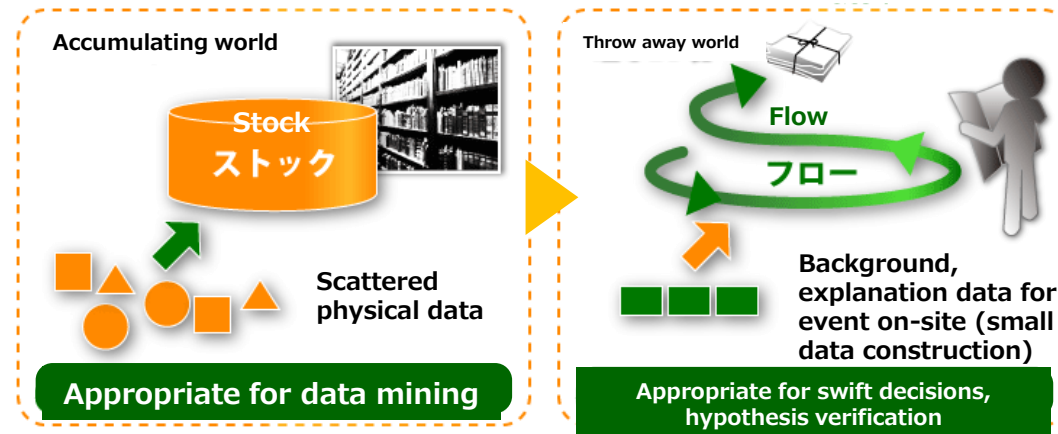
Future Vision

To broadly permeate the domestic manufacturing industries with IoT together with small and medium sized companies that find it hard to incorporate large scale systems, as well as creating a data platform for the manufacturing industry in association with Cisco and other large Japanese vendors, that can be expanded globally.

Conventional System Library-type System



FOA System Newspaper-type System



Konica Minolta, Inc

- Home medical care support system by non-contact respiratory sensing -

Outline of Project

The number of nursing homes and 'home care patients' staying at home is increasing yearly, with the current 540,000 patients estimated to increase to 1,900,000 by the year 2030. Also, it is assumed that with this the number of 'nursing staff' for these home care patients will drastically increase.

As a result of this, it is imperative that a system be constructed that will decrease the burden of home care physicians and prepare ourselves for an aging society.

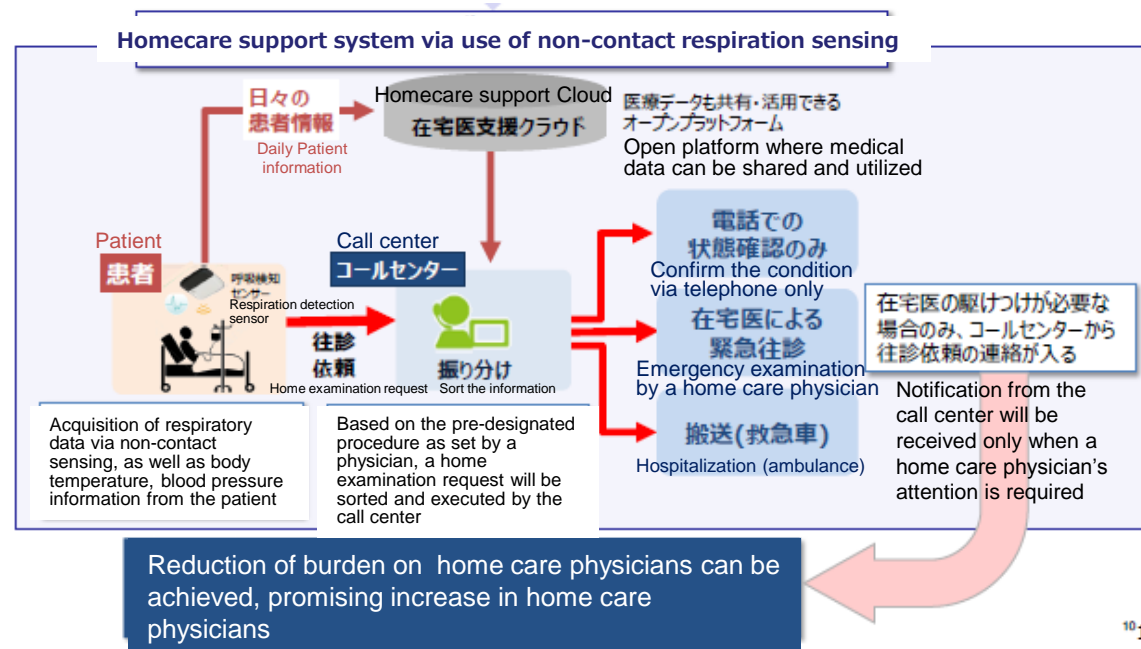
This project aims to create a home healthcare platform using **a unique microwave sensor as its core technology, that is capable of capturing detailed breathing and sleep information without direct contact**, and together with measured data for body temperature, blood pressure and such, it will be able to **confirm the safety of patients as well as monitor the quality of their sleep that will lead to more effective home healthcare.**

Outline of Required Support

- Financial support (Public support for technological development, etc.)

Future Vision

- With the increase in quality of home healthcare, bring to fruition an **improved quality of life for elderly people as well as terminal care patients.**
- Furthermore, **secure the sustainability of a home healthcare system** that will lead to the **implementation of reduced medical costs** as well as a reducing the burden on home care physicians.



Aerosense Inc.

- Realize safe, simple, and high precision 3D modeling operations -

Outline of Project

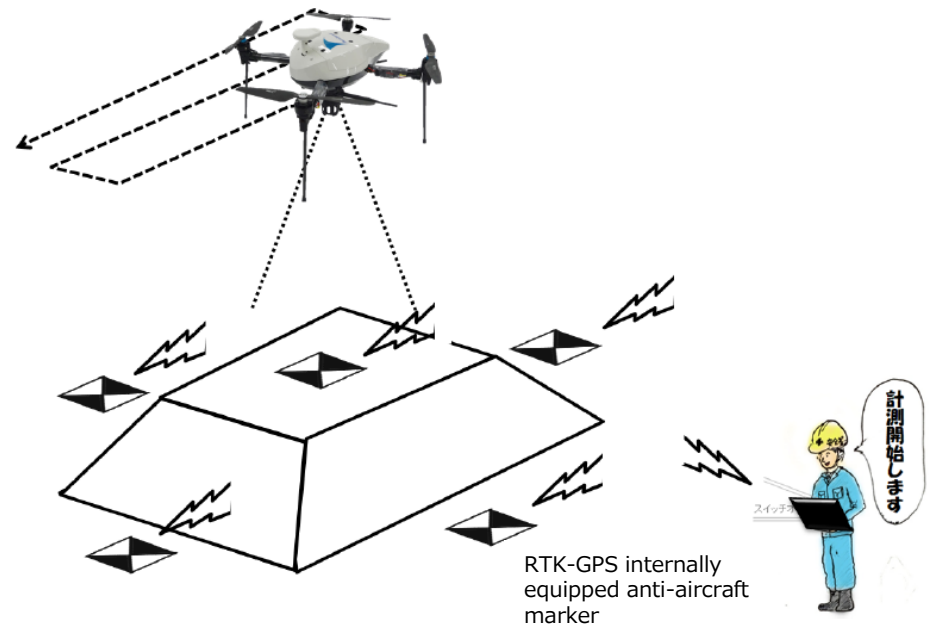
The company has **technology that utilize drones that take areal images to make high precision 3D models**, optimizing the work around civil engineering and topography surveys as well as construction designs. Specifically, it has become possible to **decrease the number of employees and man hours for civil engineering surveys to one third of the conventional number** (for a 90Ha survey, it will take around 2 weeks compared to the conventional duration of 6 weeks). By further evolving this, **it has become possible to automate the survey marker position timing and position measurements, as well as any revision work on the marker from the filmed images**, allowing for the most automated work schedule as possible, and with the use of these drones for civil engineering surveys a further reduction in manpower and better work efficiency (a 90Ha survey can be done in around one week) has become feasible.

Outline of Required Support

- Financial support (Funding for technological development, etc.)
- Establishment of rules (a sharing of views within similar companies towards a standard for public surveys, re-evaluation of export restrictions etc.)

