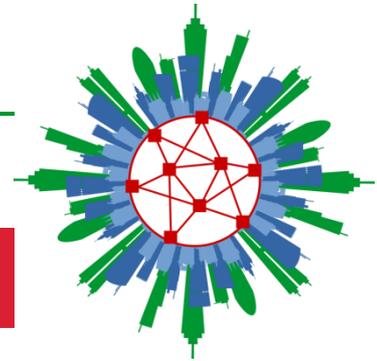




МОНГОЛ УЛСЫН ШИНЖЛЭХ УХААН
ТЕХНОЛОГИЙН ИХ СУРГУУЛЬ
MONGOLIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

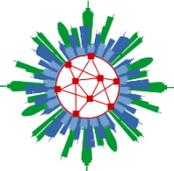
SuMoCoS

Sustainability and Mobility
in the Context of Smart Cities



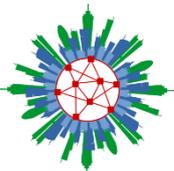
Developing the Smart City based on Internet of Things

Uranchimeg Tungalag



- 1 Introduction
- 2 Smart City Infrastructure
- 3 Research Background
- 4 Conclusion





1. Introduction

What is Smart City?

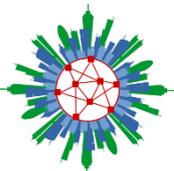


Why Smart City?

- Urbanization (Air pollution, Traffic, Lack of Energy)
- Aging
- Health
- Governance
- Social Segregation

How to develop Smart City?

- Policy
- Investment
- Educate citizens
- Information and Communication Technology**

