oneM2M in smart cities – South Korea

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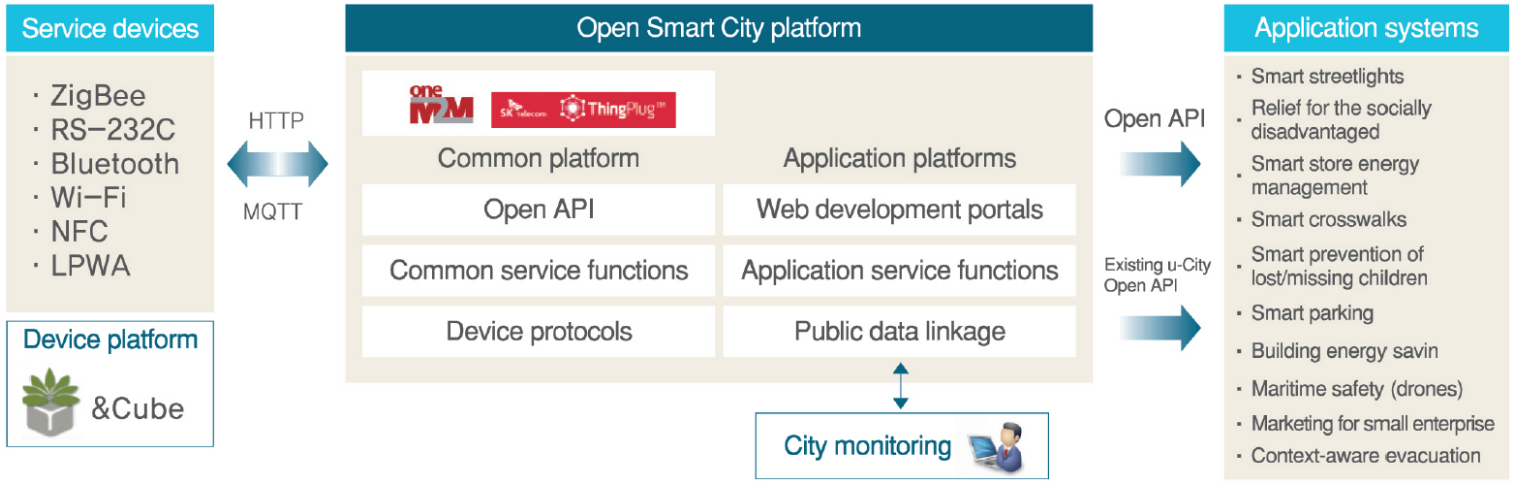
Busan – Global Smart City

- Type: Pilot Project
- Duration: ’15.01 ~ ‘17.12
- Testbed: Haewoondae-gu (district)
- Coordinator: SK Telecom

http://www.k-smartcity.kr/ http://data.k-smartcity.kr/

Busan – Global Smart City

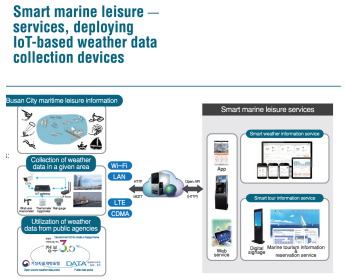


Testing prospective city services (26 services)

COMMUNITY SAFETY			TRAFFIC IMPROVEMENT	URBAN LIVING	ENERGY CONSERVATION
Smart streetlights	Relief services for the socially disadvantaged	Smart prevention services for lost/missing children	Smart crosswalks	Proximity beacons for small business location-based marketing services	Smart building energy conservation
Smart Maritime safety service (utilizing drones)	Situation-aware evacuation information system	Smart safety service for subway/LRT platforms	Smart parking	Mist-spraying at traditional markets	Smart store energy management
Smart subway ventilation management system	Trial of Smart City disaster prevention system	Smart traffic safety service in school zones	Pedestrian-responsive smart directional information signage service	Testing of situation-aware Smart Home service	Development of urban energy-self-sufficient smart farm service, linked with Smart City platform
Secure location management service based on smart LED streetlights	Smart City platform-based safety advisory service for wet road conditions	SDeveloping & testing 'soft' smart ship service platform for passenger safety & convenience, using wireless integrated IoT sensor technology	CCTV video analytics for traffic data collection & alternative route info	Social care services utilizing IoT smart mirrors	
Development of smart marine leisure services deploying IoT-based weather data collection devices			Enhanced image-based smart parking service	Visitor access control and monitoring system	