Future Vision

- To be **the forerunner of IoT within public works**, being able to **respond to the lack of workers caused by the decreasing birthrate and aging population**.
- To become the **foundation of areal imagery 3D modeling with broad application possibilities** such as tourism and construction; feasible for **overseas development** also.



JVC KENWOOD Corporation

- Build health management and remote diagnosis service by self recording breathing sounds -

Outline of Project

The company aims to offer healthcare for the **estimated 8 million domestic asthmatic patients** with **a service that records their breathing sounds, allowing them to check their health via cloud information.**

They are targeting the implementation of software being developed, that is capable of **detecting abnormalities from the recorded breathing sounds.**

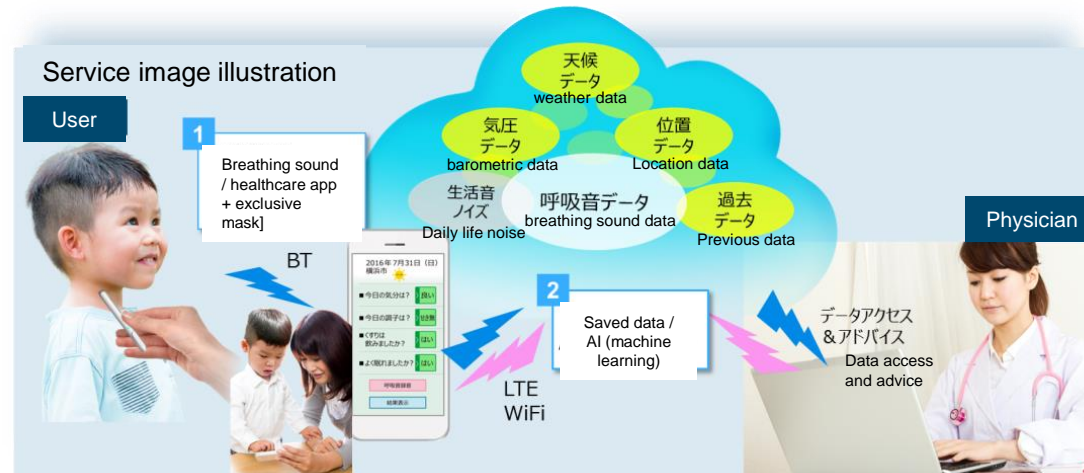
Furthermore in the future, **with the combination of AI (machine learning)** the recorded breathing sounds together with related information (physical condition from recorded asthmatic diaries, seasons, time, associated symptoms, weather, treatment details, medication situation, contents of daily life etc.) that can be combined and made in to a model whereby the seasons, time and weather forecasts can be connected to undertake a more personalized symptom prediction for patients.

Outline of Required Support

- Financial support (Funding, etc.)
- Deregulation (Clarification of the legal positioning of a breath recording devise)

Future Vision

To increase the service from healthcare for asthmatic patients, to a telemedicine and homecare service via the use of breathing sounds. **Contribute in the reduction of medical costs with appropriate health care.**
New big data business via the accumulation of sounds.



Space Market, Inc.

- Realize regional revitalization by space sharing business and create micro-entrepreneurs -

Outline of Project

- **Operation of a platform that matches hosts with unutilized spaces with guests looking for locations.** Together with meeting rooms etc., the company offers unique spaces such as shrines and temples, ruined buildings, major's offices and remote islands. By offering recommendations for unutilized spaces to owners and bringing them together with users, it has successively been able to monetize unutilized real estate.
- **By refining the recommendation function via the use of AI, they are aiming to design and implement a system with a compensation scheme whereby hosts and guests can use it with peace of mind.**

Outline of Required Support

- Financial support (Public aid to upgrade the service)
- Escort-type support such as guidance, advice by mentors.
- Deregulation (Institutional handling of compensation schemes)

Future Vision

- By progressing collaboration with municipalities, **solve various social issues such as empty houses and deficit administration of local government facilities.** At the same time, contribute towards increased tourism originating from the unique locations. Build successful examples as role models and expand nationwide.
- Contribute towards regional vitalization by offering a pioneering example of a sharing economy involving municipalities.

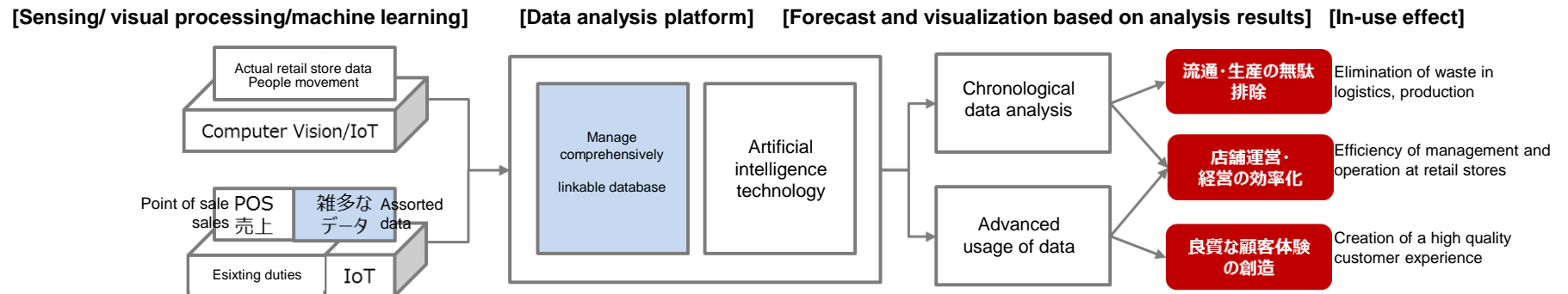


ABEJA, Inc.

- Research and development of data system capable of comprehensively managing complicated data for IoT society -

Outline of Project

The advancement of the already developed **data base utilized in artificial intelligence data analysis platforms**. With the intention of maximizing sales at retail stores, problems arose as **adjusting and formalizing the use of current data was deemed insufficient**. With various information on employees, the location of customers and their movement, product displacement, stock situations etc. being a factor in influencing sales, it is necessary to **comprehensively manage the assorted pieces of data** that is not adjusted or formalized, and **use artificial intelligence technology to create a data base and make simplified links possible**. Starting with existing retail store customers, the project will develop **an artificial intelligence data analysis platform that can be used for a variety of industries that plan to advance the use of IoT**.



Outline of Required Support

- Financial support
- **Database technological development**
- Deregulation/Establishment of rules
 - 1. Protection of personalized data**
 - 2. Data ownership**
 - 3. Portability of data**

Future Vision

- To become **a role model that increases productivity** via the use of artificial intelligence, used in a variety of industries (manufacturing, healthcare etc.), and become a data platform creator* with the accumulation of this business data.
- **Being adopted in many countries in Asia**, it is used not only in one location (such as an office or shop) but **spreading over many locations and eventually covering regions with collected data, making it possible to create value with data analysis for cities and the region as a whole**.

Implementation State of IoT Lab Demonstration (IoT related demonstration budget) by Theme

- Contents -

1. Social System Promotion projects for promoting IoT

FY2015 Supplementary budget: 1.12 Billion yen

FY2016 Initial budget: 2.04 Billion yen/Supplementary budget: 1.1 Billion yen

FY2017 Requested budget: 2.24 Billion yen

① [Manufacturing] Japanese-Style Smart Factory Model Case Demonstration Project	3
② [Infrastructure] New Industry Model Creation Project in Regional Social Infrastructure Field	4
③ [Industrial safety] Independent Safety Measures Advancement Project (Oil Refinery)/ Chemical Plant, etc.	5
④ [Government] New Index Development Project Using Big Data	6
⑤ [Medical/Health] Health Information Infrastructure Establishment and Usage Promotion Project	7
Health Promotion Model Project Using Life Data Analysis	9
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[New Projects]	
⑧ [Smart home] Data Usage Environment Establishment Promotion Project for Smart Homes	12
⑨ [Aircraft] Aircraft System Advancement Project for Supporting Piloting	13

2. Smart Mobility System Research & Development and Demonstration Project

FY2016 Initial budget: 1.88 Billion yen

FY2017 Requested budget: 3 Billion yen14

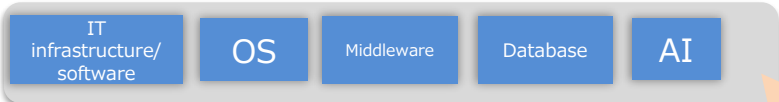
① [Manufacturing] Japanese-Style Smart Factory Model Case Demonstration Project

- This project aims to establish infrastructures which enables Japan's manufacturing industry to make visible the situation of production sites, and deal flexibly with market needs that change quickly.
- Specifically, it will reflect **information on the operations of the different types of production machines and facilities** in production management and quality management, etc., and **create common formats for data transmission** for realizing optimum production, inventory, distribution, etc.

