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Submission Title: [**Services with Low Power Beacon-Enabled Mesh Networks Supporting Device Mobility and QoS**]

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Re: [This work has been supported by KATS and SKTelecom.]

Abstract: [This document proposes some services enabled by low power beacon-enabled mesj networks supporting mobility and QoS.]

Purpose: [Technical Contributions on the IEEE 802.15 WNG Task Group]

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Services with Low Power Beacon-Enabled Mesh Networks Supporting Mobility and QoS

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  - ITS
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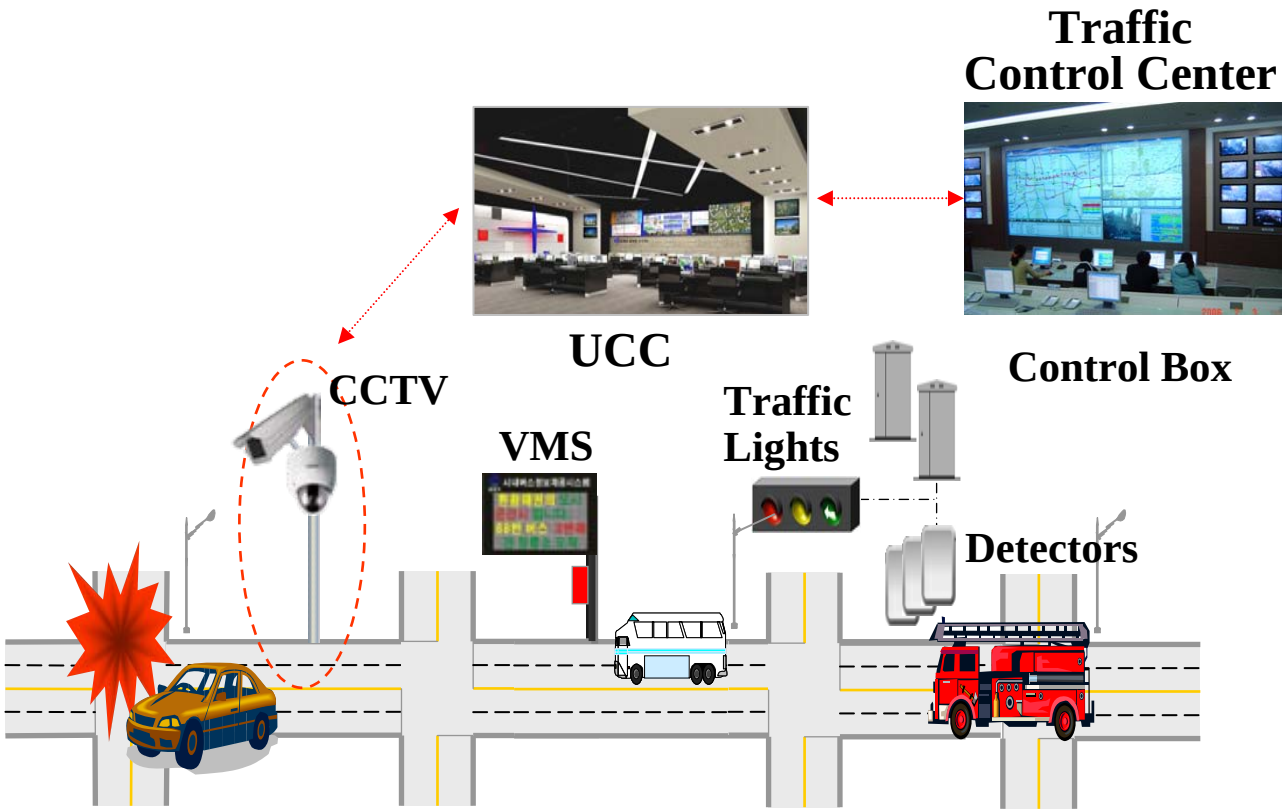
- Conclusion

