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Internet of Things (IoT)
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Internet of Things in Korea

ISO/IEC JTC 1/SWG 5 (IoT)

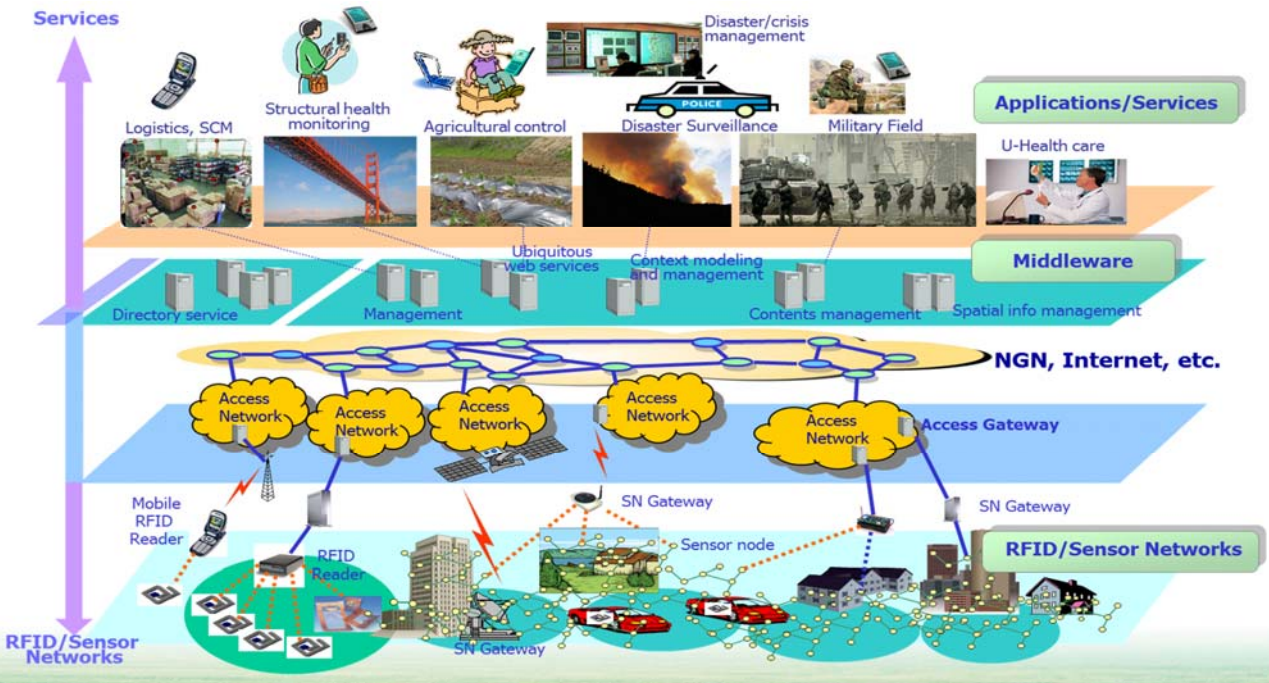
Berlin, Germany, 2013/03/06

Yong-Woon KIM, ETRI, Korea

ETRI 한국전자통신연구원 Electronics and Telecommunications Research Institute

ETRI

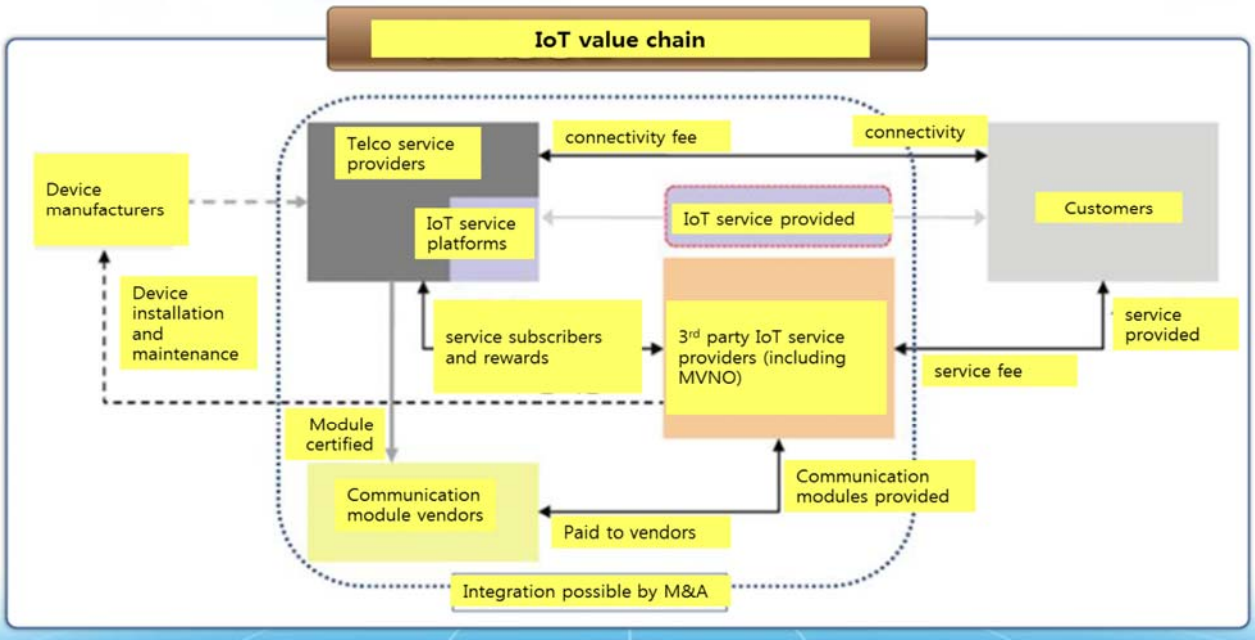
Application view of USN, MKE