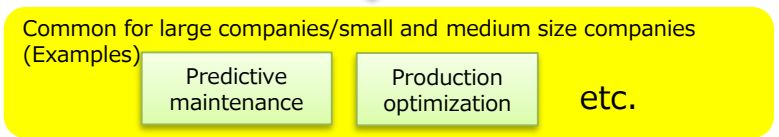
[Project background]

- When the manufacturing industry value chains are classified into "manufacturing site/hardware", "solutions", "IT infrastructure/software" layers, the solutions layer is expected to become the source of profits in the future and the main battlefield of competition.
- For this reason, common data formats will be established as an infrastructure for linking factories and companies and providing such solutions quickly while making use of the strengths of the manufacturing site which serves as Japan's forte, and create example of cutting edge efforts.

[IT infrastructure/software]



[Solution]



[Manufacturing site/Hardware]



[Implemented by]

Hitachi, Muratec, Mitsuiwa

[Project image]

Quick changes in market needs

Optimization of whole business

Optimization of production site

Example of solutions using manufacturing site data

Production Management

Monitoring of facility

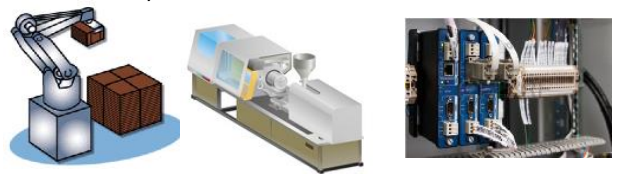
Optimization of distribution, etc.

Data can be centrally managed without sophisticated integration

Common format

1	000	1	Quality	品質管理	品質管理	品質管理	品質管理
2	200	2	品質管理	品質管理	品質管理	品質管理	品質管理

Accumulate data from various machines at the production site such as robots machine tools, controllers, etc.



② [Infrastructure] New Industry Model Creation Project in Regional Social Infrastructure Field

- **The efficient and sustainable business operations in the field of regional social infrastructure is a major social issue.** Amidst the dwindling population, declining birthrate, and growing silver population, regional infrastructure businesses are facing reduced effects of investments with the aging of facilities, excess facilities, and reduced demands.
- In such social infrastructure fields, this projects aims to carry out standardizations for applying IoT to a series of business processes (facility management, operational management) to enhance operational efficiency through the use of IoT. This will help **enhance the efficiency of routine operations as well as realize optimum asset maintenance management.**
- In 2016, **the specific effects of IoT for waterworks will be demonstrated,** and the effectiveness of using IoT in the social infrastructure field not limited to waterworks will be verified.

[Details of implementation]

By standardizing data processing, integrate and analyze difference data such as operations data, asset data, etc., to enhance management efficiency and resolve vendor lock in.

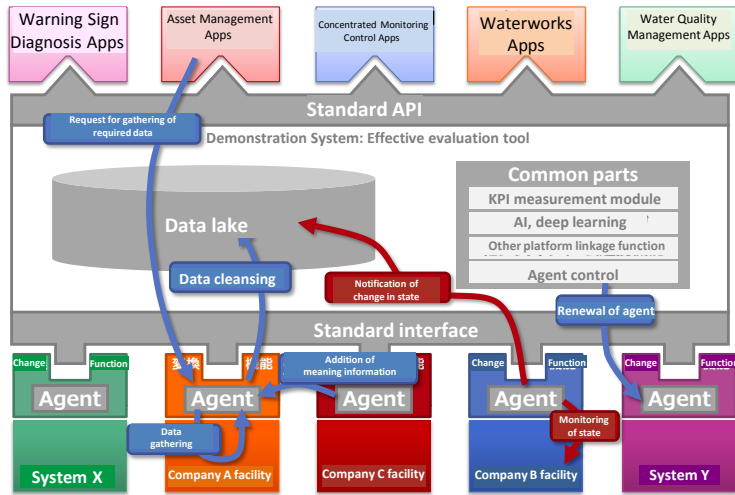


Image of standardization

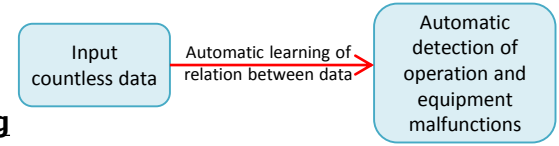
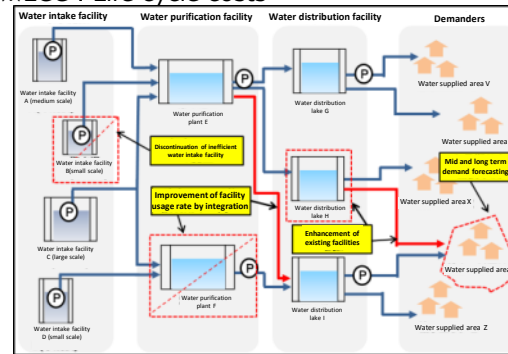
1. Diagnosis of deterioration signs

Use data accumulated from various facilities and devices to automatically detect signs of machine deterioration

2. Efficient asset management taking into account LCC

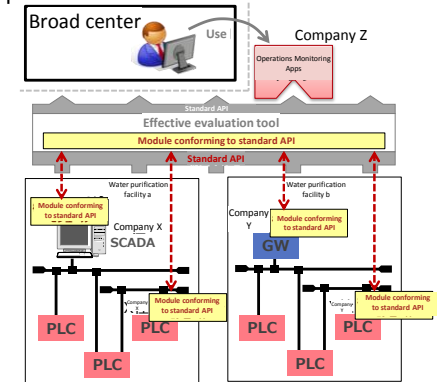
Using information such as change in population, operations information, and maintenance information, perform simulation of reorganization of facilities and equipment to support efficiency facility renewal plans.

※LCC : Life cycle costs



3. Efficient operations

Centralize information on operations of multiple facilities located over a wide area and water supply information and realize efficient operations of each facility through monitoring of operations and remote control.



[Implemented by] Mitsubishi Research Institute, Hitachi, NTT

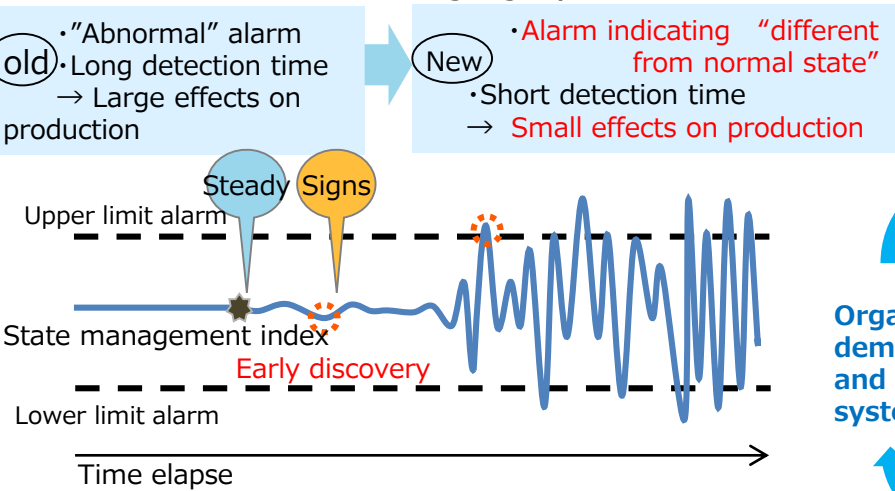
[Water suppliers] Iwate Chubu Waterworks Organization, Osaka Waterworks Authority, Kagawa Waterworks, Takamatsu City Water and Sewage Bureau, Kagawa Prefecture Waterworks Setup Preparatory Committee, Hachinohe Regional Water Supply Authority

③ [Industrial safety] Independent Safety Measures Advancement Project (Oil Refinery)/Chemical Plant, etc.)