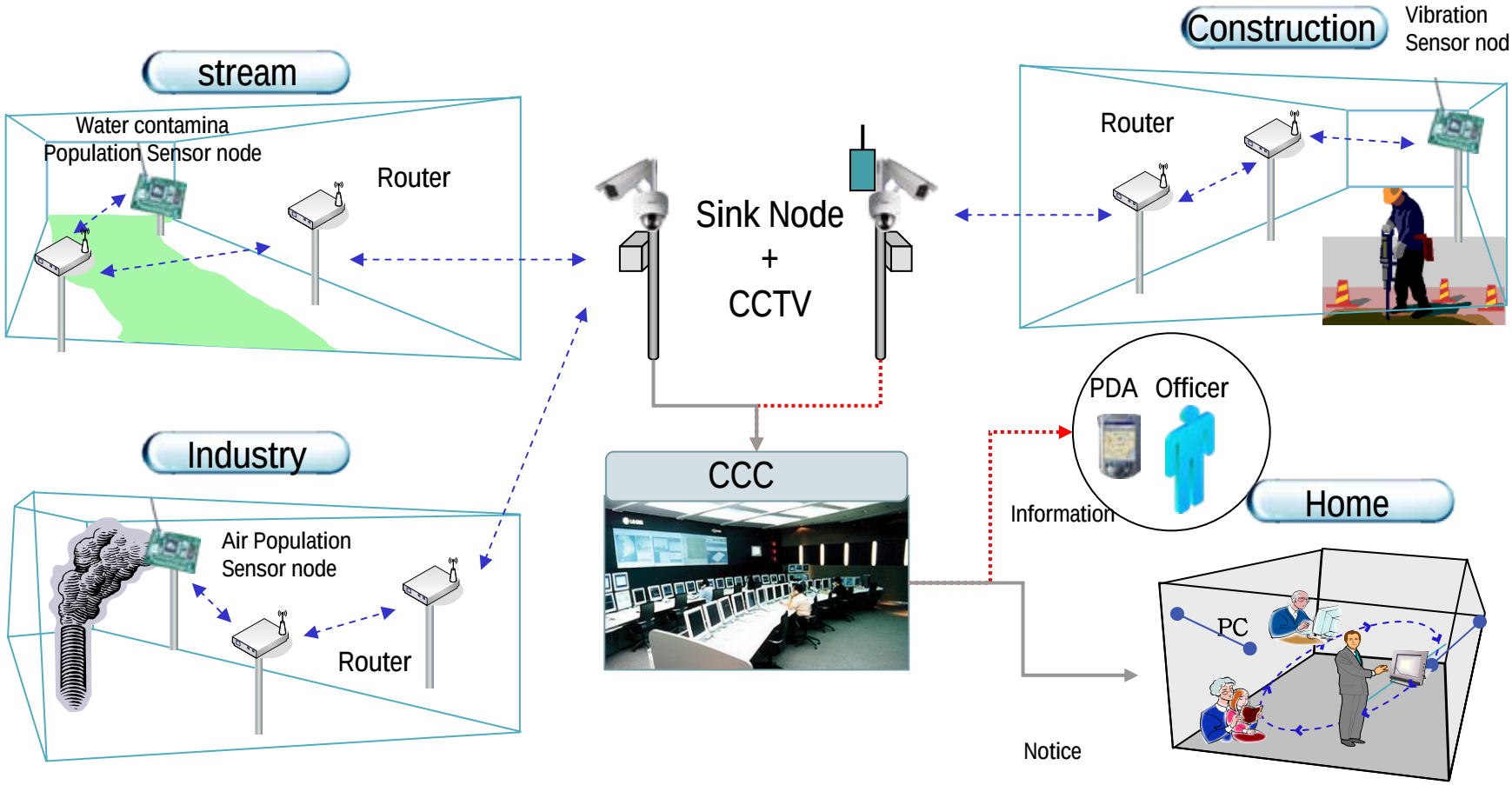
Services Requiring Mesh Mobility and QoS

- Healthcare Service
- ITS
- Disaster Prevention Service
- Bridge Management Service
- Underground Facility Management
- And there are a lot more!