- **2015: 15 Services**

- **2016: 11 Services**



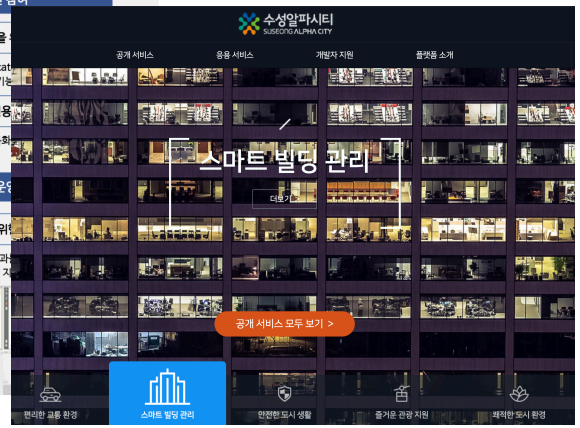
Busan – Smart City Services

- New services in 2017
  - Traffic information from CCTV
  - Traffic flow improvement based on traffic collection and analysis
  - Pedestrian safety on crosswalk
  - Parking and re-charging for EV (Electric Vehicle)
  - Smart tourism
- Extended pilot services in 2018 and 2019
  - pilots are coordinated by BIPA (Busan IT Industry Promotion Agency)
  - new services have been tested for SME's commercial service development
    - Care solution for safe child education service
    - Smart balance work-out service with motion detection devices
  - oneM2M-based smart city platform has been used for SME training also

Daegu – Suseong Alpha City

- Type: Pilot Project
- Duration: ‘18.04 ~ ‘18.12
- Testbed: Suseong-gu (district)
- Coordinator: SK Telecom

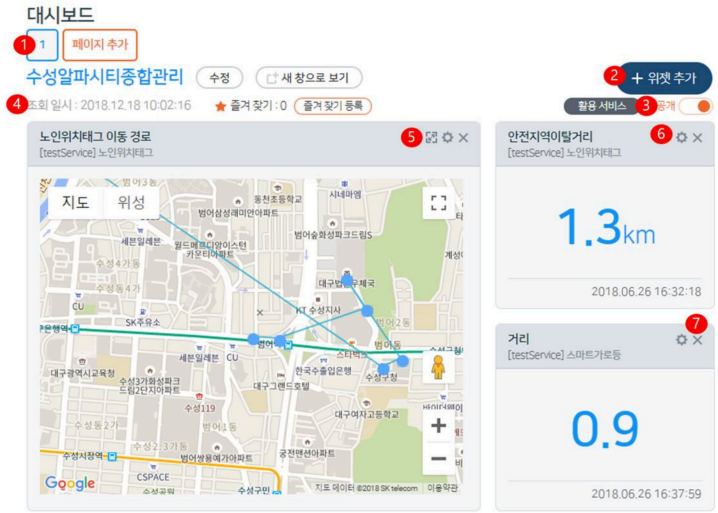
https://daegusmartcity.kr/



https://dev.daegusmartcity.kr/

Daegu – Suseong Alpha City

- Services
  - Intelligent safe pedestrian service
  - Unmanned parking management service (e.g. illegal parking)
  - Etc.
- Developer supports on portal
  - Device registration
  - Service registration
  - Custom dashboards with configurable widgets



< smart city dashboard >

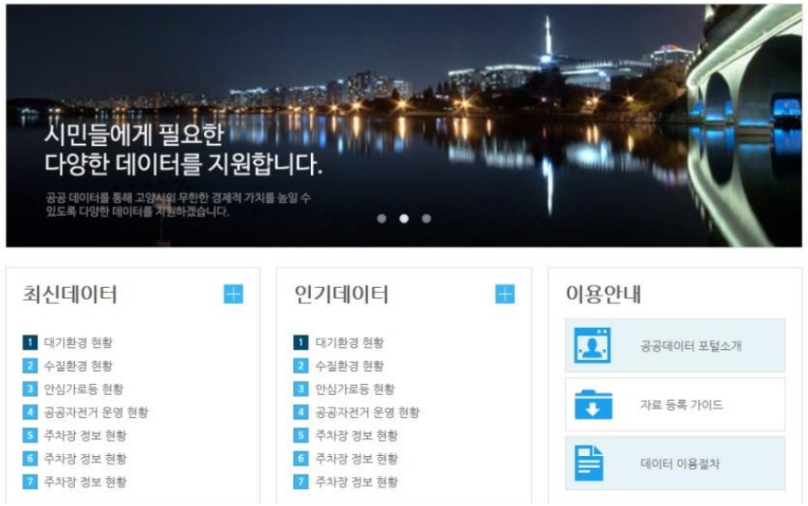
Goyang – IoT Convergence Smart City

- Type: Pilot Project
- Duration: ‘16.01 ~ ’17.12
- Coordinator: LG U+
- Environment-friendly Smart City Services

https://www.smartcitygoyang.kr/

Goyang – Smart City Services

- Pilot services
  - Smart Eco City services
  - Air Quality Management
  - Open Public Data
  - Smart Street Light
  - Smart Parking