Application view of M2M, KCC

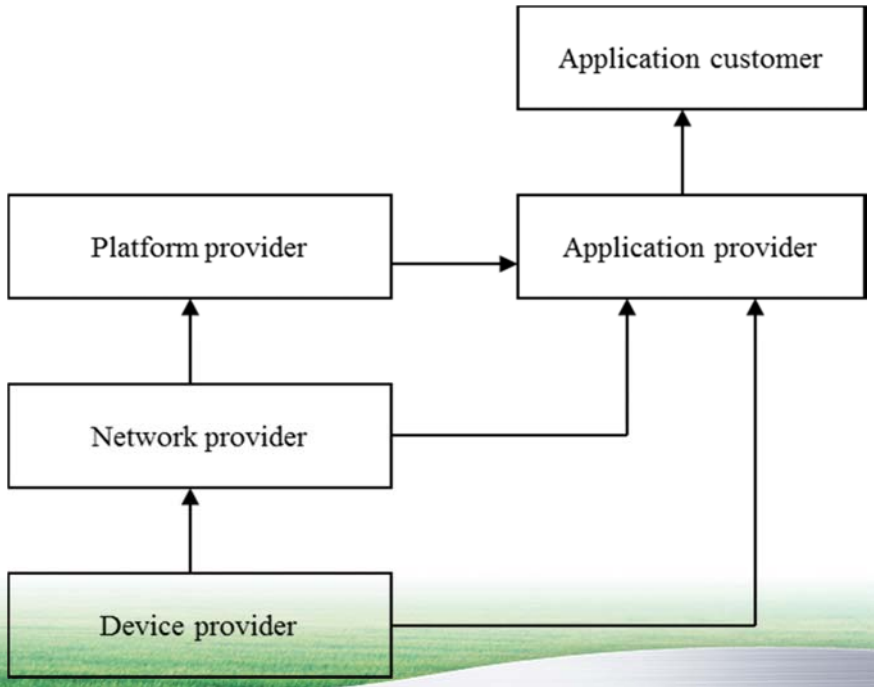
Eco system of IoT (1/2)

- **Korean view**

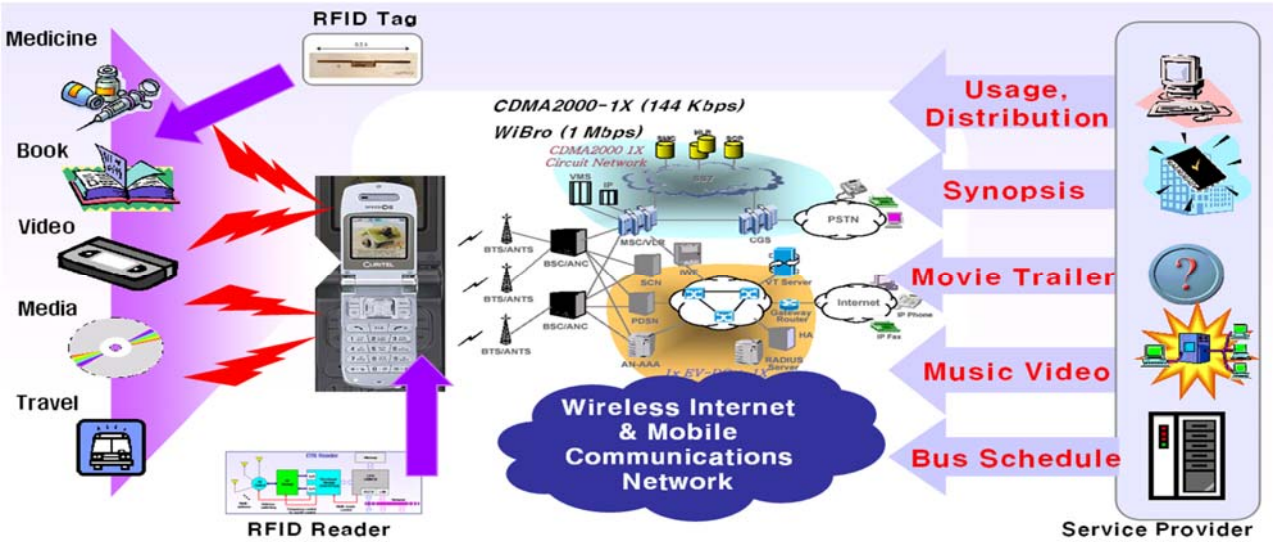


Eco system of IoT (2/2)

- **ITU-T Y.2060 (Overview of Internet of Things)**



IoT use cases – Mobile RFID services



RFID reader is equipped in cell phone; information is delivered to consumer applications; and, consumers enjoy information contents triggered by RFID tag.

