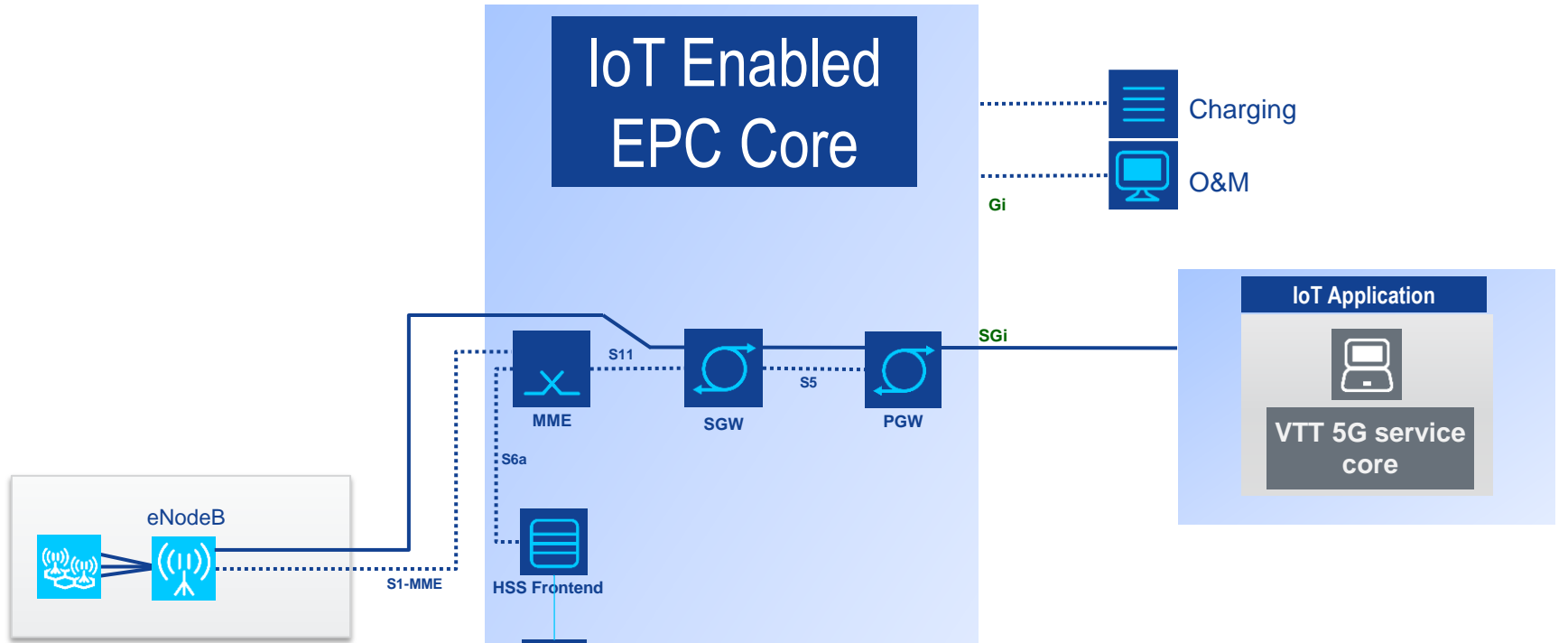


# IoT Possibilities supported by 5GTN EPC

Olli Liinamaa

# 5GTN packet access network 1H-2016



## SGSN/MME:

Highly signaling driven function that provides mobility management, authentication of subscribers for 2G/3G/4G radio access and end-user services (internet, VoLTE)

## S/P Gateway:

Vehicle for understanding mobile data, managing and charging the traffic. Source for user experience data in MBB networks, with integration to CEM and Managing end-to-end QoS

# IoT application example - Smart City

## RESOURCE MANAGEMENT

- 1 Electrical distribution and substation automation**  
Detect flaws (and theft), predict failures, optimize efficiency
- 2 Water leak identification**  
Detect leaks, analyze flows, reduce waste

## TRANSPORTATION

- 3 Traffic control**  
Optimize traffic flow by analyzing sensor data and providing info to drivers
- 4 Autonomous vehicles**  
Driverless cars reduce fuel use, accidents, demand for parking and road capacity
- 5 Bus and train schedule management**  
Provide accurate location, ETA, and routing information to passengers

## PUBLIC SAFETY AND HEALTH

- 6 Air and water quality monitoring**  
Monitor air and water quality to improve public health
- 7 Crime monitoring and prevention**  
Detect potential public safety issues and alert officers

Source: McKinsey Global Institute analysis

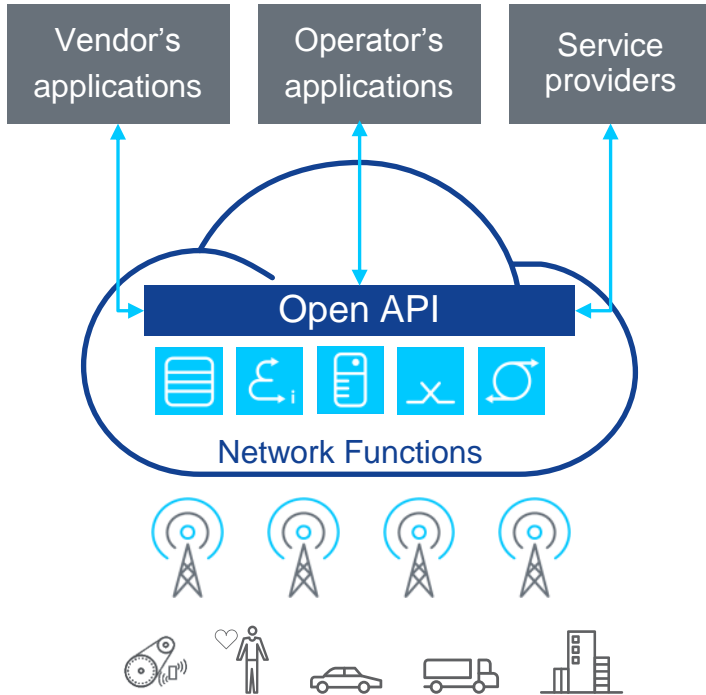
# IoT Optimized Features in 5GTN core

1H-2016

- Signaling traffic and power reduction for stationary MTC devices by controlling periodic signaling timers per client → improved battery life
- Optimized paging based on service. E.g. seek terminal first from last known eNB. → reduced signaling, client reached faster
- LTE broadcast for IoT applications → optimized solution for broadcasting content
- (Back-off timer for EPC overload control)

# Next Wave Enablers for Application Development

2H-2016



Next steps towards programmable network

- Mobile Edge computing. Distributed platform enables bringing services close to the users.
- VoLTE with API for creating services triggered by telco event notifications
- EPC API for real-time data mining enhancing service control and service integration

Improved Programmability and network analytics