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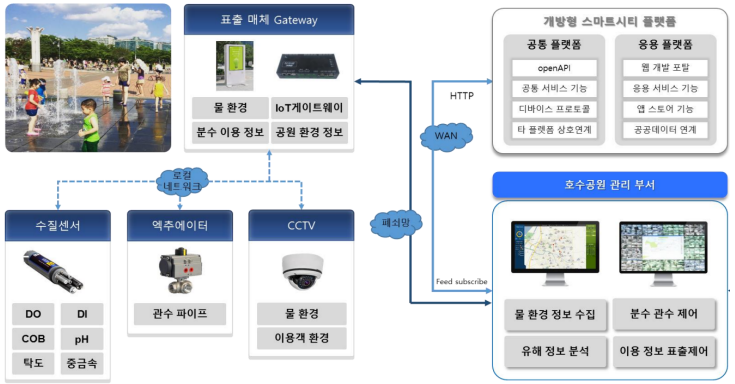

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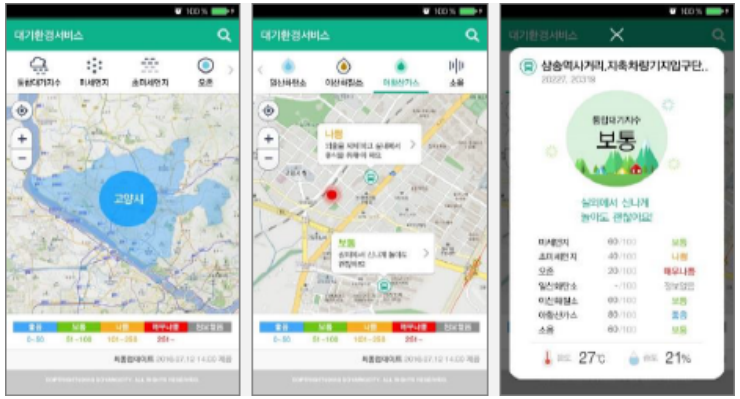
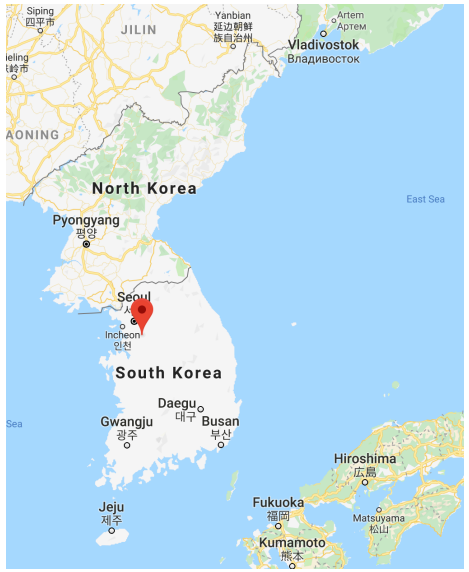
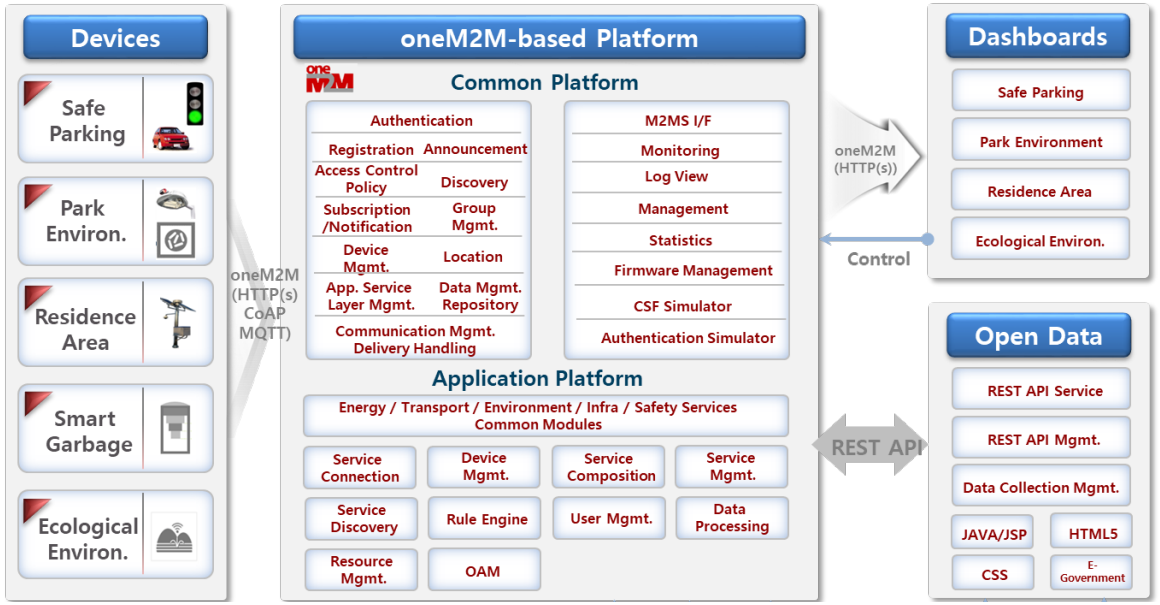


