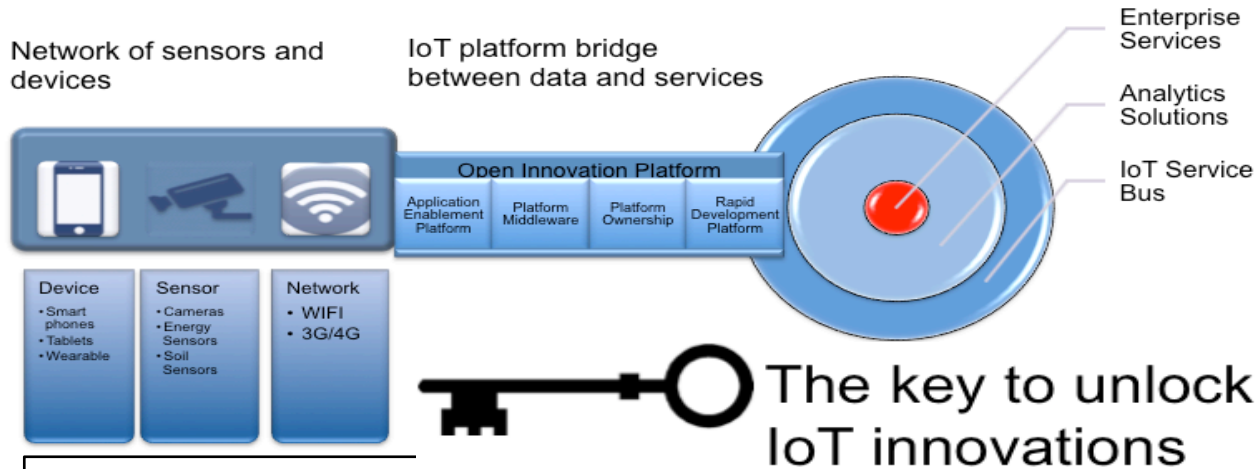


# Project Title: IoT Open Innovation Platform

## Introduction :

The widespread usage of smart phones and smart devices in the network today has transformed the network into a connected web of smart devices. These devices are made smart by the applications developed to provide huge benefits and services to the users. This is the Internet of Things (IoT).

To stay competitive and to be able to capture the potential IoT market, it is important to have the IoT platform and acceleration tools to facilitate the rapid development and adoption of IoT solutions for public and private markets, especially in new upcoming developing ASEAN countries. A common platform would allow integration of data and services from different systems. Thus allowing the combined operation of many different heterogeneous IoT systems onto one common open platform, the IoT open innovation platform.



## Project Members :

Boon Choong Foo, Senior director, MIMOS Bhd; Looi Chin Teong, Senior staff, MIMOS Bhd;  
DR. Hiroyuki Yano, Director General, NICT; DR. Fumihide Kojima, Director, NICT;  
DR. Sun Sumei, Department Head, I<sup>2</sup>R;  
DR. Thu Ngo-Quynh, Department Head, Hanoi University of Technology and Science;  
DR. Dinh Van Dzung, Deputy director, Vietnam National University.

**Application enablement platform** provides abstraction layer to connect to the different devices available. Application dashboard tool to generate information visualization via easy to use interface.

**Platform middleware** provides the necessary integration by adopting common standards. Devices and sensors from different systems and protocols can be connected to the same platform, thus providing connectivity and functionality between heterogeneous platforms.

**Platform scalability** includes private cloud and embedded cloud adoption to provide platform ownership. Services need not be provided from an external party cloud services.

**Rapid development platform** provides the facility to develop and test applications rapidly.

# IoT 4 Layers Architecture

## Application Layer



## Platform Layer



- Application enablement platform
- Platform middleware
- Platform ownership
- Rapid development platform

 **mist**  
MIMOS Internet Services of Things

## Network Layer



- Wired and wireless connectivity
- Edge middleware
- Pervasive network



## Sensor (& Actuator) Layer



- Sensors & actuators
- Embedded middleware
- Mobile devices





## Application Layer



## For Smart Cities/Suburbs



## Platform Layer

- Application enablement platform
- Platform middleware
- Platform ownership
- Rapid development platform



## Network Layer

- Wired and wireless connectivity
- Edge middleware
- Pervasive network



## Sensor (& Actuator) Layer

- Sensors & actuators
- Embedded middleware
- Mobile devices



product  
management



## Application Layer



## Platform Layer

- Application enablement platform
- Platform middleware
- Platform ownership
- Rapid development platform