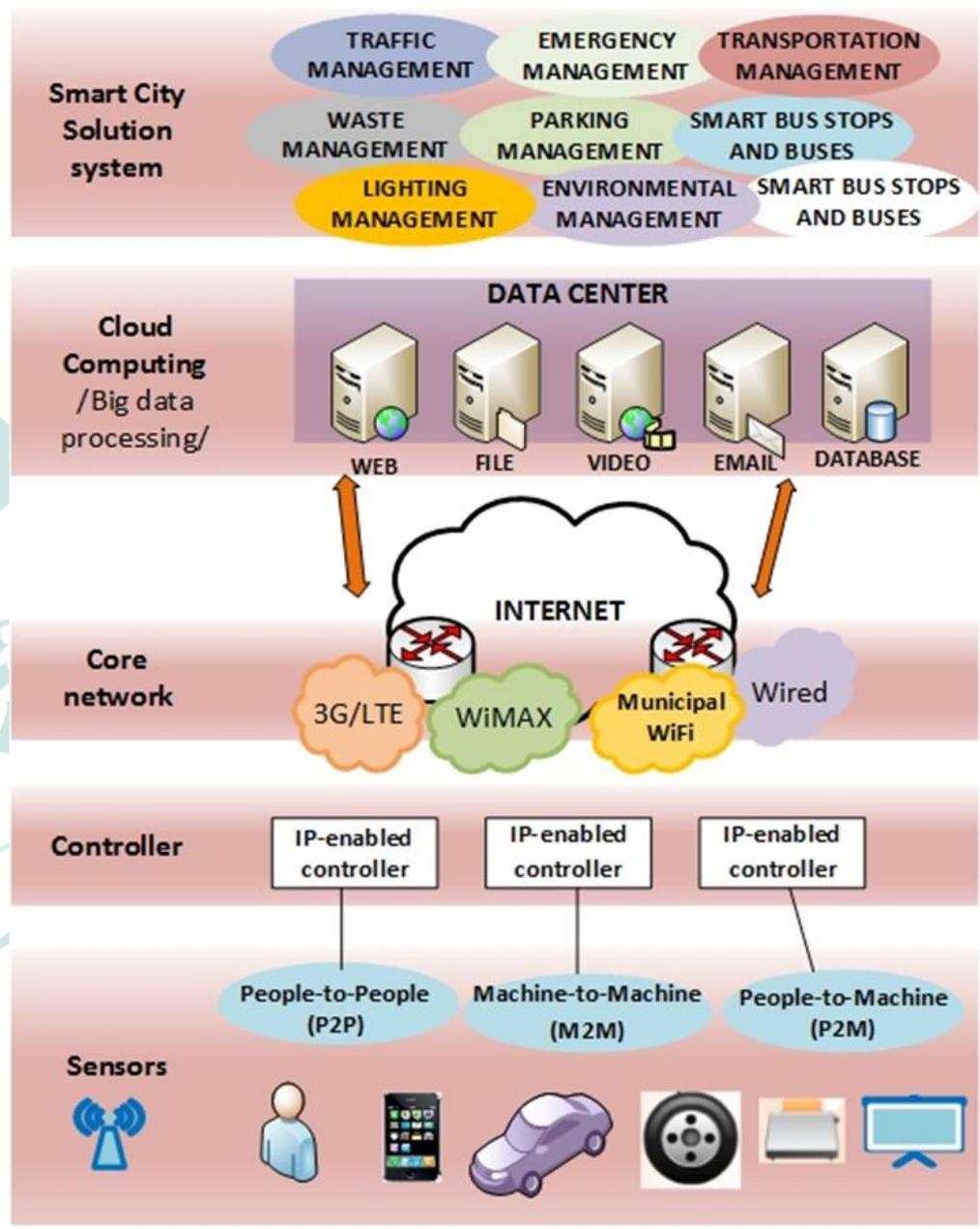


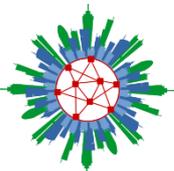
1. Introduction

- Internet of Things (IoT)
IoT is the connection of millions of smart devices and sensors connected to the Internet.