IoT use cases – Mobile RFID services

Wine info. service

Tour information service

Bus information service

Genuine article check

Food safety info. service

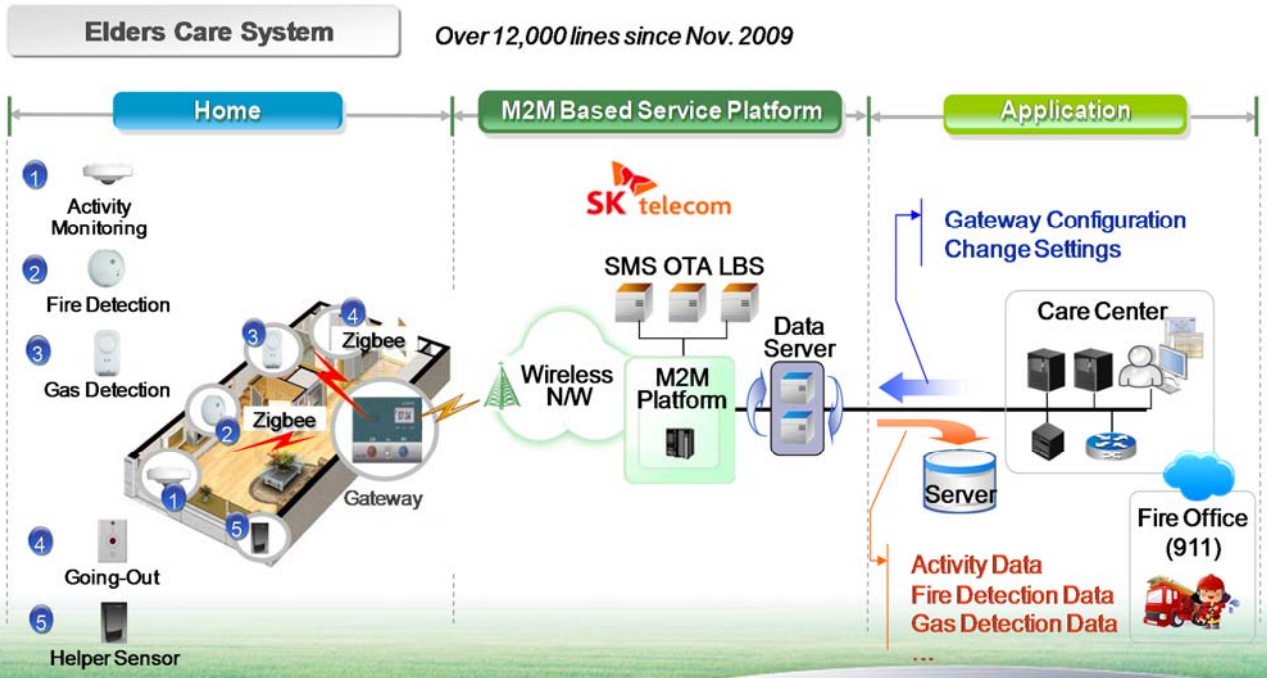
Safe taxi service

City tour info. service