**For Smart Cities / Smart Suburb**





# 2017: Rural Healthcare POC System



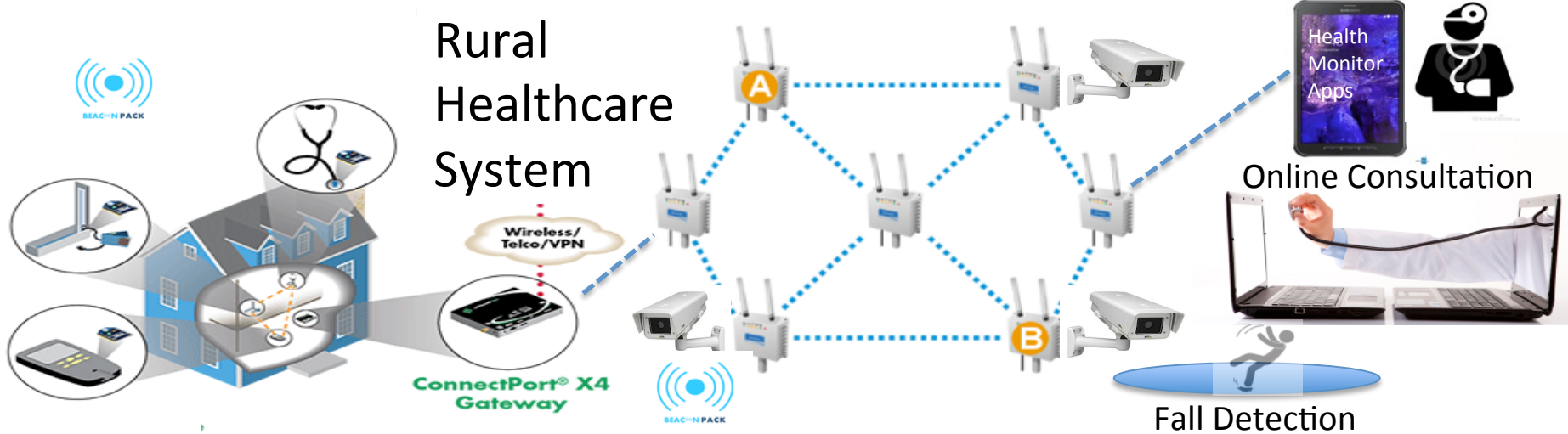
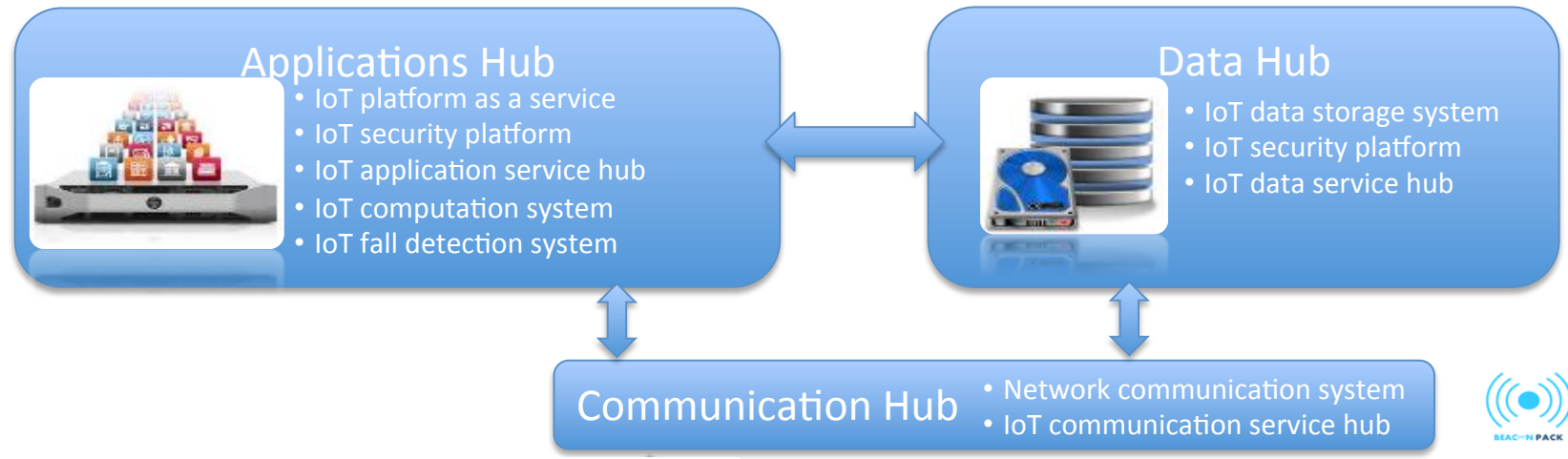
National Institute of Information & Communications Technology, Japan



Hanoi Institute of Science and Technology



MIMOS BHD





## Application Layer



## Platform Layer

- Application enablement platform
- Platform middleware
- Platform ownership
- Rapid development platform