- analyzing realtime operational data (temperature, pressure, flow, etc.) constantly acquired using sensors, etc. in the area of industrial safety measures (oil refinery, chemical plants, etc.)
- The efficiency of such new mechanisms will be checked and the mechanisms will be incorporated in new regulatory systems of the High Pressure Gas Safety Law (Super Certified Business System), implementation of IoT, etc. will be promoted.

[Example of demonstration]

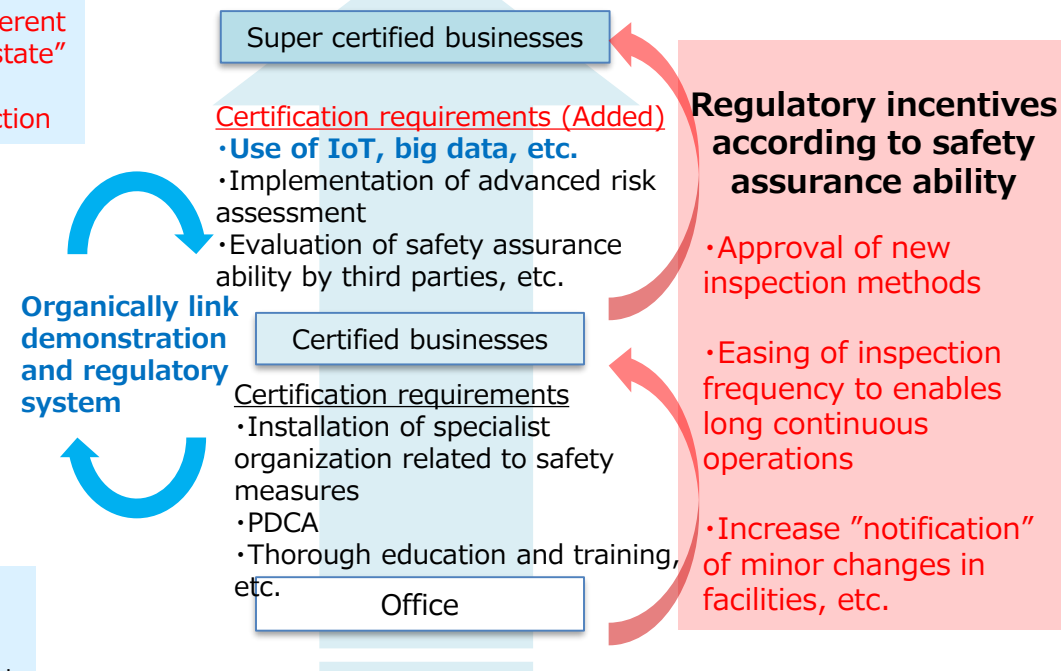
1. Constant monitoring of operations (Early discovery of abnormalities and warning signs)



2. Construction of piping corrosion prediction

Accumulate/analyze data related to inner side piping corrosion at oil refineries, etc. and data on outer side corrosion below heat insulating material in chemical plants, and construct prediction models for early discovery of abnormalities of facilities and equipment.

[Regulatory system realizing advanced independent safety measures]



[Participating companies]

1 : Tottori University, Hitachi, Yokogawa Electric, NEC, etc.

2 : JX, Idemitsu, Cosmo Energy Group, Showa Shell Sekiyu, Tonen General, Taiyo Oil, Fuji Oil Company, Asahi Kasei, Sumitomo Chemical, Maruzen Petrochemical, Mitsui Chemical, JSR, Nippon Shokubai, ZEON, Mitsubishi Chemical, Showa Denko, Daicel, Denka, Tosoh, Nippon Steel and Sumikin Chemical

④ [Government] New Index Development Project Using Big Data

- This project aims to use **big data such as POS data which private sector companies possess, SNS data, etc.**, accumulated in cyber space, to **complement existing governmental statistics, and develop new indices for accurately determining economical trends and reporting them promptly**

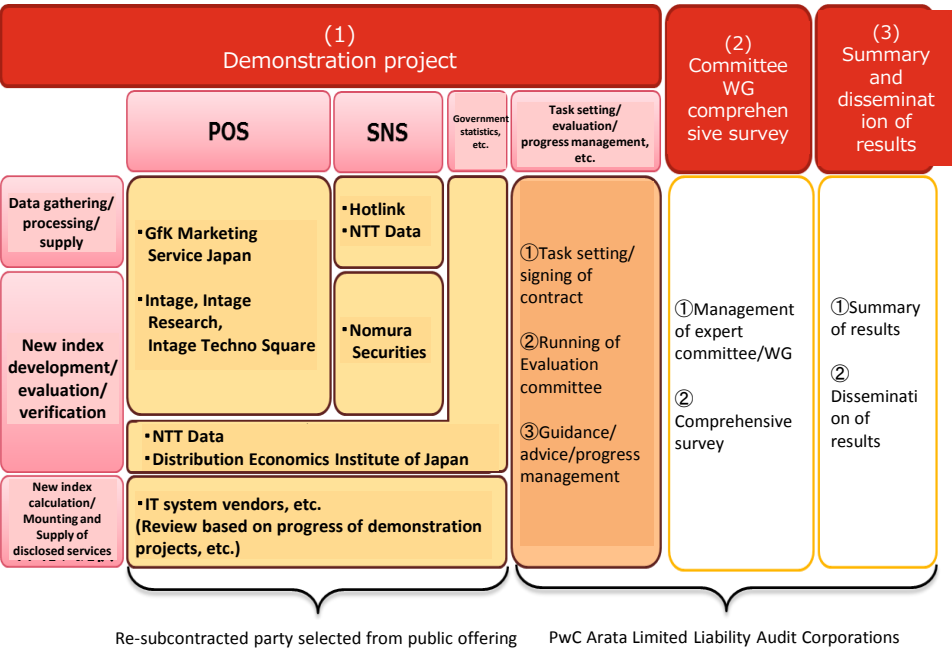
[Details of implementation]

In 2016, POS data will be procured from retailers, **limited to the "home appliance" field**, and demonstrations will be carried out first for the following.

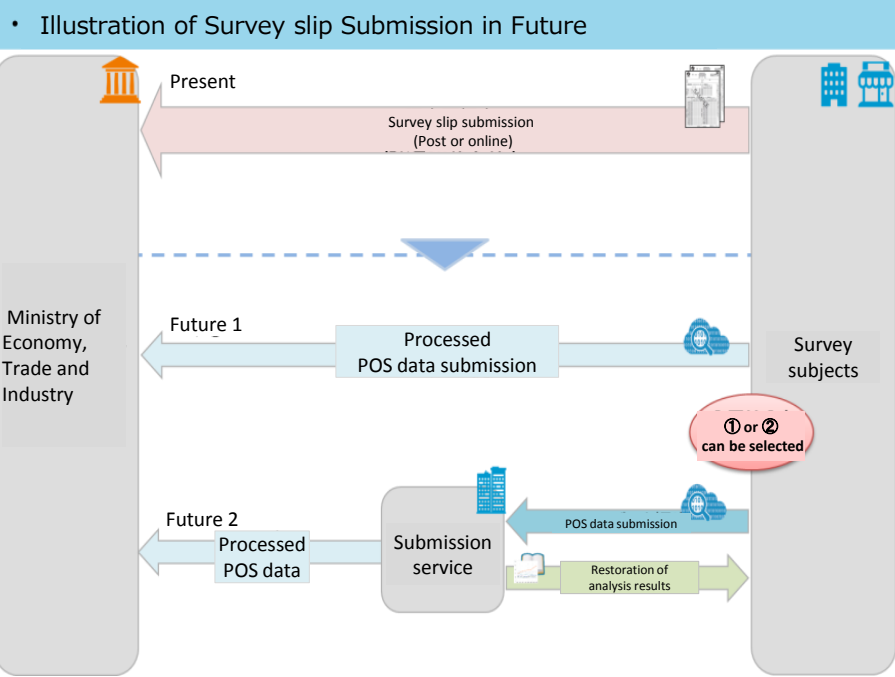
- Development of new indices which can substitute/complement existing government statistics (survey of dynamic statistics of commerce).
- Development of new indices with high added value by linking big data such as POS and SNS, etc. and government statistics data, etc.