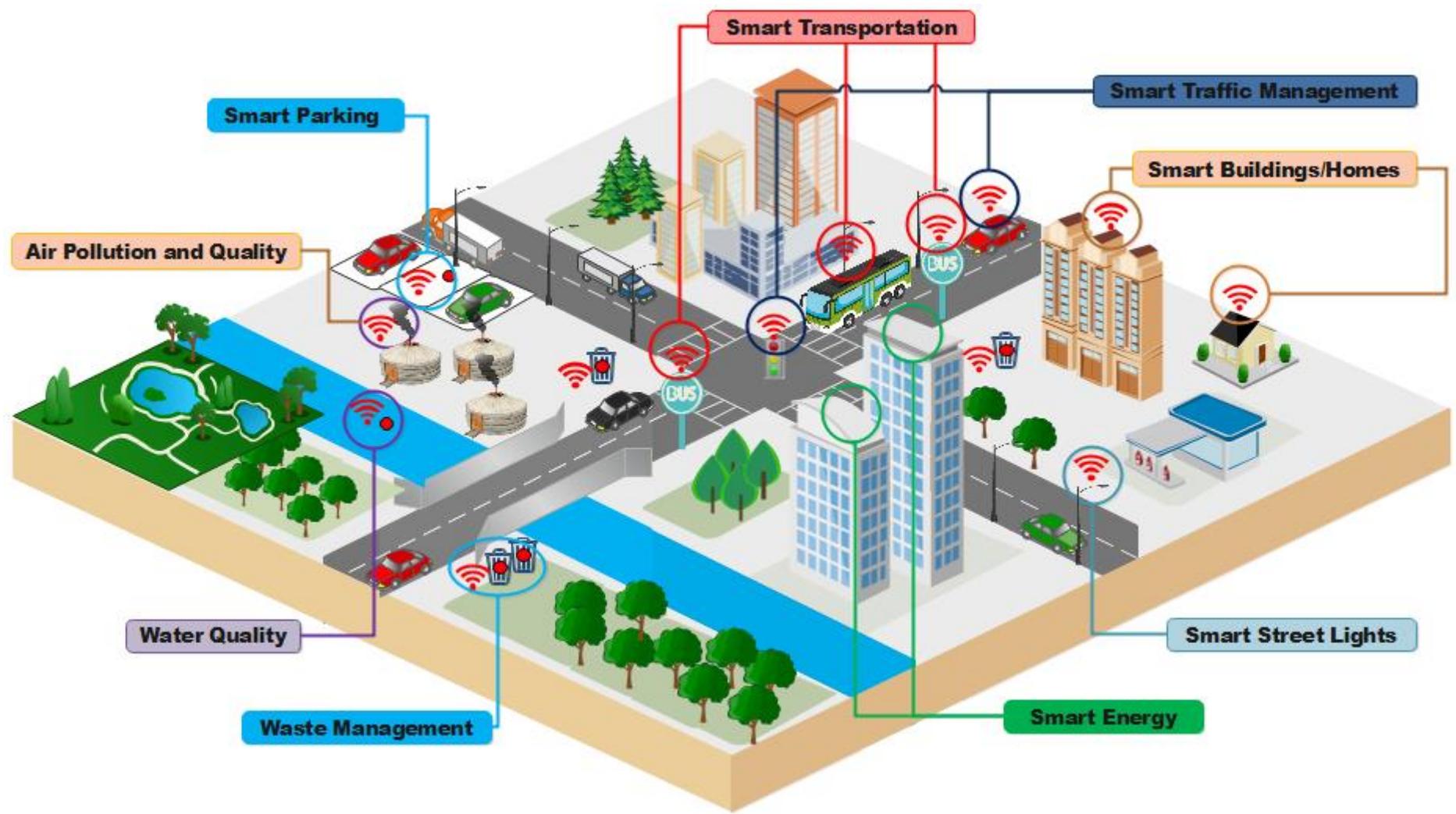
Smart City

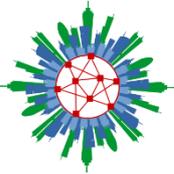
- Smart Home
- Smart Grids
- Smart Farming
- Wearables
- Smart Retail
- Industrial Internet
- Connected Health





2. Smart city infrastructure





3. Research Background

IoT network development based on LTE



The Developing IoT for Smart Transportation System using Municipal Wi-Fi



Monitoring system for Waste management based on WSN.



WSN Monitoring System for Train with Energy Harvester

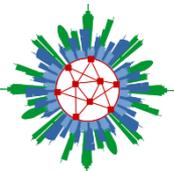


Security of Internet of Things using ML



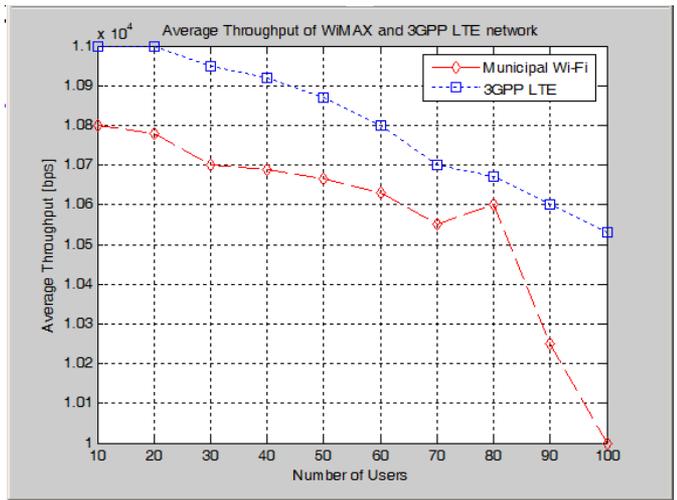
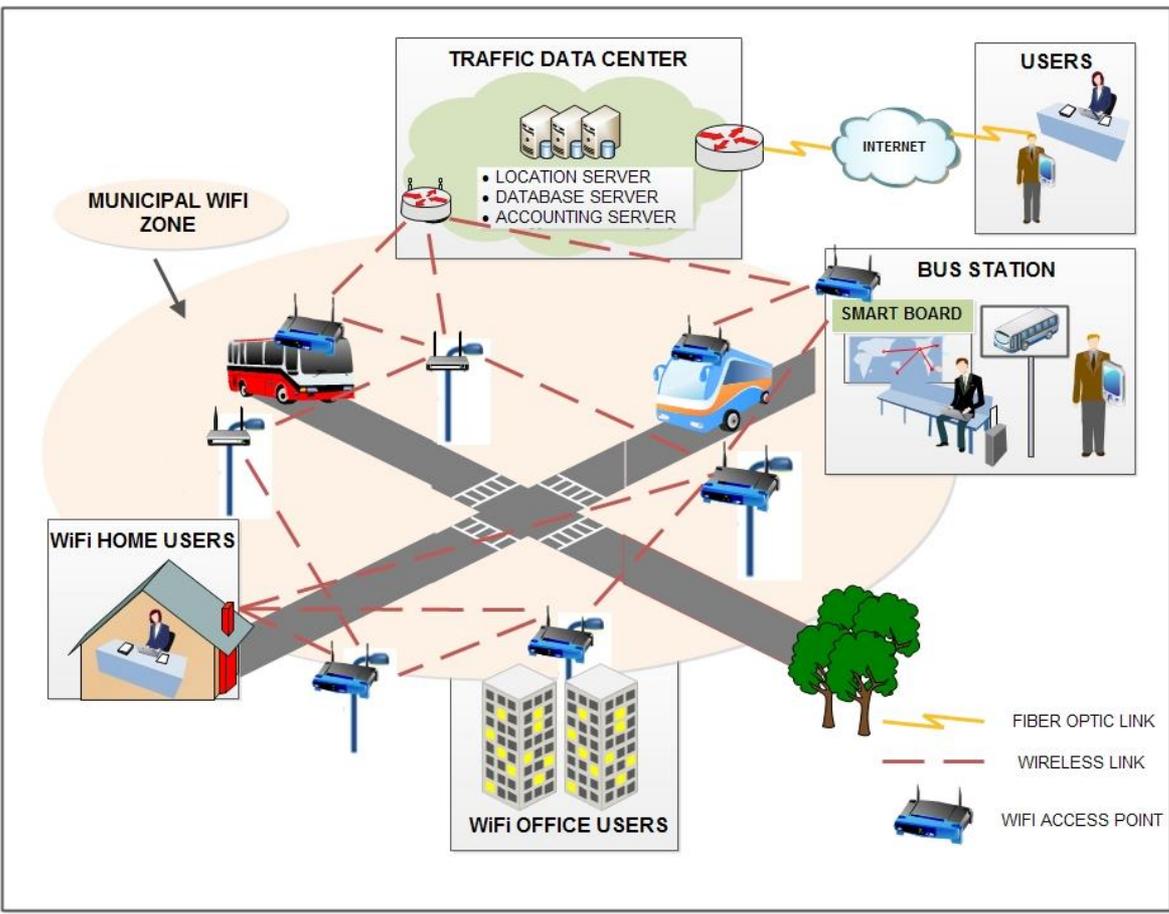
Internet of Things Projects