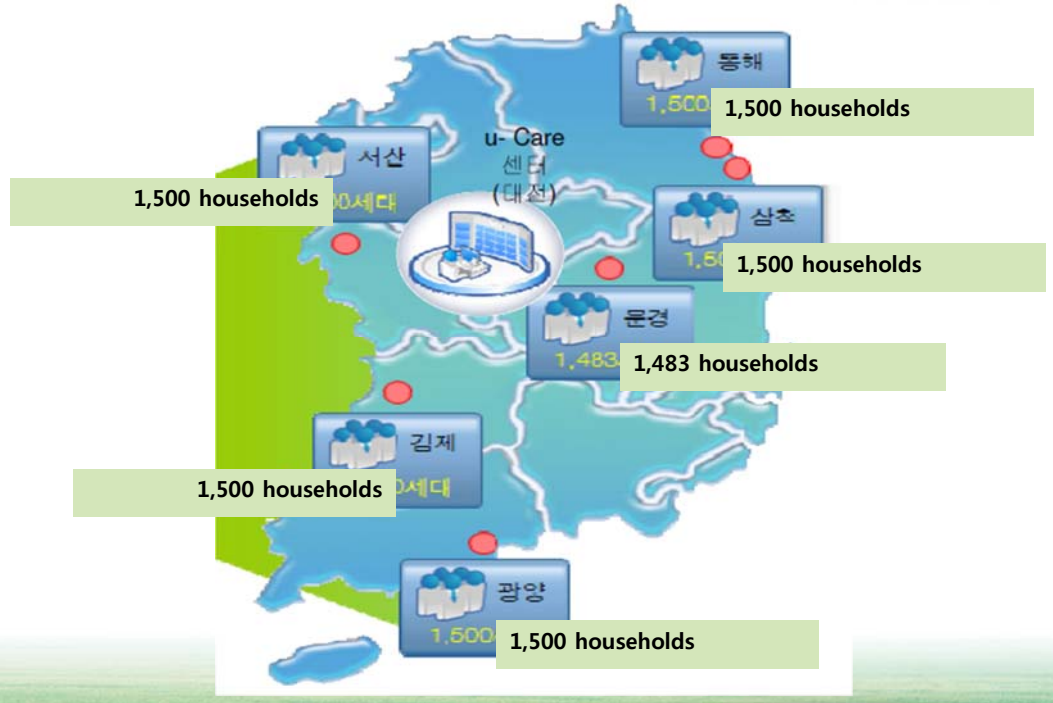
Origin check service

Source: SKT, KTF

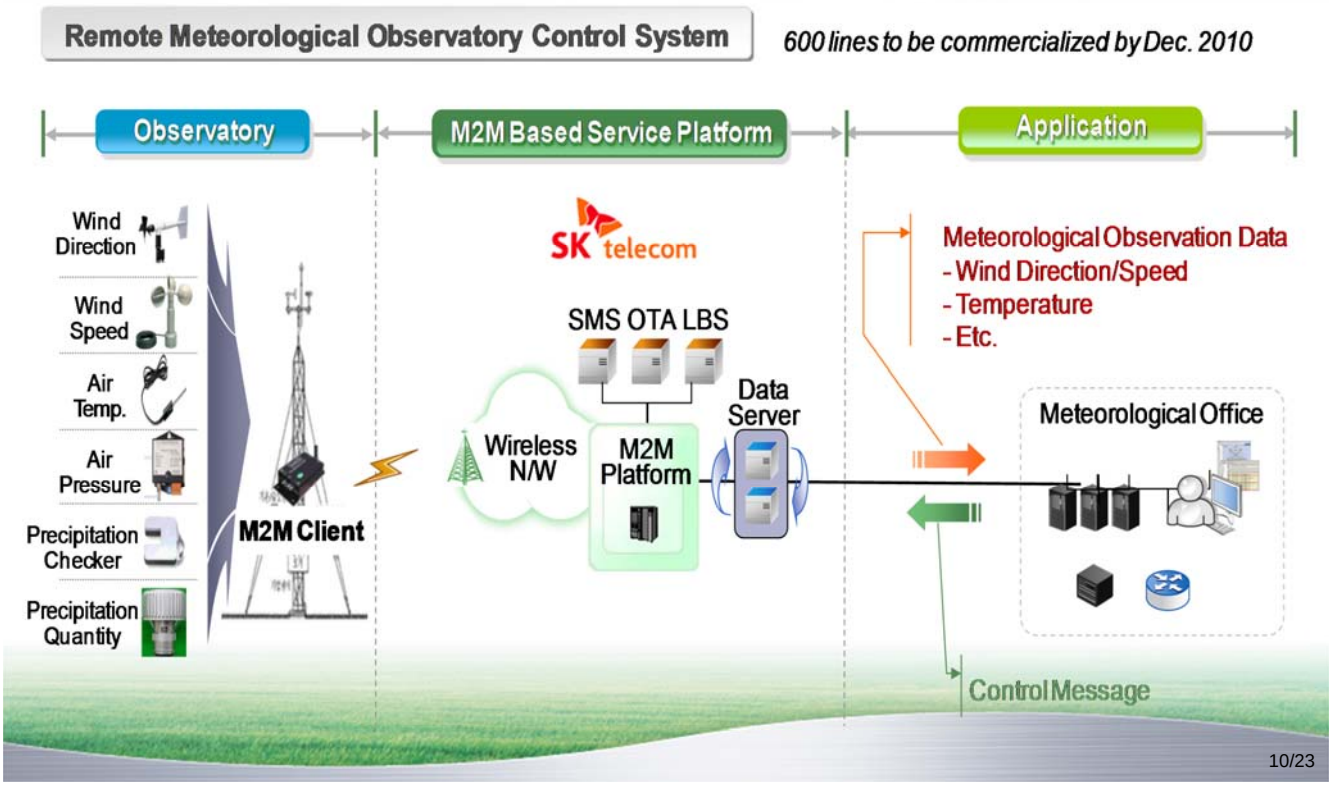
IoT use cases – Healthcare



IoT use cases – Healthcare

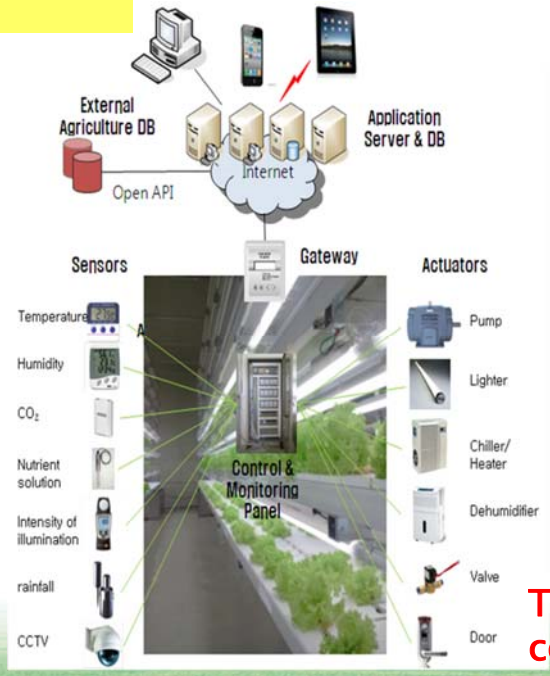