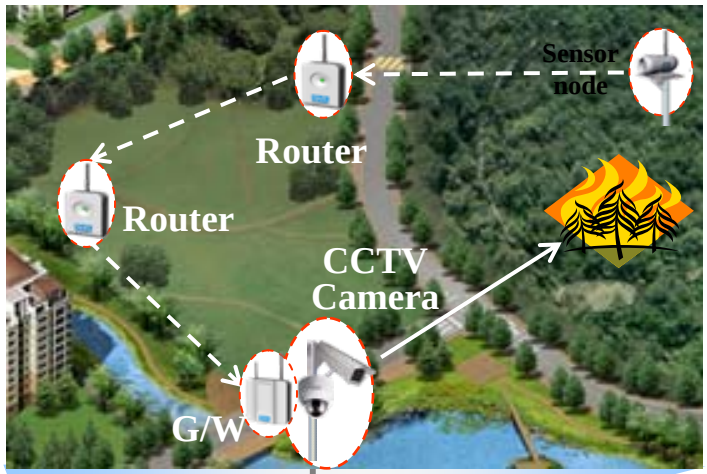
Intelligent Transport System

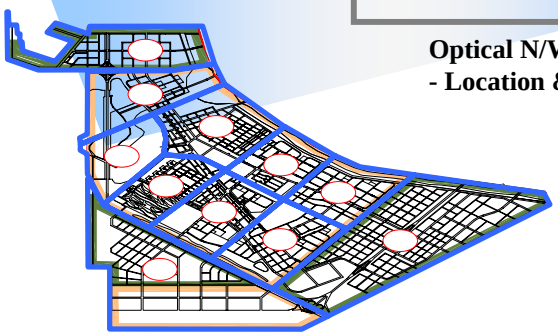


Environment Management



Disaster Prevention





Optical N/W (PON/AON)
- Location & image

N/W

UCC

Control Room

Node Controller