In addition, **hold the "Expert Committee on Use of Big Data"**, and review details of the establishment of regulations/rules required for the use of big data in government statistics.

[Implementation system]



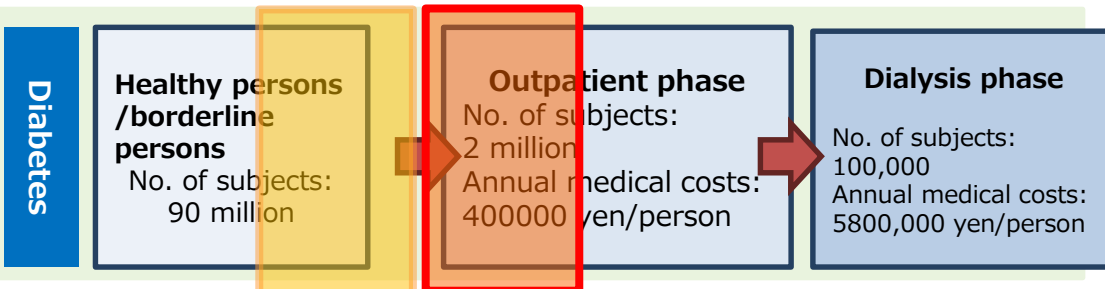
Re-subcontracted party selected from public offering PwC Arata Limited Liability Audit Corporations



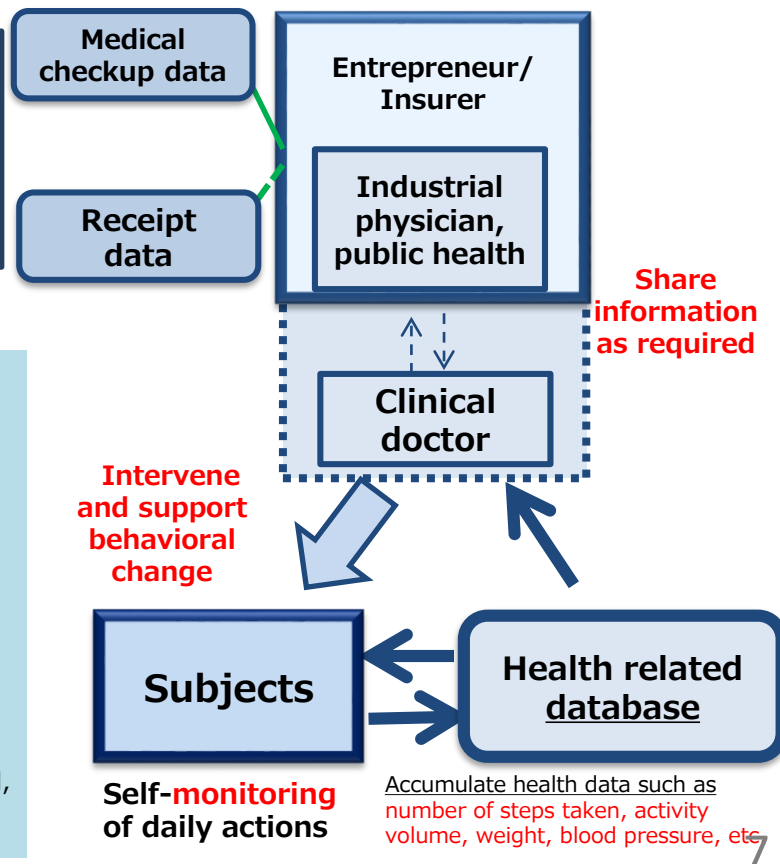
⑤ [Medical/Health①] Health Information Infrastructure Establishment and Usage Promotion Project

- This demonstration project aims to specifically enhance symptoms through intervention for patients with mild diabetes by companies, insurers, medical practitioners, etc. using health information etc. As part of these efforts, **the required data formats, health information collection methods using IoT terminals, and intervention methods for subjects are verified.**
- In particular, **given that the format and definition of health information differ by equipment and manufacturer, and the smooth accumulation and use of information is difficult,** data formats will actually be devised and used. This project will aim to promote services using health information, etc. Accumulated from IoT equipment.

[Subjects]



[Image of Project] **Monitoring** based on health related data/alert changes in symptoms



[Mainly used health information, etc.]

➔ Through demonstration projects and review meetings (also participated by Cabinet Secretariat, Ministry of Health, Ministry of Internal Affairs and Communications) installed under the Next Generation Medical ICT Infrastructure Council, establish rules such as data exchange regulations (data format).

(Examples of data)

- ① Information required for monitoring of daily life
 - ...**No. of steps/activity volume** (Measure with wearable equipment such as pedometer, etc., smartphone, etc.)
- ② Information for alerting changes in symptoms (Measure at workplace, etc.)
 - ...**Weight, blood pressure, HbA1c**, blood sugar, etc.

Accumulate these health information, test information, etc., together with information on date/time of measurement, measurement equipment, testing organization, testing method, etc. from the viewpoint of assuring data quality, and define the format of about 60 information items.

(Reference) **METI 2015 Supplementary Budget “New Industry Models Creation Infrastructure Establishment Project for Promoting IoT”**
 List of consortiums selected for project for promoting behavioral modification using individual health and medical care information possessed by companies, insurers, etc.

Type	Representative Organization	Consortium	Participating Organizations/Main Co-sponsors	No. of participants (Top: Results as of November, Bottom: Scheduled no. of persons)			Outline
				Moderate patients※1	Borderline patients※2	Healthy persons※3	
Leading company	Ewel	Collabo Health	Analysts and industrial medical universities	105 (220)	115 -	860,000	<ul style="list-style-type: none"> Participated by Konica Minolta, Autobacs, PFU, Nippon Life Insurance, Orix Group, Nissan, and 18 other organizations. Collaborating with industrial medical universities and industrial physicians of companies, productivity loss amount is compared in addition to activity volume and analyzed.
Leading company	Minacare	Health and medication information collaboration by corporate insurers using Genki Lab	Daiichi-Life, Terumo Health Life Insurance Society, Toppan Group Health Life Insurance Society, LIXI Health Life Insurance Society	29 (50)	110 (100)	160,000	<ul style="list-style-type: none"> Participated by Daiichi-Life, Terumo Health Life Insurance Society, Toppan Group Health Life Insurance Society, LIXI Health Life Insurance Society. Health and medical information possessed by corporate insurers and subscribers is linked by systems to realize comprehensive support.
Leading company	SMS	Health improvement by personal nutritionists	Mizuho Information & Research Institute, Mizuho Bank	- -	123 (180)	77,000	<ul style="list-style-type: none"> Participated by Mizuho FG corporate health insurance association (Mizuho Health Insurance Society) and SMS. Escort-type services are provided where the health conditions of subjects are generally tracked by the individuals, doctors, nutritionists, etc., and nutritionists provide diet and exercise support personally everyday using apps and PC.
Leading company	Nomura Research Institute	Marunouchi Healthy Town Development Association	Mitsubishi Estate, Nippon Parking Development, Japan Medical Checkup Association, Life Science Institute, Carna Health Support	57 (60)	4 -	98,000	<ul style="list-style-type: none"> Participated by companies located in the Marunouchi area (Mitsubishi Chemical, Tokio Marine and Nichido Fire Insurance, Nomura Securities, Asahi Newspaper, Mitsubishi Estate, Asahi Life). Programs for preventing serious cases are carried out regionally using wearable equipment and monitoring alert functions.
Small/medium company	Junpukai	Creating healthy companies	Ryobi Holdings, Japan Health Insurance, Association Okayama branch, Toppan Printing, Tanita	85 (100)	40 -	8,400 (Japan Health Insurance Association Okayama branch : 395000)	<ul style="list-style-type: none"> Participated by Ryobi Holdings including bus and taxi drivers. Tie-up with Japan Health Insurance Association. Provides guidance to subjects and create programs using lifestyle disease recovery plans, etc., and provide monitoring functions using corporate management functions.
Regional	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING	Support for continuous prevention of serious cases of diabetes in Saitama Prefecture using IoT	NTT Data, Japan Medical Association, Saitama Prefecture Medical Association, Saitama Prefecture	54 (100)	- -	(4 participating cities National Health Insurance: Approx. 480000)	<ul style="list-style-type: none"> Participated by Saitama Prefecture municipalities (Ageo-shi, Tokorozawa-shi, Saitama-shi, Sayama-shi). Prefectures, municipalities, cities, towns, and villages collaborate with doctors and provide IoT programs.
Regional/Leading company	Aichi Health Promotion Public Interest Foundation	Team Shichifukujin	Seirei Social Welfare Community, Nagoya University, Japan Oracle, ABeam Consulting, Medical Data Vision Omron Healthcare	168 (200)	- -	93,000	<ul style="list-style-type: none"> The project will be carried out by tying up with 23 medical organizations and two health guidance organization and sharing knowhow through workgroups. Sends messages and calls for attention via the Shichifukujin Apps. Analyzes and reviews machine learning using accumulated data.
Leading company /Regional	Nagoya University	Health navigator	Toyota, NAC, Nippon Systemware, WOWOW Communications, Toyota City	152 (130)	- -	340,000	<ul style="list-style-type: none"> Participated by employees of Toyota head office and their doctors. Aims to realize visible data using the Health Navigator, and services such as virtual staff (regular sending of advice), verification of medical conditions call center nurses, face-t-face health guidance by industrial doctors.
Total				650 (860)	392 (280)	Approx. 1,640,000 ※Japan Health Insurance Association, Japan Health Insurance	※1:Includes subjects whose diabetes diagnosis index (HbA1c) is above 6.5 and require medication. ※2:Includes subjects whose diabetes diagnosis index (HbA1c) is above 5.6 but below 6.5 and require medication. ※3: No. of employees per company (≠health insurance subscribers excluding dependents)