IoT use cases – Weather monitoring



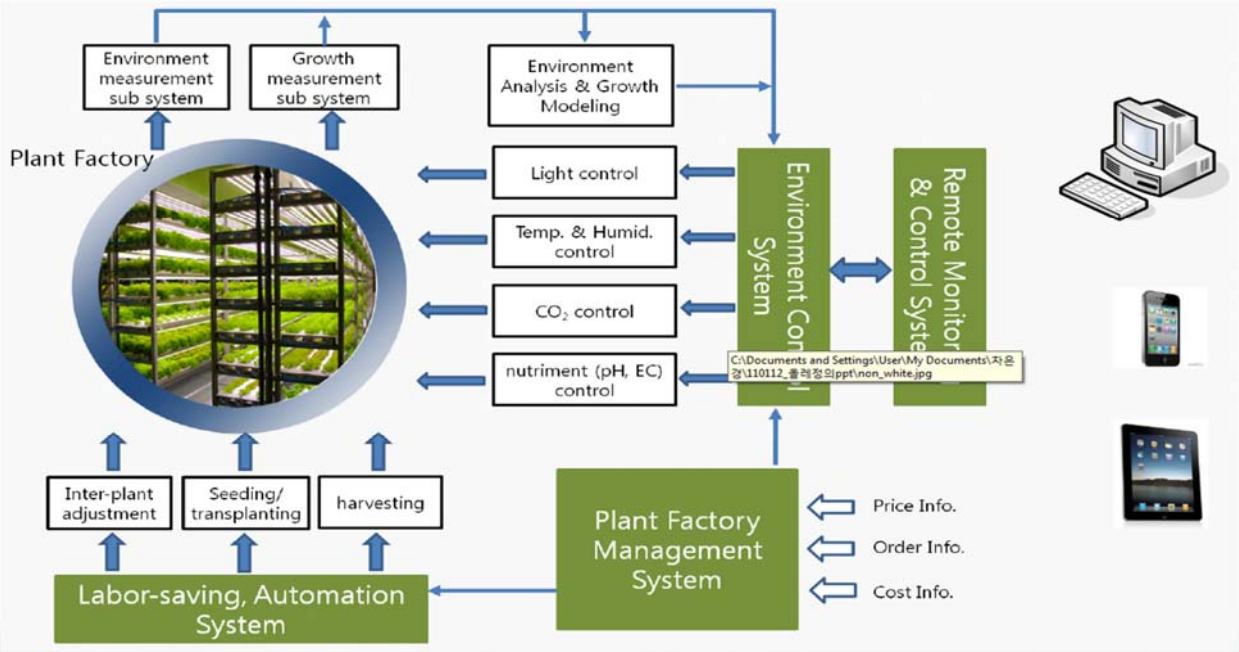
IoT use cases – Smart farm

Smart farm



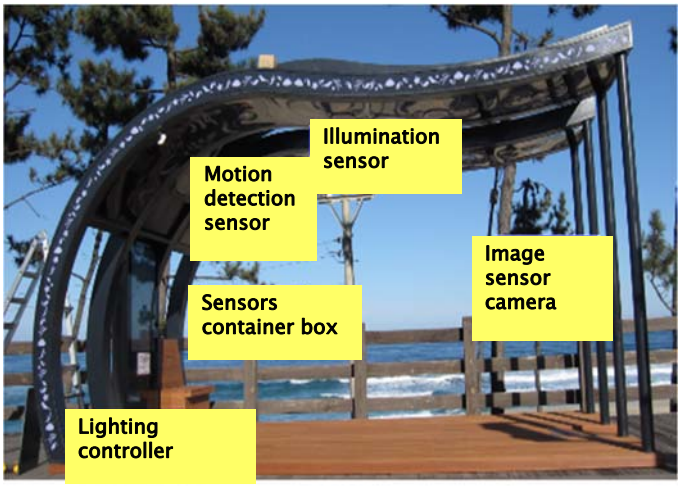
The things in the agriculture could talk to other things and consumers.