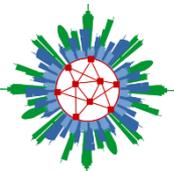




3. Research Background

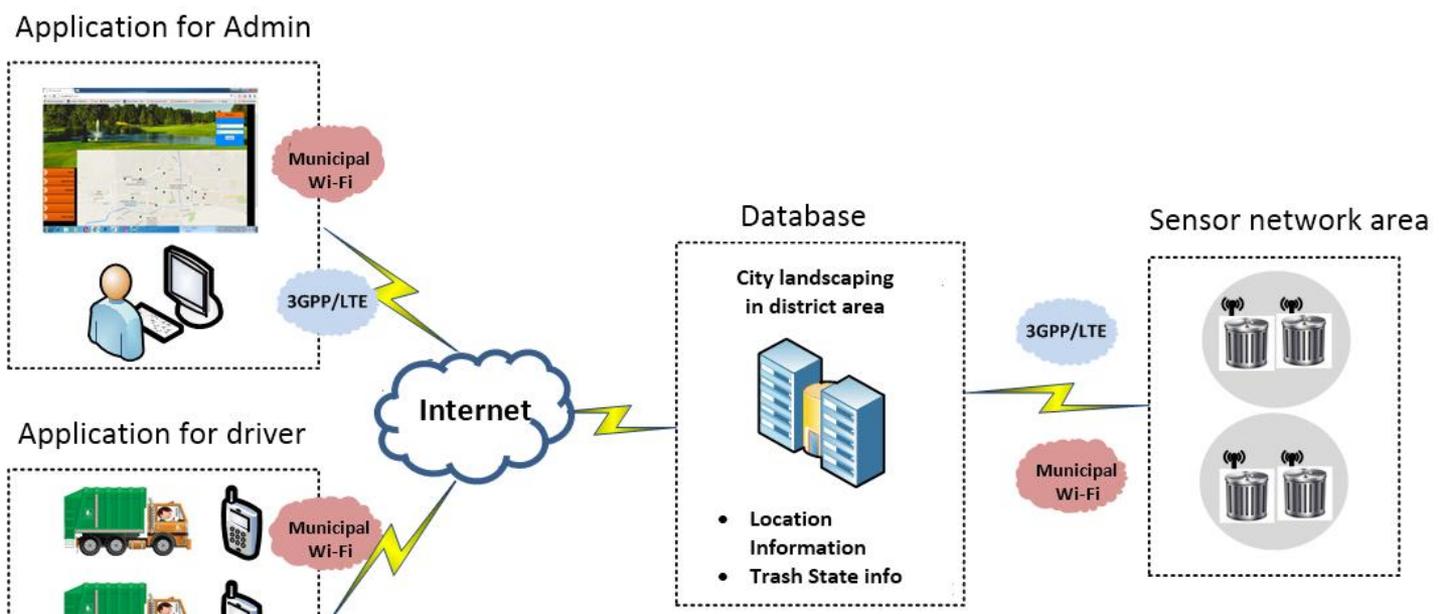
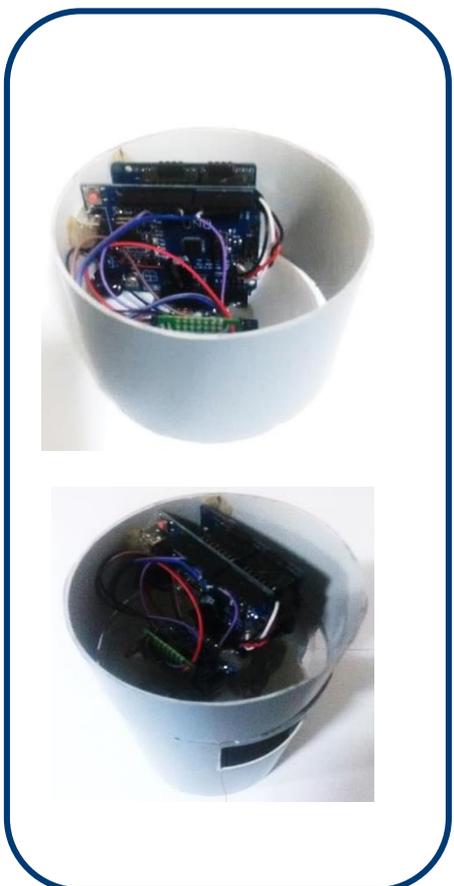
● The Developing IoT for Smart Transportation System using Municipal Wi-Fi