⑤ [Medical/Health②] Health Promotion Model Business Using Life Data Analysis

- Demonstration projects aimed to investigate systematic and technological tasks when applying the following technologies in healthcare industry, etc. starting with genetic testing.
 - ① Statistical analysis method for efficiently analyzing relations between multiple genetic risk factors and diseases
 - ② Technology for analyzing DB with large data volume such as genome information, etc. in encrypted state
- By establishing these technologies, aim to ①enhance accuracy of onset risk forecast of lifestyle diseases, etc., and ②establish environment where life data can be used safely.

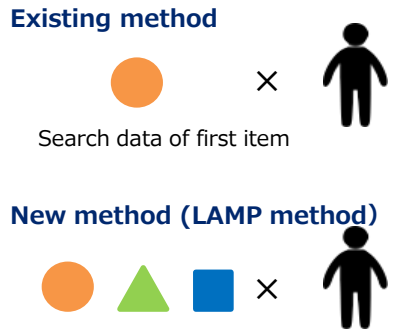
① Demonstration of statistics analysis method for efficiently determining multiple risk factors

[Present situation]
 • Search relation of risk factors and diseases, etc. 1 on 1.
 Cannot evaluate effects of overlapped multiple factors.
 → Can only explain some of the genetic causes of diseases, etc.

[Implementation system]
(i) National Institute of Advanced Industrial Science and Technology
 [Database used for demonstration]
 Biobank Japan (Disease biobank by Univ. of Tokyo, RIKEN, etc.) DB
 (Gene analysis information+ clinical information)

(ii) GeneQuest
 [Database used for demonstration]
 DB accumulated and constructed in own company's inspection operations
 (Gene analysis information+ questionnaire information)

• Using database containing genetic analysis information and clinical information, comprehensively analyze relations between combination of multiple factors and diseases, etc. (Analysis method : Limitless-Arity Multiple testing Procedure (LAMP))
 • Verify if analysis is possible using realistic calculation resources (time, cost, performance, etc.)
 → Improves accuracy of risk prediction of lifestyle diseases, etc. based on genetic analysis



Analyze correlation with multiple gene mutations by searching the data of multiple items

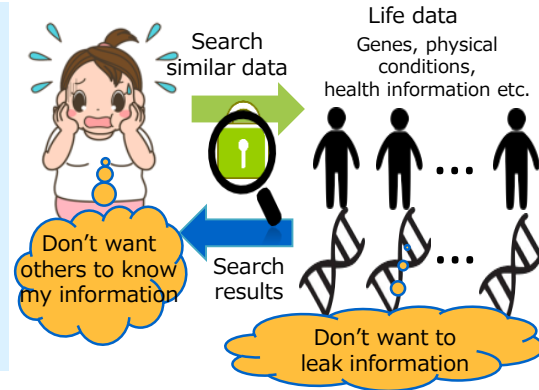
② Demonstration of secure multiparty computing technology which can be applied to DB with large data amount

[Present situation]
 • Secure multiparty computing technology for large data volume with high sensitivity such as genome information, etc. has not been established

[Implementation system]
SBX
 [Platform used for demonstration]
 Life science information analysis integration platform Garuda (can mount various information analysis tools, DB). Spread extensively to medical and health information analysis)

• Verify if secure multiparty computing technology applied to DB with small data volume such as compound structure DB can also be applied to DB with large data volume such as genome information, etc.
 → Reduces leakage risks of information with high sensitivity such as genome information, etc.

Illustration of secure multiparty computing technology

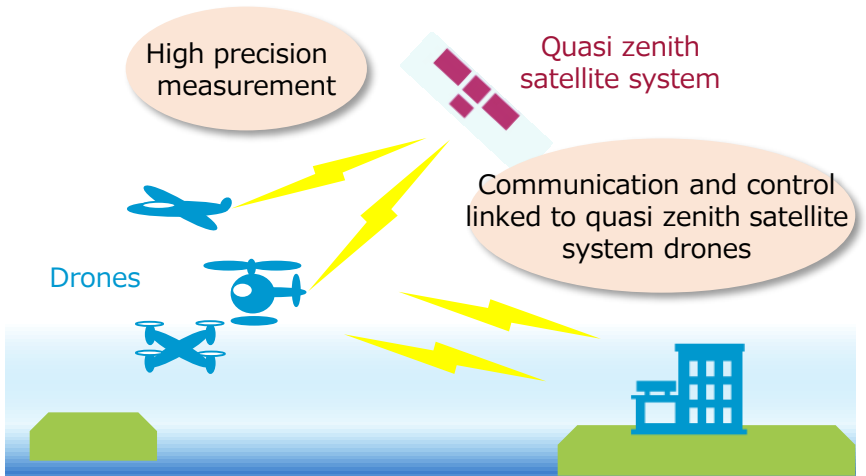


⑥ [Distribution] Drone IoT Demonstration Project

• To **realize safe distribution activities** by unmanned flying to remote islands, etc. using drones with the Quasi zenith satellite drones, this project aims to conduct flight demonstrations for accumulating various data (Kamiamagusa-shi to Yushima, Kumamoto Prefecture) and survey research for commercialization.

■ Project details

1. Development and demonstration of drones using Quasi zenith satellite system
2. Survey and research for commercialization
 - ① Based on the results of flight demonstrations, investigate systematic and technical issues of commercialization.
 - ② Investigate safety measures including security measures
 - ③ Survey of commercialization needs



■ Implementation system

Led by: Hitachi Zosen
Drones: EnRoute, Yamaha Motor
Communication and operating system
Demonstration municipal: Kumamoto Prefecture, Kamiamakusa-shi

■ Demonstration area (Kamiamakusa-shi, Kumamoto Prefecture)

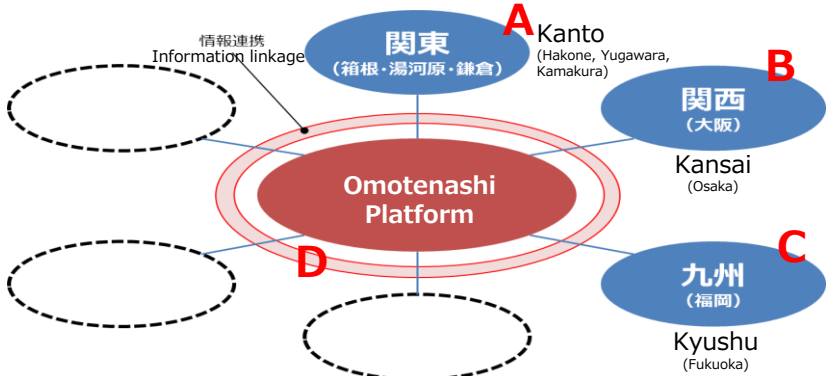


Implement demonstration experiments in Kamiamakusa-shi, Kumamoto Prefecture on Nov 29, 2016

⑦ [Service] IoT-Based Service Demonstration Project

- To realize "Omotenashi" service, this project aims to carry out demonstrations on sharing/using data related to attributes (gender, age, nationality, etc..) and history of actions (accommodations, shopping, movement, etc..) between service providers with consent from the visitors to Japan, and providing advanced and diverse service /payment environment.
- In the demonstrations, efforts will be made to respond to systems in individual services, and rules will be established on dealing data formats for sharing and using data between various service providers with different systems.