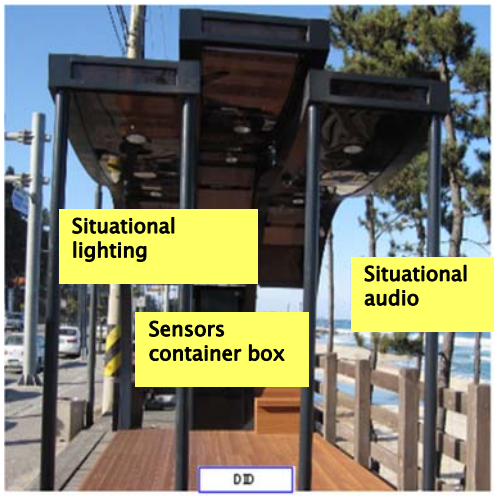
IoT use cases – Smart farm



IoT use cases – Things in a beach

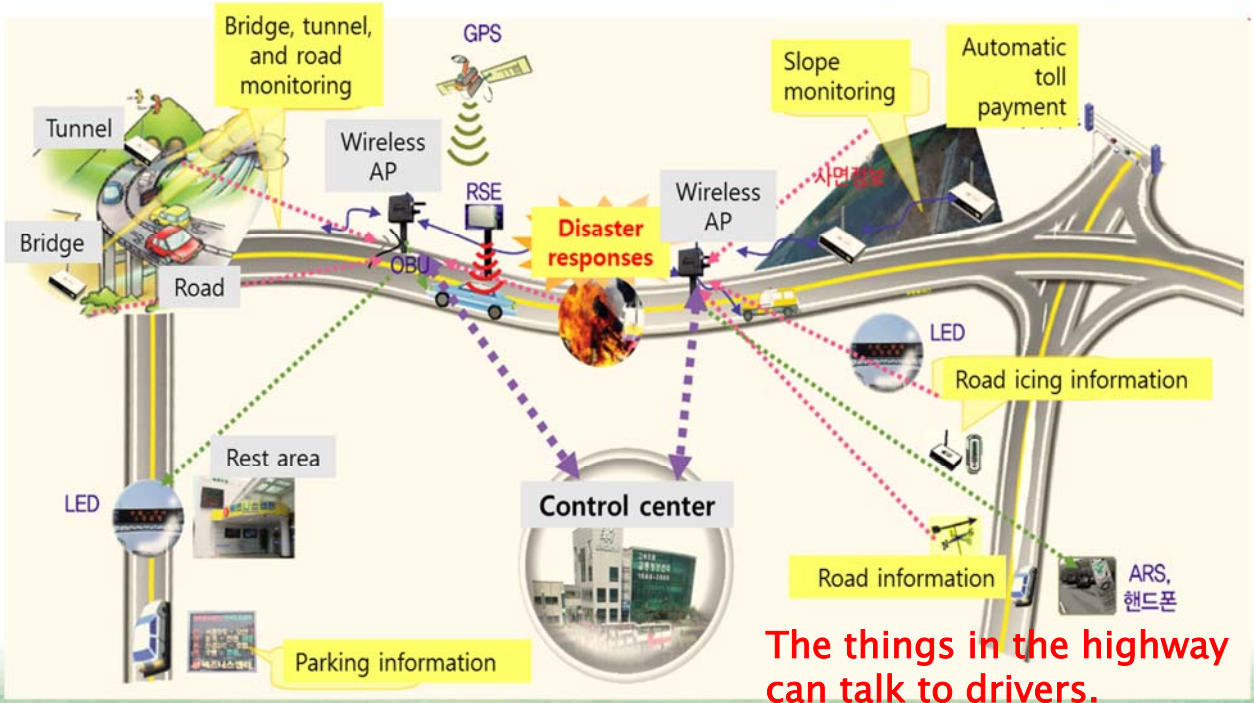
Green rest area





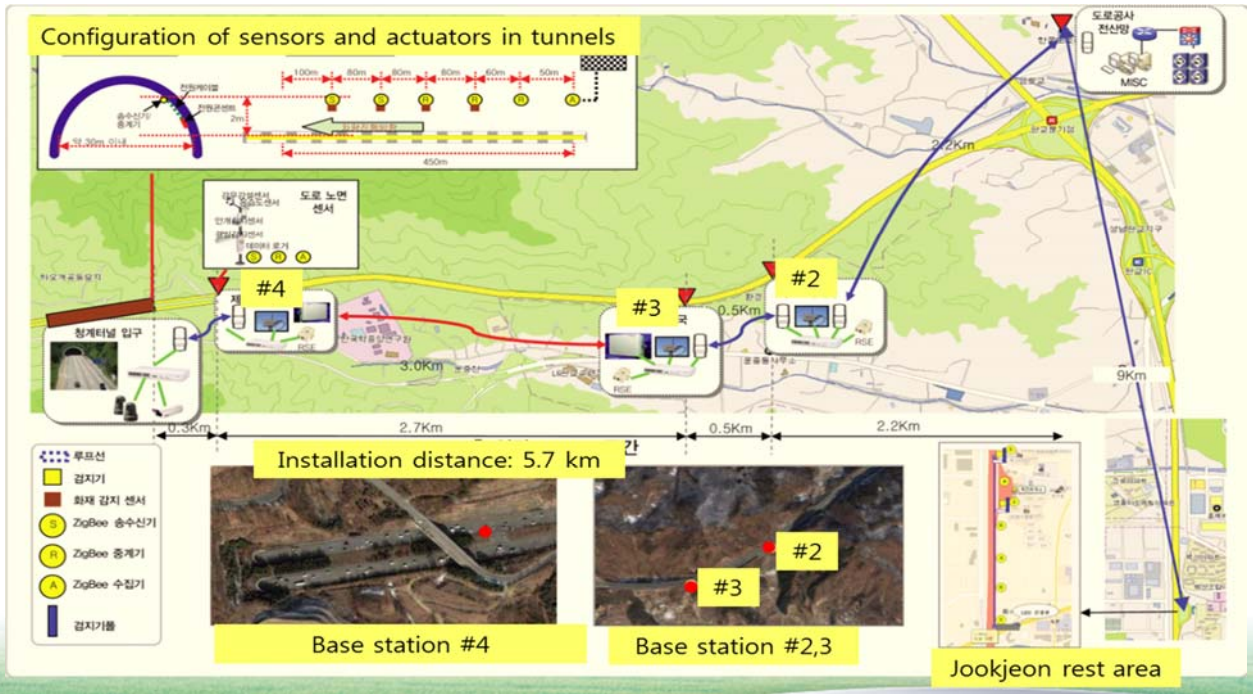
The things in the beach make people feel comfortable and happy.