RGB Matrix

Wall Controller

Gigabit Network

Staff

TOPAZ

NVR

CCTV Controller

Traffic information & available hospital

Incident image & location

Incident image & location

Warning & guiding a refuse

Police Station

- [Police] Control vehicles
- [ITS] Control a traffic sign or lane

Fire Station

- Fire extinguishing

Cellular

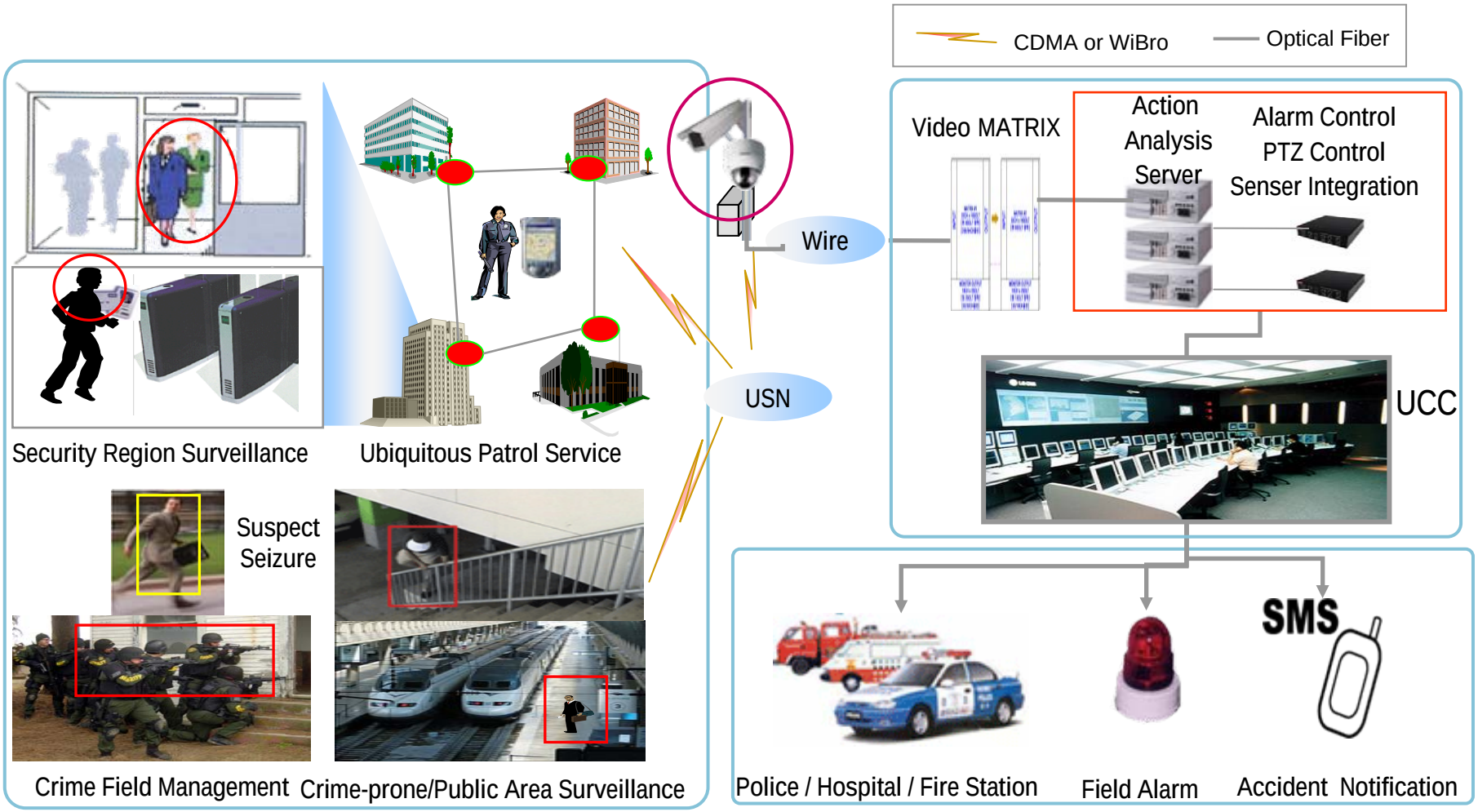
LED Sign board

Resident

Wall pad

- Receiving warning Msg. & traffic situation

Crime Prevention



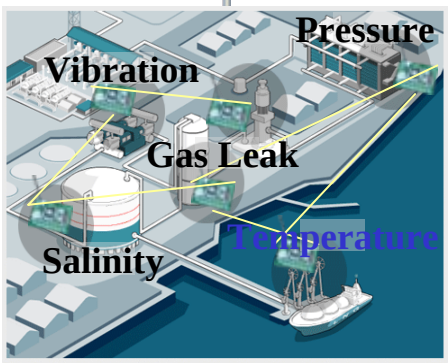