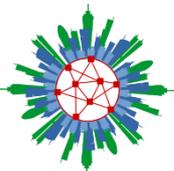




3. Research Background

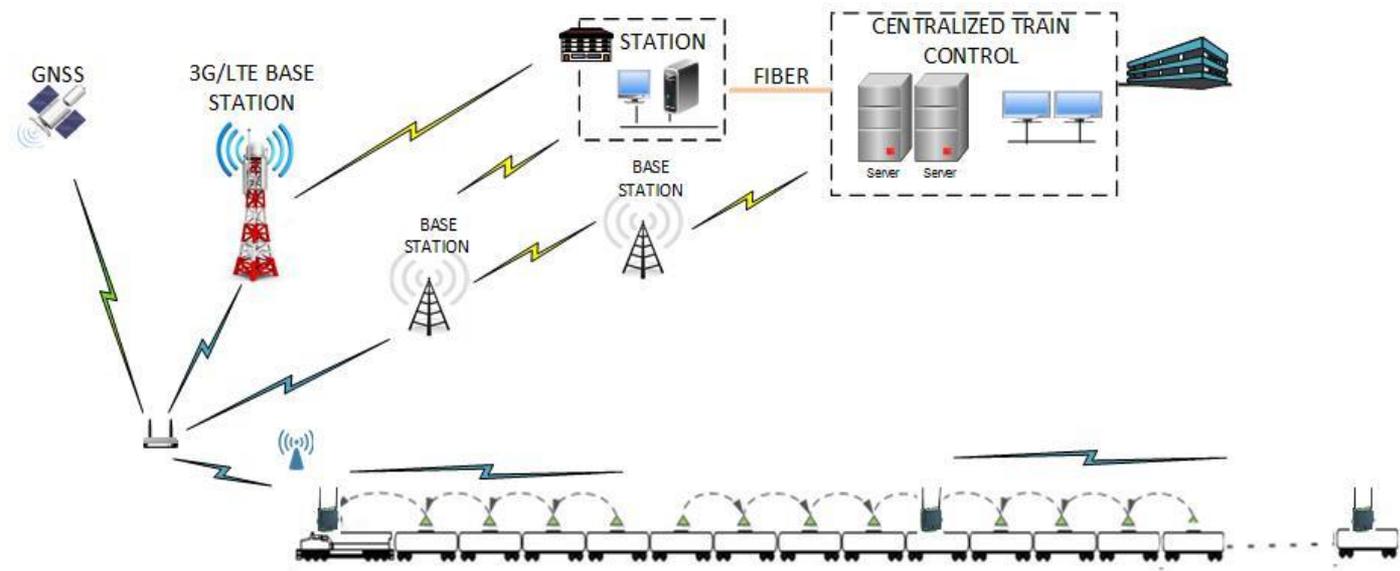
Monitoring system for Waste management based on WSN