IoT use cases – Things in the highway

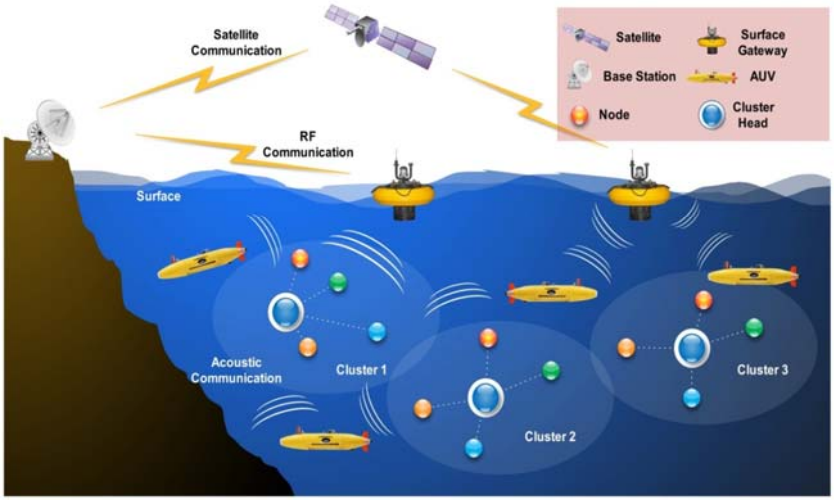


The things in the highway can talk to drivers.

IoT use cases – Things in the highway



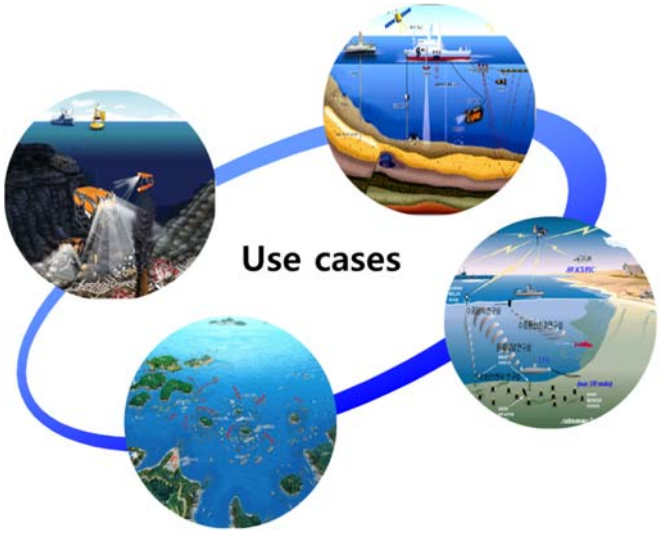
IoT use cases – Things in the sea or river



Challenges:

- Signal propagation speed: 1,500m/s, slower than radio by 10^5
- Narrow bandwidth: 30kHz – 70kHz
- Harsh communication environment: path loss, noise, multi-path, Doppler spread, etc.

IoT use cases – Things in the sea or river



Acoustic communication can make it possible for the things in the sea and river to talk to each others and outside the surface