Facility Management

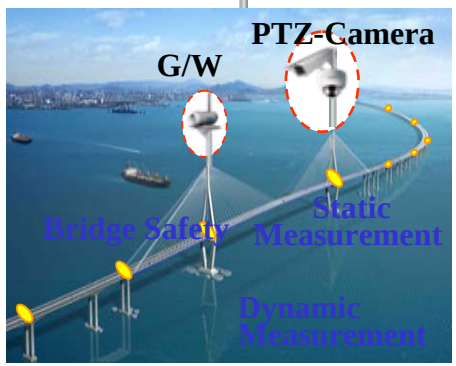
City Traffic Control Center

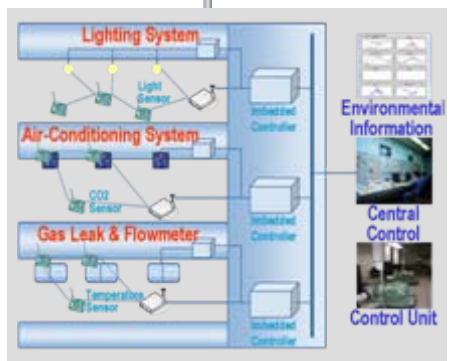
UCC

Disaster Prevention Center

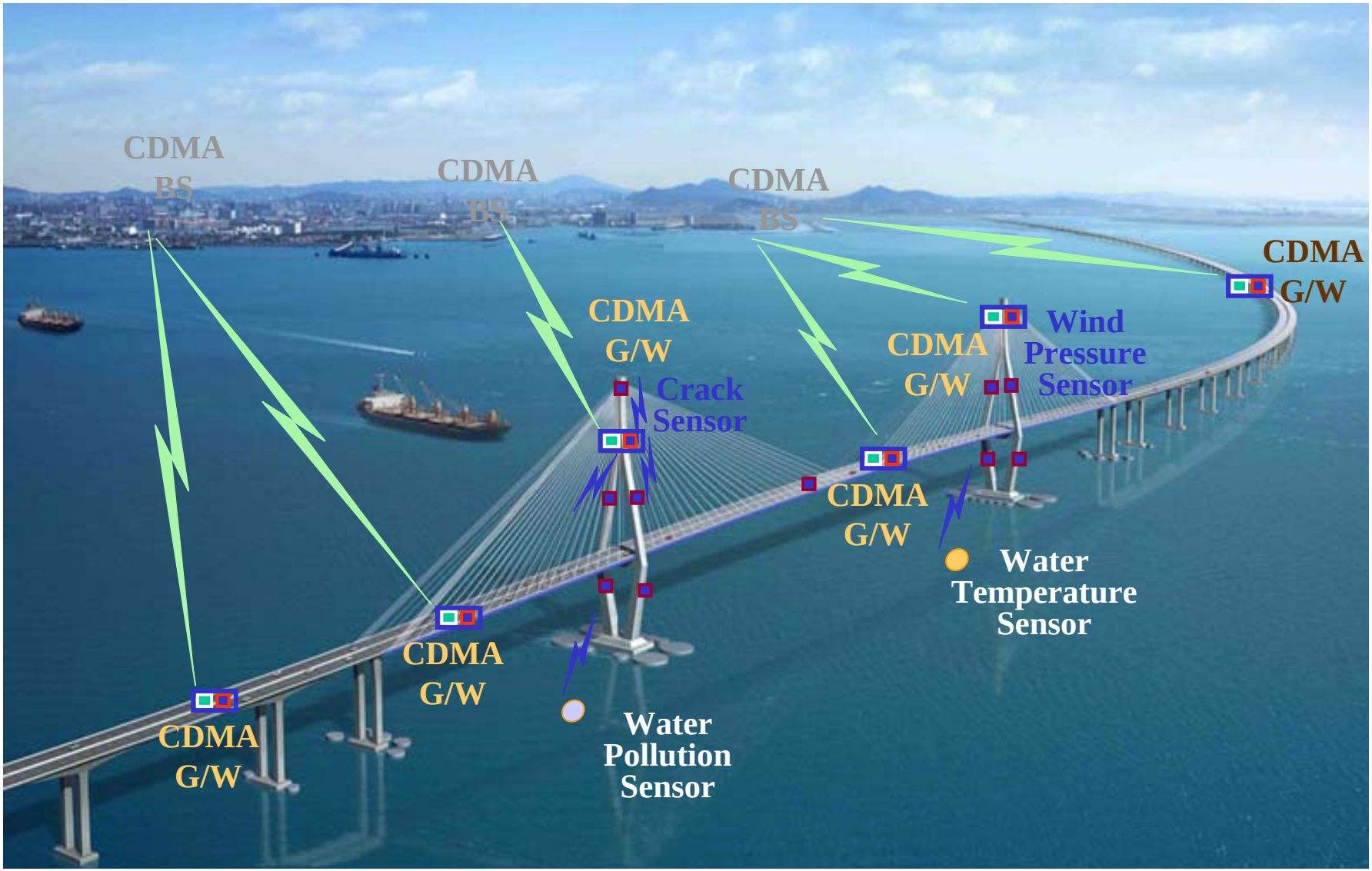
Router Router Router Router