Demonstrations were started at actual sites from October this year. Aim for use by foreigners visiting Japan exceeding 10000 persons within the year.




Construction of "Omotenashi Platform" D
 テーマ: Information linkage between various service platforms
 Implementation system: Deloitte, Dai Nippon Printing, etc..

➡ **Establish rules on data exchange regulations (data format) via demonstration projects**


(Example of data items)
 userID,email,phone,firstname,middleName,lastName,sex,gender,blood,birth day,language,nationalities,country,state,city,wedlock,family,work,hobby,inte rest,smoke,allergyFood,arrivalDate,departureDate,tourType,purpose,headco unt,member,paymentNumber,paymentType,shop,item,currency,quantity,pric e,amount ...

Kanto (Hakone, Yugawara, Kamakura) local demonstrations A
 Theme : New services using biometrics authentication, etc..
 Implementation system : JTB Corporate Sales, Liquid, Hakone Onsen, Yugawara Onsen, etc..


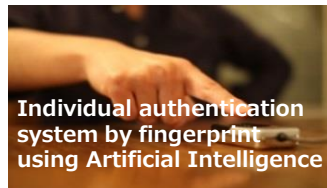
- Settlement by biometric authentication
- [Checkin/Checkout](#)
- Delivery and receipt of goods
- Provision of regional information in multiple languages

Kansai (Osaka) local demonstration B
 Theme : New settlement (Total Wallet, etc..)
 Implementation system : Panasonic Group, Mitsui Sumitomo Card, Dai Nippon Printing, Kaiyukan (Aquarium), etc..


- Register multiple payment means anywhere, anytime using a smartphone, and carry out biometrics authentication
- Provide multiple-language information linked to signboards, signage, etc..

Kyushu (Fukuoka) local demonstration C
 Theme : Broad, horizontal information usage and promotion of consumption
 Implementation system : JTB, JTB Tourism Research & Consulting , JCB, JSTO, NTT Advertising, Kyushu Economic Federation, etc..


- Issue card type gift certificate linked to mobile phone apps, and in addition to attribute information, gather access logs/GPS information/settlement history, etc., and provide service

Liquid Marketing, Inc.
1st IoT Lab Selection Grand Prize Winner

Individual authentication system by fingerprint using Artificial Intelligence
Institutional issues
 Can verification of actual passport based on Hotel and Ryokan Management Law be substituted with fingerprint authentication system
 ↓
Use of gray zone resolution system
 Enable passport verification of foreign tourists visiting Japan when paying for shopping and checking into hotels, using fingerprint only .
 →Use for demonstration projects

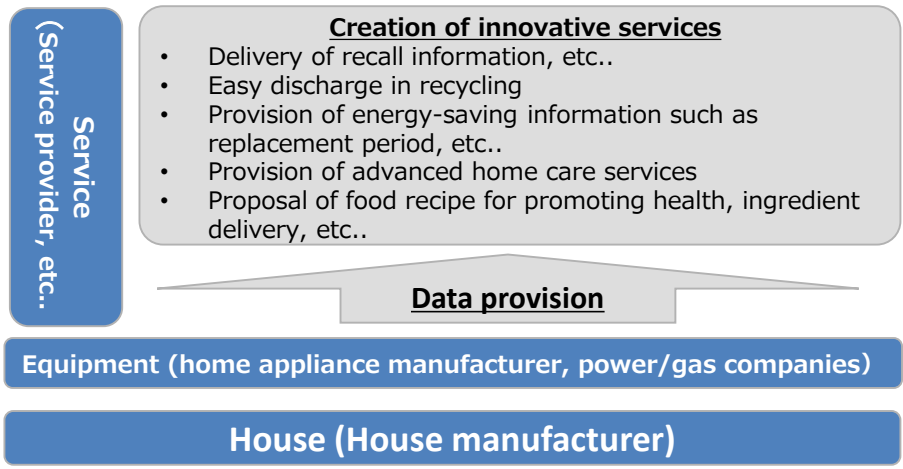
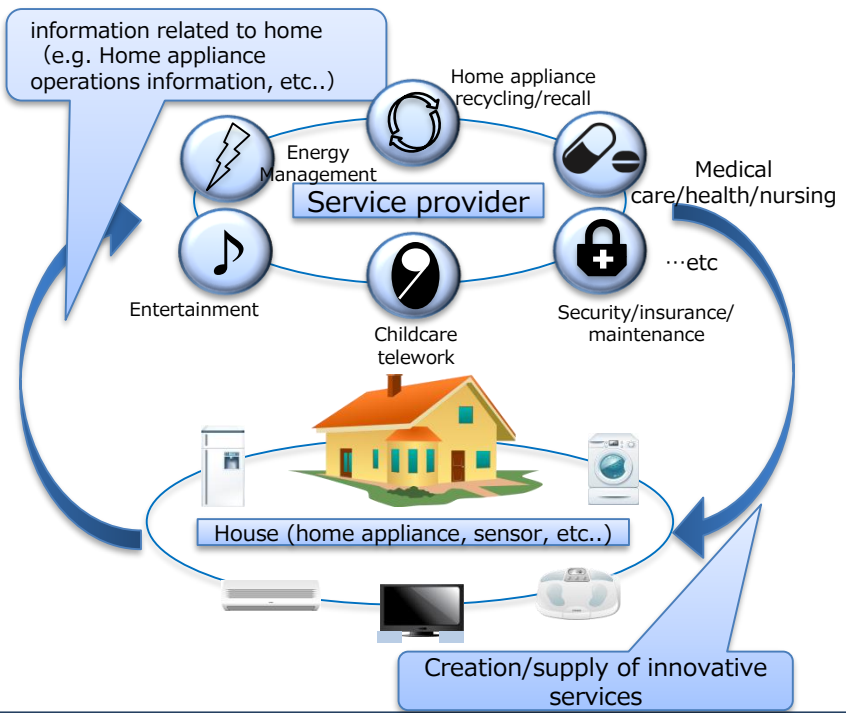
⑧ [Smate home] Data Usage Environment Establishment Promotion Project for Smart Homes (New)

- In the future, with the increase in equipment linked inside the household and improvement of **volume/quality of data which can be acquired**, it is hoped that this project will help **create innovative services** enabling customization of living space and improvement in product lifecycle, in addition to the visualization of energy consumption **and On/Off operations of home appliances**.
- Through demonstrations, the environment required for creating new services will be established, such as devising common industrial cross-sectional guidelines in data collaborations taking into account privacy.

Image of Project

- Construct an environment which enables equipment to be connected to the network in the home to be brought in to acquire/provide data in an open manner through corporate consortiums made up of house manufacturers, home appliance manufacturers, power and gas providers, and service providers.
- Demonstrations will also be carried out to create use cases such as comprehensive services in the product life cycle and services meeting needs of private companies using various data related to the home.

[Outline of innovative services born from data collaboration]



Resolve social issues

(E.g.) •Support lifestyles for promoting the advancement of home care using life logs and advance of women into society.
•Promote recall measures and discharge of disposed home appliances through the proper route through the enhancement of serviceability of home appliances.