<Air Quality Management>

Yongin – Mosquito Monitoring System

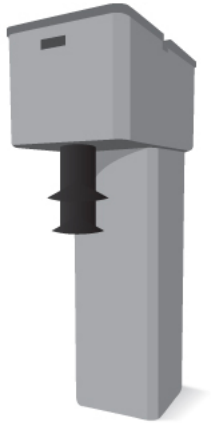
- Type: Commercial Deployment
  - Commercial Deployment verified from Goyang Smart City
  - Deployment covers 3 districts in Yonging city
- Platform Provider: N2M



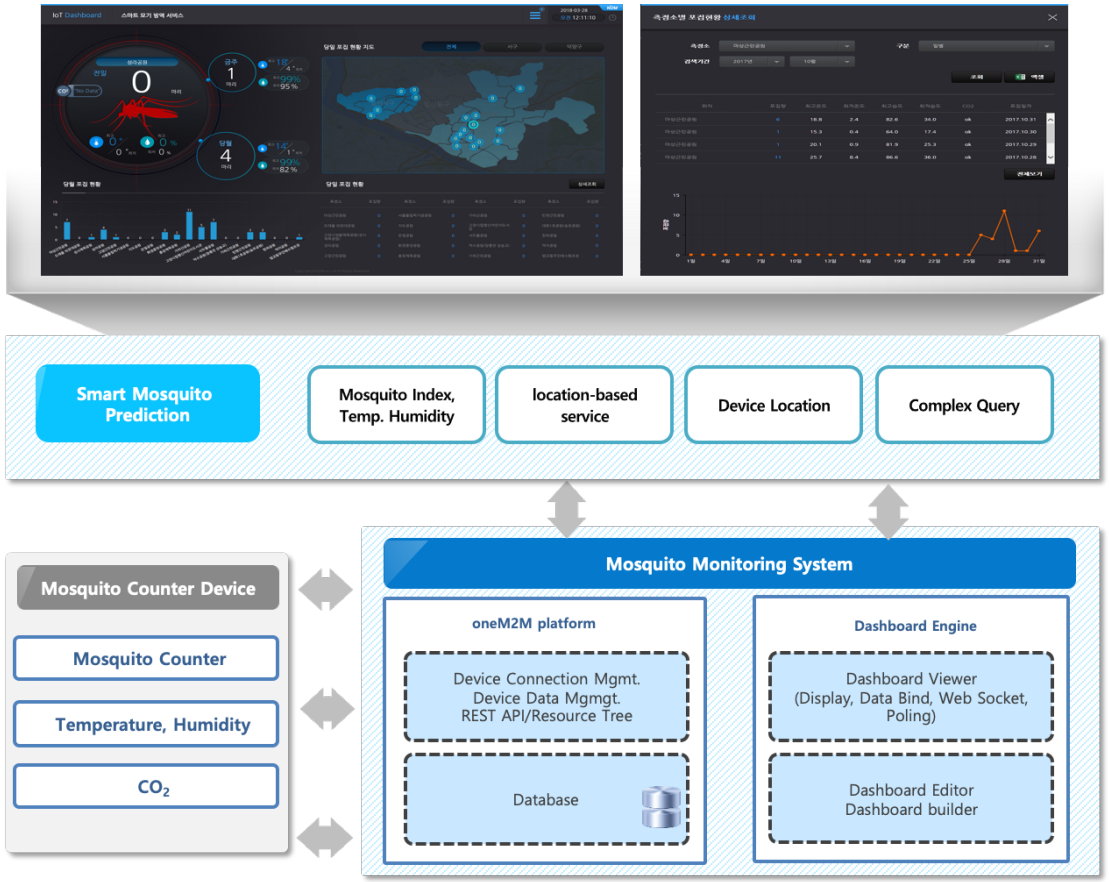


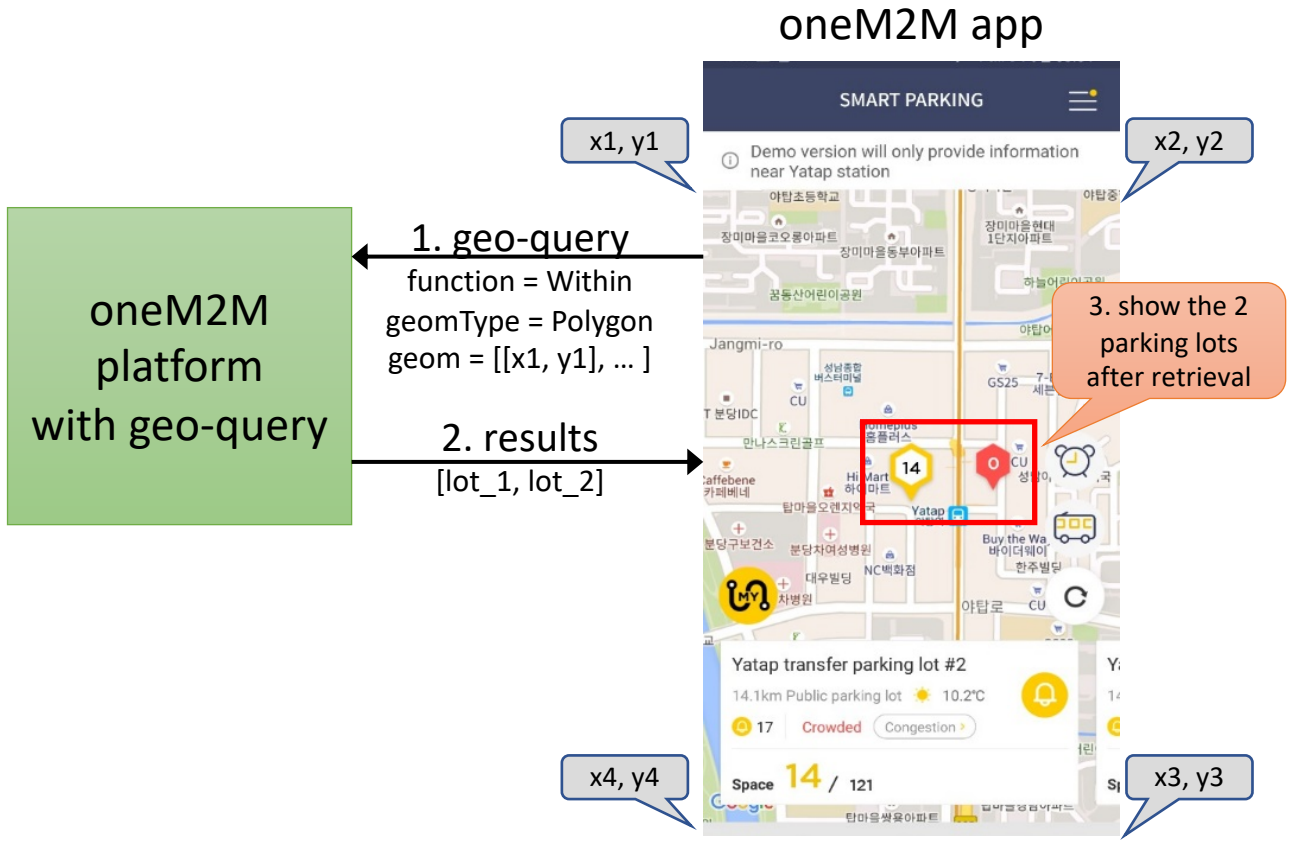
Yongin – Mosquito Monitoring System

- Mosquito Monitoring
  - Collects the number of mosquito with environment data from mosquito counter
  - Predicts with machine learning would be followed



<Digital Mosquito Counter>



SynchroniCity – oneM2M extension

- Smart city data models with oneM2M
  - mapped to <flexContainer> specialization resources
  - E.g. OffStreetParking, ParkingSpot, DriverInfo
- Geo-query extension to oneM2M
  - one of necessary feature for smart city applications, and missing in oneM2M so far
  - 'location' attribute contains geo-location in GeoJSON format
  - provides geo-queries with several well-known functions (e.g. ST_Within)
  - Being discussed at TP#42 as Rel-4 new feature