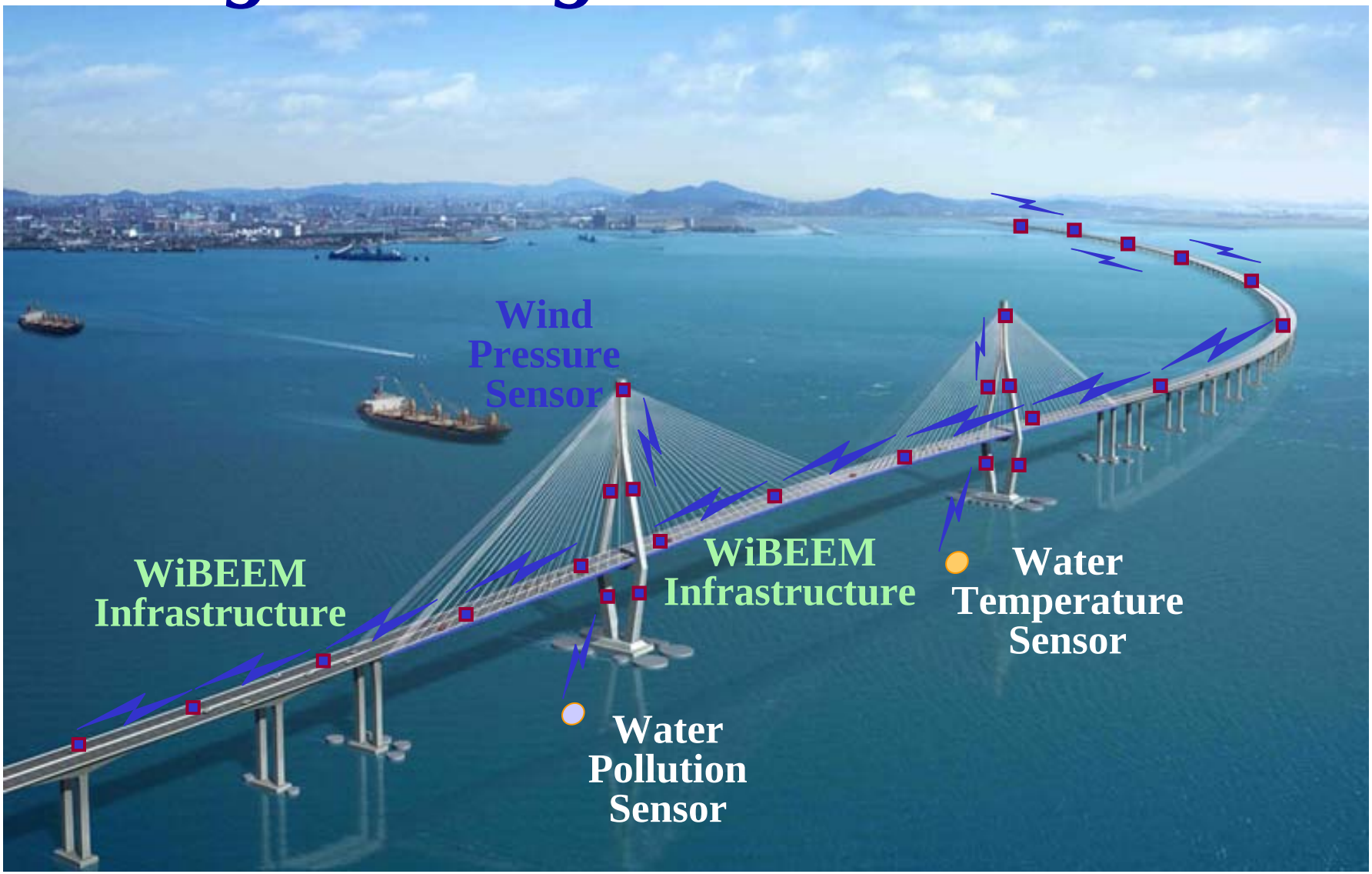




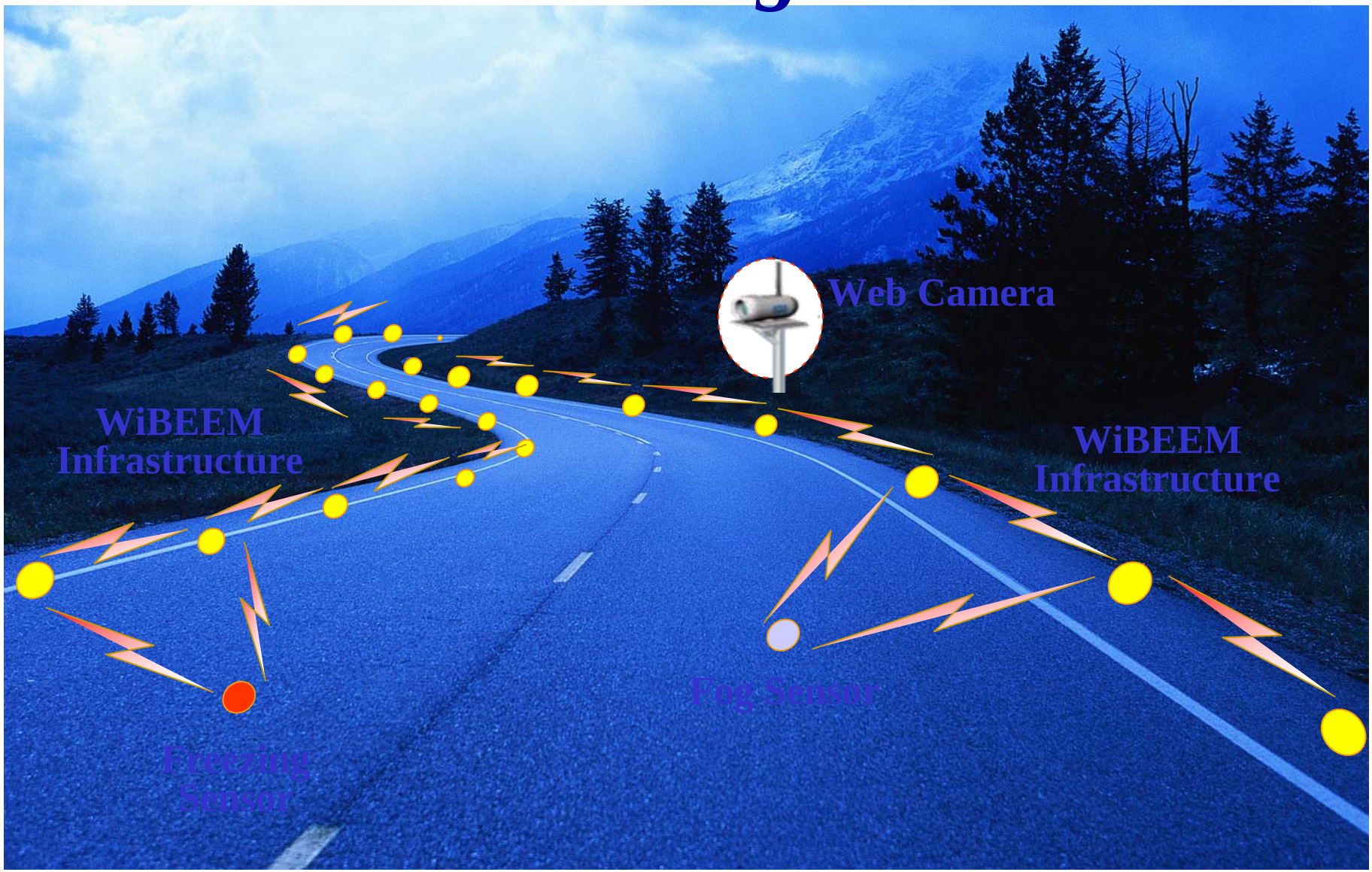
Bridge Management - Today



Bridge Management - Tomorrow



Road Management



U-Healthcare Service Scenario

Home

2. Data Collection
3. Emergency Alert

RG(AP)