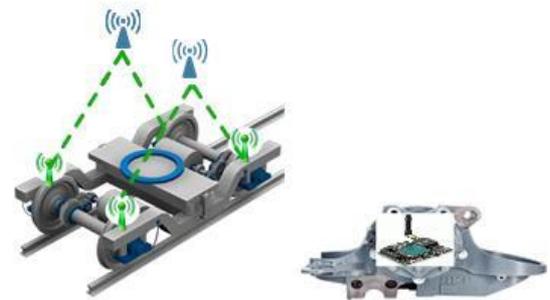


3. Research Background

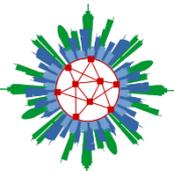
WSN Monitoring System for Train with Energy Harvester



Sensor Node (Energy Harvest)



- WiFi gateway
- 802.15.4 PAN coordinator
- 802.15.4 coordinator
- 802.15.4 device
- WPAN link
- WLAN link
- Radio link
- GPS link
- Fiber link



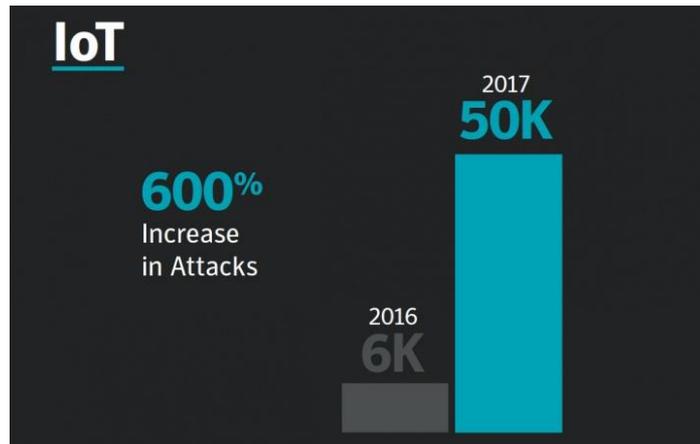
3. Research Background

Security of IoT

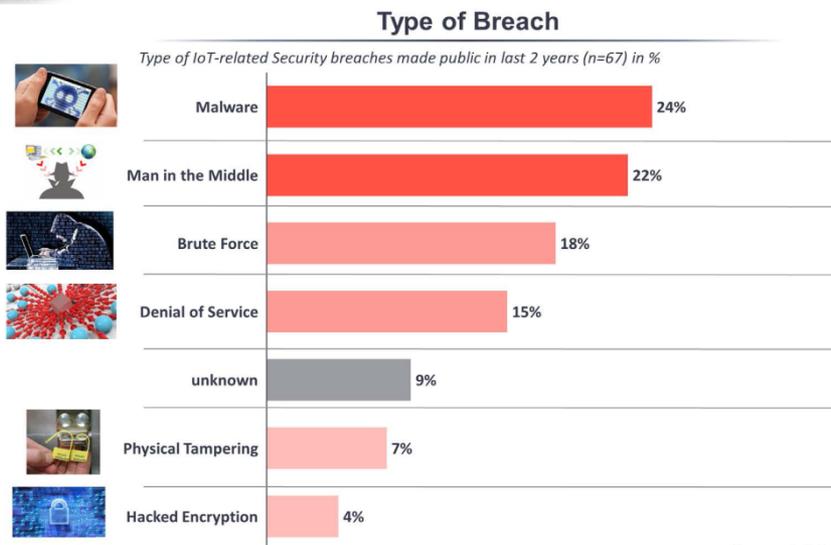
10 Popular IoT devices have **250**

Vulnerabilities:

- Open telnet port
- Outdated Linux version
- Unencryption transmission of sensitive data...[1]

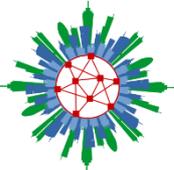


- In October 2016, the **Mirai** botnet commanded 100000 IoT devices (primarily CCTV cameras) to conduct a DDOS attack.
- Github, Amazon, Netflix, Twitter, CNN and Paypal, were rendered inaccessible several hours.



Source: IoT Analytics press research

Source: IoT Analytics press research



Conclusion

- To develop Smart city using IoT
- To make a Integrated network for developing infrastructure of Smart city
- to choose best technology solution to make a integrated network
 - Municipal Wi-Fi
 - Mesh Wi-Fi
 - LoRa
 - Wired
- to improve collaboration of policy of government and research of University