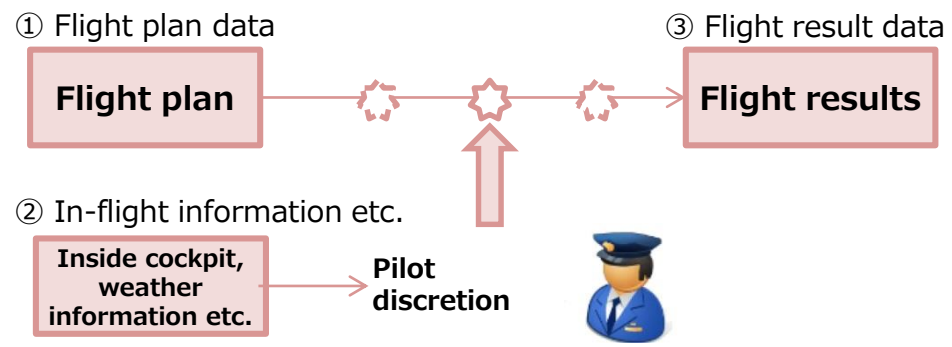
Satisfy corporate and individual needs

(E.g.) •Develop products meeting consumer needs by analyzing consumer information, equipment operation state.
•Realize comfortable lives by grasping the state at home from outside and automatic control of home appliances.

⑨ [Aircraft] Aircraft System Advancement Project for Supporting Piloting (New)

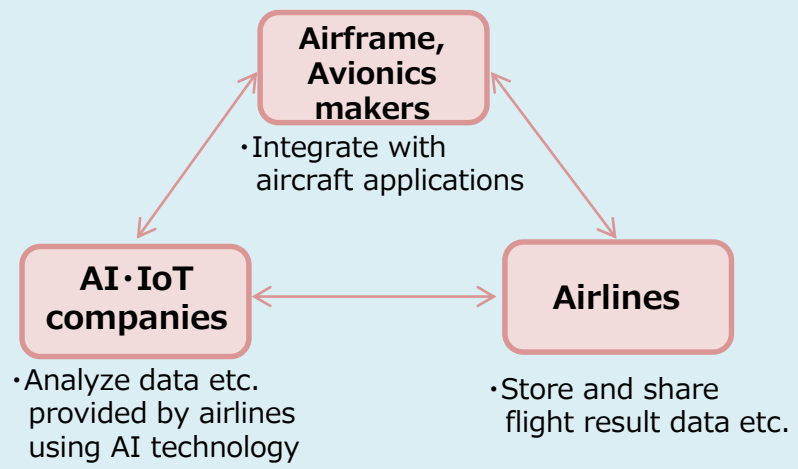
- Global air transportation demand will expand at an annual rate of 5% in the coming years. While the number of pilots is expected to double by the year 2030, there will still be a deficit of approximately 8,000 pilots per year, raising the concern of the need for more skilled pilots.
- Utilizing accumulated navigation data and AI technology, this project aims to carry out demonstrations for realizing sophisticated and safe aircraft systems such as systems for supporting pilots with assistance on navigational flight plan alterations during bad weather**, which is currently manually handled by the pilot.

[Demonstration details]

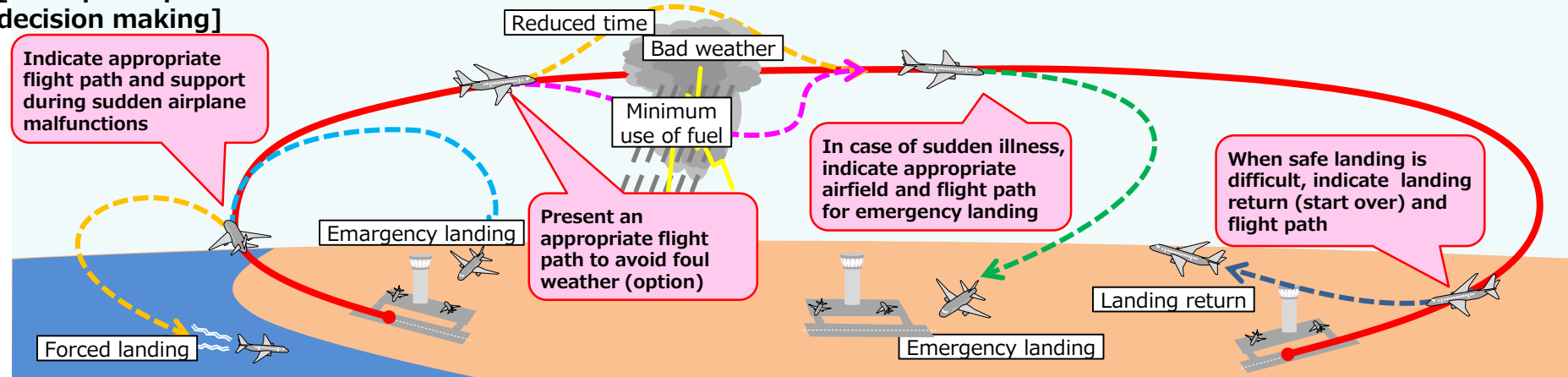


By utilizing AI and IoT technology for information ①~③, carry out demonstrations providing that aircraft systems that are more advanced and safer than systems supporting pilot judgments.

[Image of implementation system]



[Example of pilot assistance for decision making]



⑩ [Mobility] Smart Mobility System Research & Development and Demonstration Project

Purpose and Details of Project

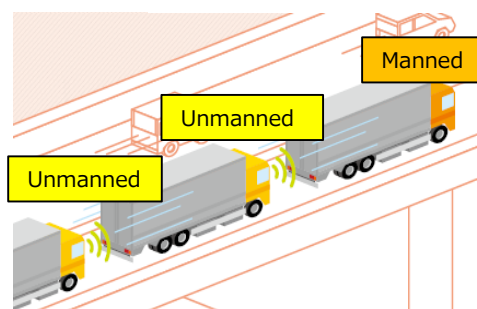
This project aims to demonstrate the use of a sophisticated autonomous driving system that will help contribute to the advancement of energy saving for the transportation sector, that takes in to consideration safety, social receptivity, economic efficiency as well as the global outlook, as well as to investigate the necessary technology, business environment and such to implement it in to society.

⇒ Sophisticated autonomous driving system **Convoy (columnar) driving, Automatic valet parking**, Use of exclusive zones, etc. for **Last mile autonomous driving** (Terminal traffic system)

Convoy (columnar) driving

Select location for 2016 demonstration run
Implement demonstration experiment at test course in 2017

Future Vision : Actualization of over 3 unmanned trucks driving together on the highway at night in a **truck convoy**



Implementation structure - coordination: Toyota Tsusho

- Test vehicle production, demonstration experiment implementation:
 - Isuzu Motor Co., Hino Motor Co., Mitsubishi Fuso, UD Truck
- Technology necessary for the columnar convoy:
 - Advanced Smart Mobility Co., JTEKT, Nabtesco, Wabco Japan, Nippon Signal Co.
- Evaluation of business model etc.:
 - Yamato Transport, Sagawa Express, Nippon Express, Japan Trucking Association

Required efforts

- Development of electronic connection technology (including brakes)
- Arouse social receptivity (start demonstrations with 2 following cars with persons on board) etc.

Automatic valet parking

Implement demonstration experiment in 2018

Future Vision : Actualization of **automatic valet parking** at **exclusive parking lots** (where there are no pedestrians)



(From Honda Motor Co. homepage)

Implementation structure - coordination: Japan Automobile Research Institute

- Control center development: Fujitsu Ten
- Parking control format development: Aishin Seiki Co.
- Mapping, localizer* format development: Pioneer

Required efforts

- Consensus building amongst the related parties
- Allocate responsibilities (standardization) for vehicles, parking, control center etc.

Lifestyle autonomous driving

Select demonstration location via public offering in 2016
Aim to implement demonstration experiment by 2018

Future Vision : A **new transport service** via the use of an **exclusive zone** is realized, connecting the **'Last one mile'** between the nearest station etc. and final destination location

① Users (elderly people and such) call up and board unmanned vehicle

② Unmanned autonomous driving

③ Users disembark at their final destination (homes etc.)



Nearest station etc.



※ Exclusive zone for autonomous driving vehicles that is void of pedestrians



Final destination (homes etc.)

④ Unmanned autonomous vehicles with return automatically

Required efforts

- Select exclusive area for introduction
- Establishment of system to minimize maintenance and operation burdens etc.

Implementation structure - coordination:

National Institute of Advanced Science and Technology

- Development of small electric karts and systems:
 - Yamaha Motor Co., Hitachi, Toyota Tsusho
- Establishment of small buses utilizing autonomous driving technology:
 - SB Drive, The Japan Research Institute