WiBEEM

4. Transmit the Collected Data

FTTH

Internet

U-Healthcare Center

1. Subscription of U-Healthcare Service

Wireless Internet

5. Store Data
6. Analyze the Data

4. Transmit the Collected Data

8. Emergency Service

U-Hospital

7. Call the Emergency Service
9. Periodic Monitoring

WiBEEM

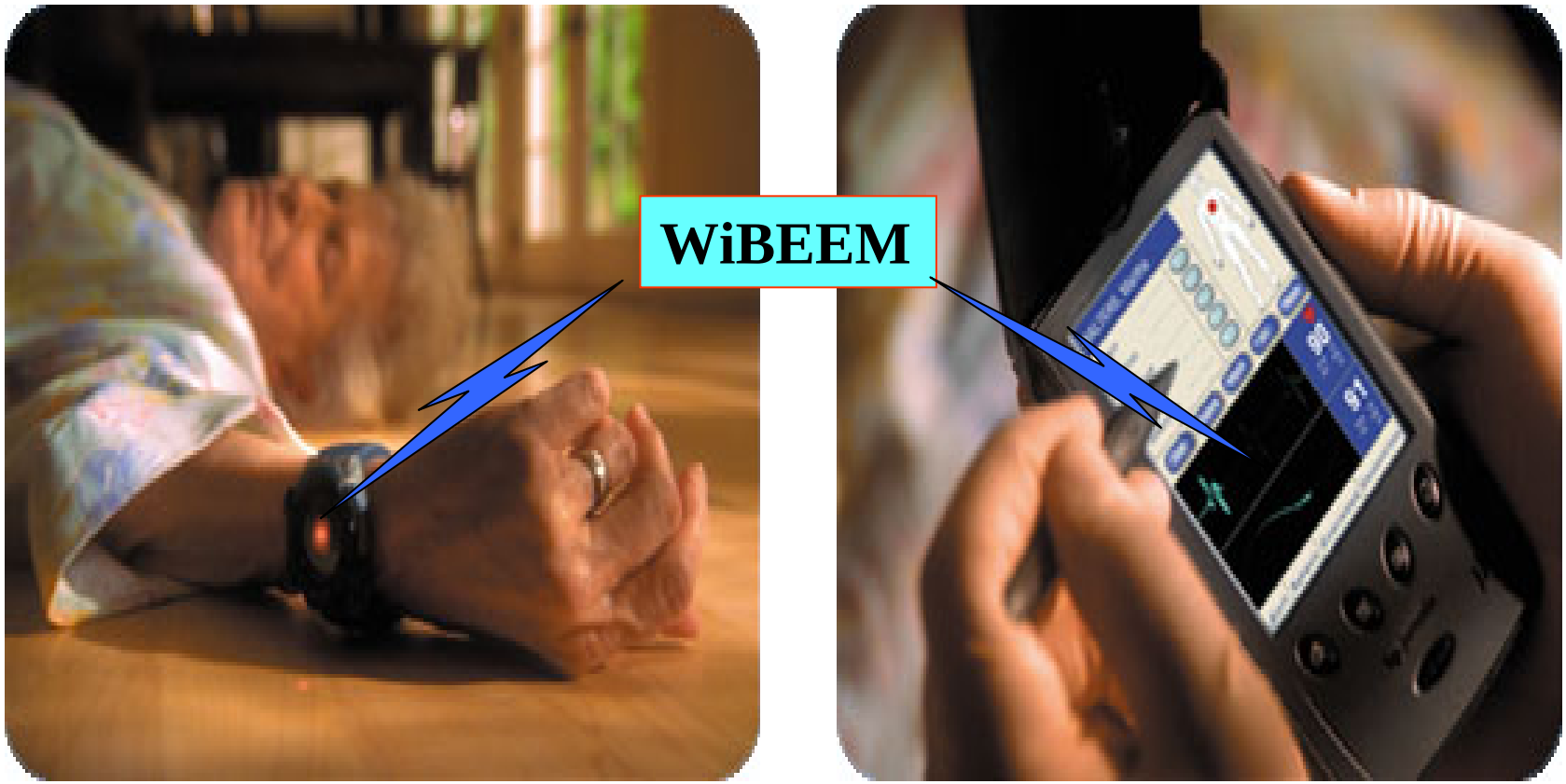
CDMA, GSM, or HSDPA

10. Provision of Contents Subscribed

Cellular Phone

2. Data Collection
3. Emergency Alert

Healthcare Services



Conclusions

- There are many examples of services that require device mobility and QoS.
  - Facility management
  - Healthcare Services
  - Disaster Prevention
- Enhancement of IEEE 802.15.4 MAC has to be made that can support QoS and device mobility
- The approach could be CSMA/CA-based multiple access mechanism or TDMA-based scheduled way.
- The best would be the combination of these two approaches.

Acknowledgment

- This work has been supported by TTA.