**For Smart Cities / Smart Suburb**



National Institute of Information  
& Communications Technology, Japan



Vietnam National  
University



MIMOS BHD

Private Power Plant  
& Heat Supply Plant

Ocean

Oil Refinery

River

Thermal Power Plant

Environmental  
Monitoring

Factory





# Aquaculture Scrimp Farming POC



National Institute of Information & Communications Technology, Japan

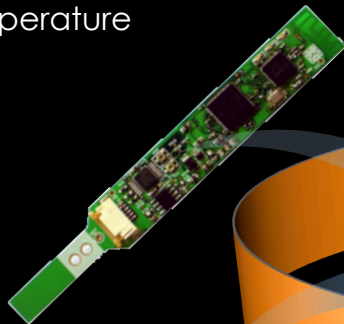


Hanoi Institute of Science and Technology

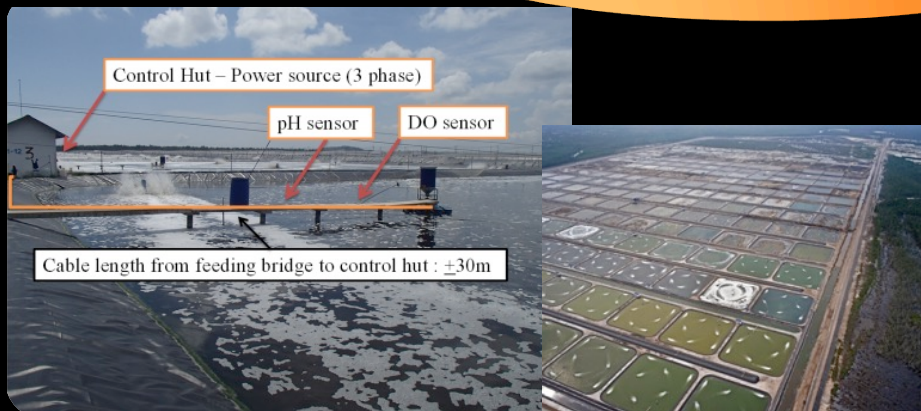
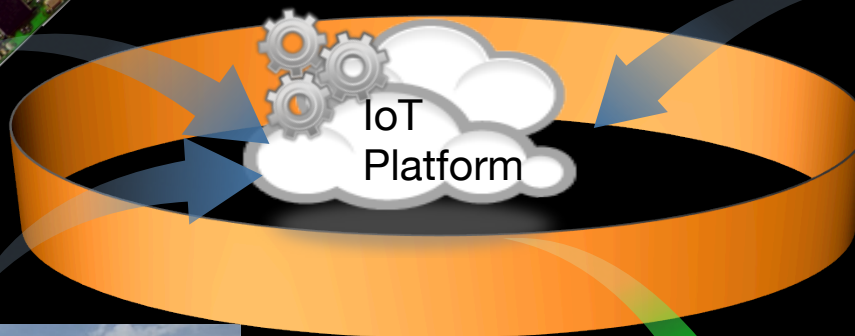


MIMOS BHD

ORP (Oxidation Reduction Potential)  
Temperature  
DO  
PH



Wireless Data Gateway



## Improving Yields

# Potential POC sites & users

Market Vertical	Country/Site	Application	Users	Owners/Partners
Healthcare	Cambodia/Phnom Penh	Rural healthcare monitoring	Clinic nurses	NIPTICT/MIMOS/NICT
Healthcare	Vietnam/Hanoi	Lung function analysis & Fall detection apps	Clinic doctors and nurses. Old people.	HUST/MIMOS
Aquaculture	Vietnam/Haiphong/Bac Lieu	Scrimp farming	Scrimp farmers	HUST/MIMOS/NICT
Environmental	Singapore	Atmospheric pollution	TBD	I2R/HUST/MIMOS
Environmental	Vietnam/Hatinh	River & Sea pollution	Hatinh DONRE Vietnam	VNU/MIMOS



# Project Progress Summary

- 3 sites in Vietnam identified for 2017 Proof of Concept (POC) in Aquaculture, Environment and Healthcare.
  - Hanoi (Rural/Suburban Healthcare)
  - Haiphong/Bac Lieu (Aquaculture Scrimp Farming)
  - Hatinh (River & Ocean monitoring, Environmental)
- Mi-Mist, IoT open innovation platform identified to provide the medium of collaboration in market deployment and technical development.
  - Mi-MIST 1.0 released in August.
  - BK-IoT platform to interface with Mi-MIST platform.
  - Training by MIMOS provided to HUST and VNU in Sept.
  - Sourcing Wi-SUN devices for POC.
- Collaboration activities:
  - Planning Meeting – July 28-29, Hanoi
  - Visits to IoT users: Vietnam Posts and Telecommunications (VNPT) Technology IoT Center, HOA LAC HI-TECK PARK (HHTP) – July 28-29, Hanoi
  - Mi-MIST training workshop – Sept 27-29, Hanoi