IoT use cases – Things on the street

Cheonggyecheon stream in Seoul

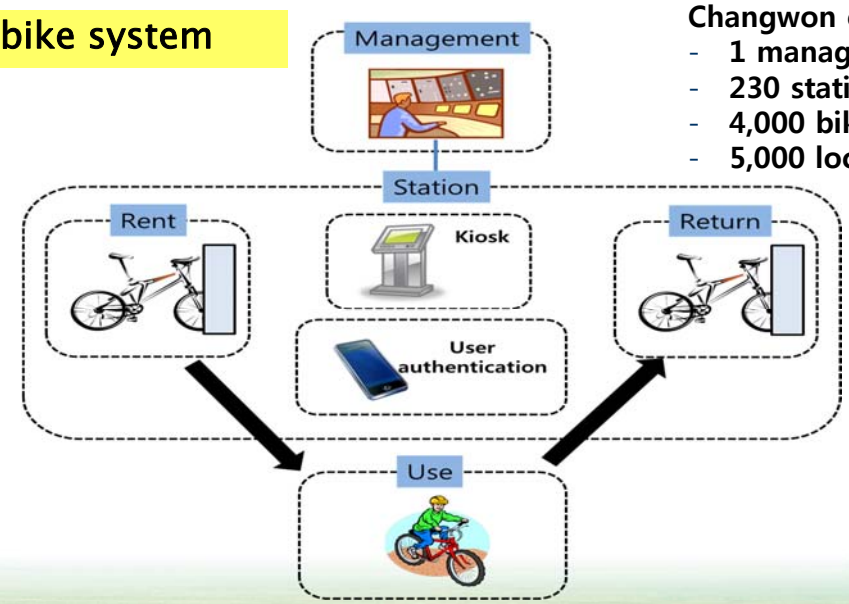
IoT use cases – Things on the street

- Sensors everywhere
- Monitoring every managed object
- Managing street lights, road traffic, city facilities, stream and air pollutions, road freezing and flooding, etc.

Source: Samsung SDS, 2007

IoT use cases – Things in a social life

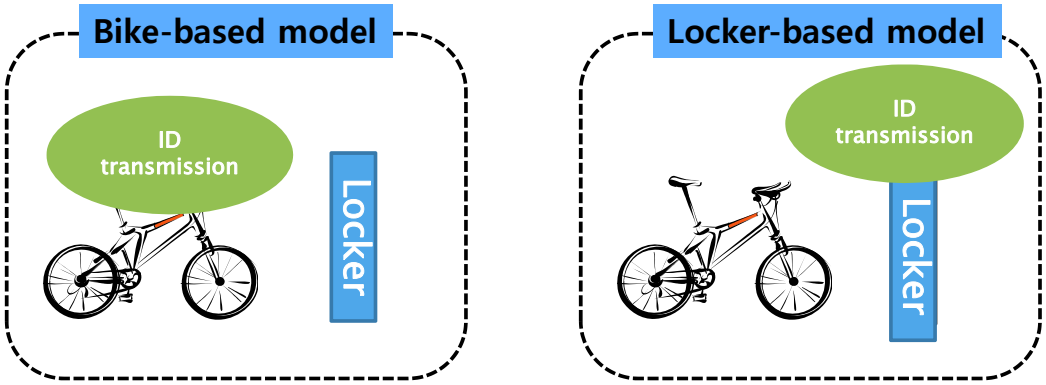
Public bike system



Changwon city:
- **1 management center**
- **230 stations**
- **4,000 bikes**
- **5,000 lockers**

IoT use cases – Things in a social life

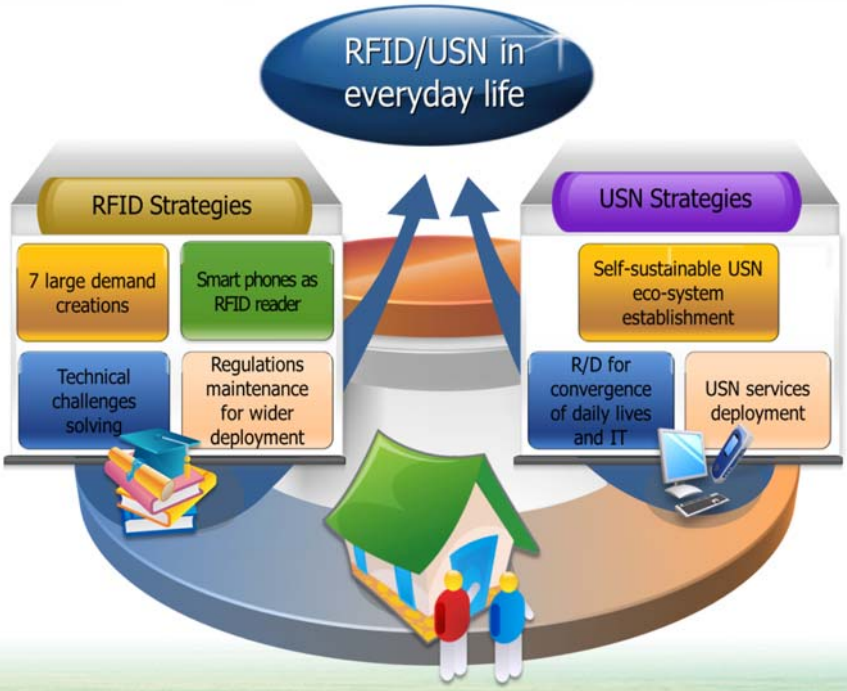
Public bike system: Two types



MKE's deployment strategy

7 Large demand areas:

- alcohol/liquor,
- medicine,
- food,
- apparel,
- home appliances,
- parcel delivery, and
- car



Thank you!