# µMEC blueprint introduction
November 13, 2018

# µMEC concept

# Smart cities require fast communication networks

NEED

Our society and cities face great challenges, e.g. to improve safety, energy efficiency, air quality, effectivity of transportation and quality of living

Smart cities need a new service infrastructure and a digital ecosystem enabling:

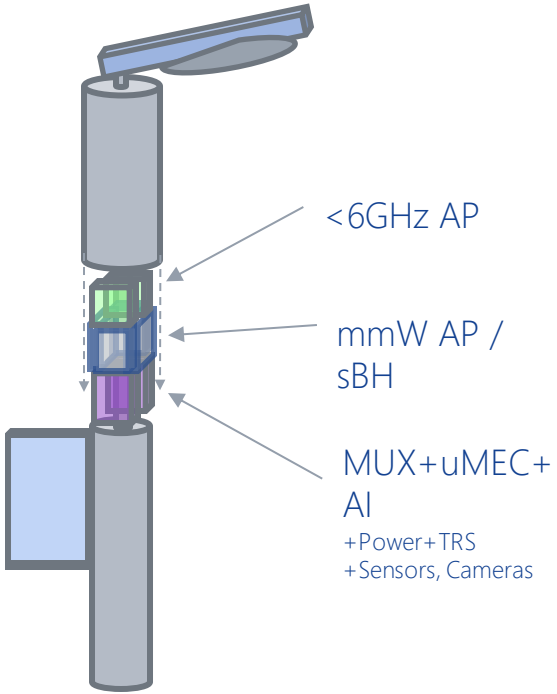
- Development of relevant smart city **services**
- **High data capacity** for citizens
- New service and **business opportunities** for companies
- **One common flexible total cost optimized high capacity 5G network**
- Opportunities for new **micro-operators** in the systems



NOKIA

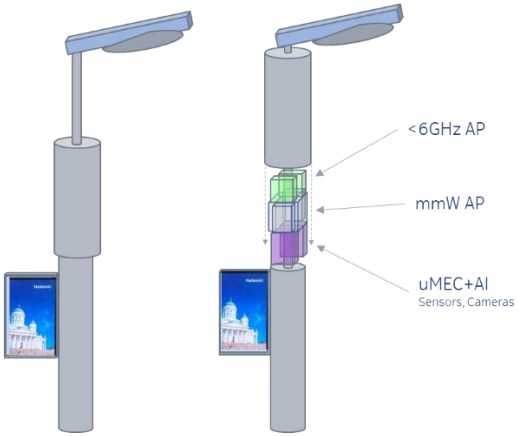
# µMEC concept

- µMEC is a small form factor HW+SW platform for especially the Smart City services on Ultra Far Edge
- It can use 5G, WLAN or fiber connection
- It can be installed on light poles, vehicles, etc
- The µMEC proof-of-concept is based on LuxTurrim5G and open source components




µMEC deployment example: LuxTurrim5G

# Deployment examples




uMEC on top

5G terminal (or uMEC)

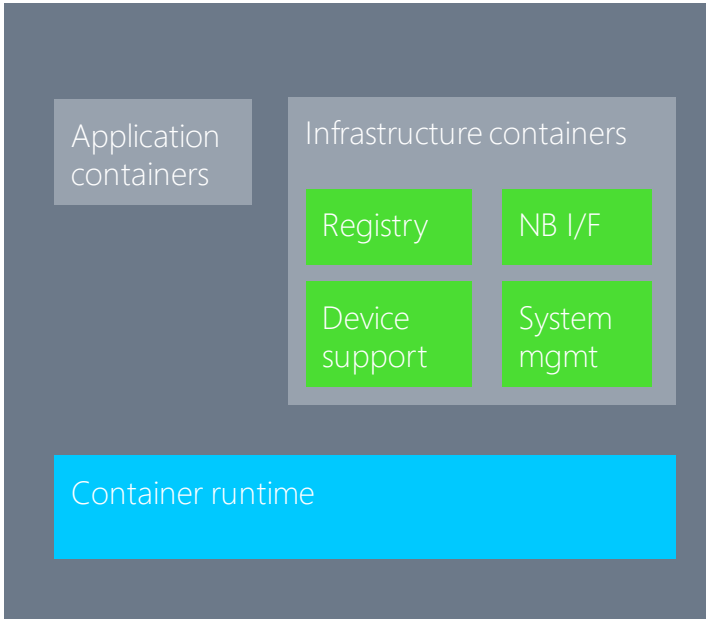
# µMEC uses

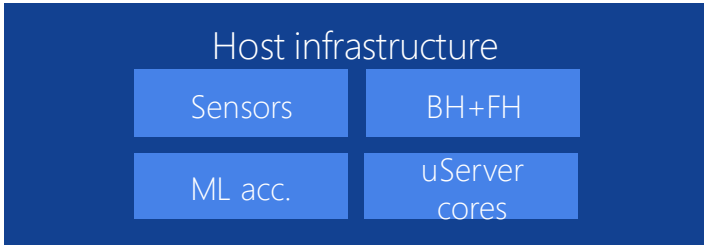
- The µMEC has different hardware variants and can support different sensors and displays
- The main operational mode for µMEC is collecting information, processing it, and forwarding it
- The µMEC can also provide services to local users and show information on a display
- The µMEC supports the emerging ETSI-standard Multi-Access Edge Computing (MEC) applications and application management

# Implementation

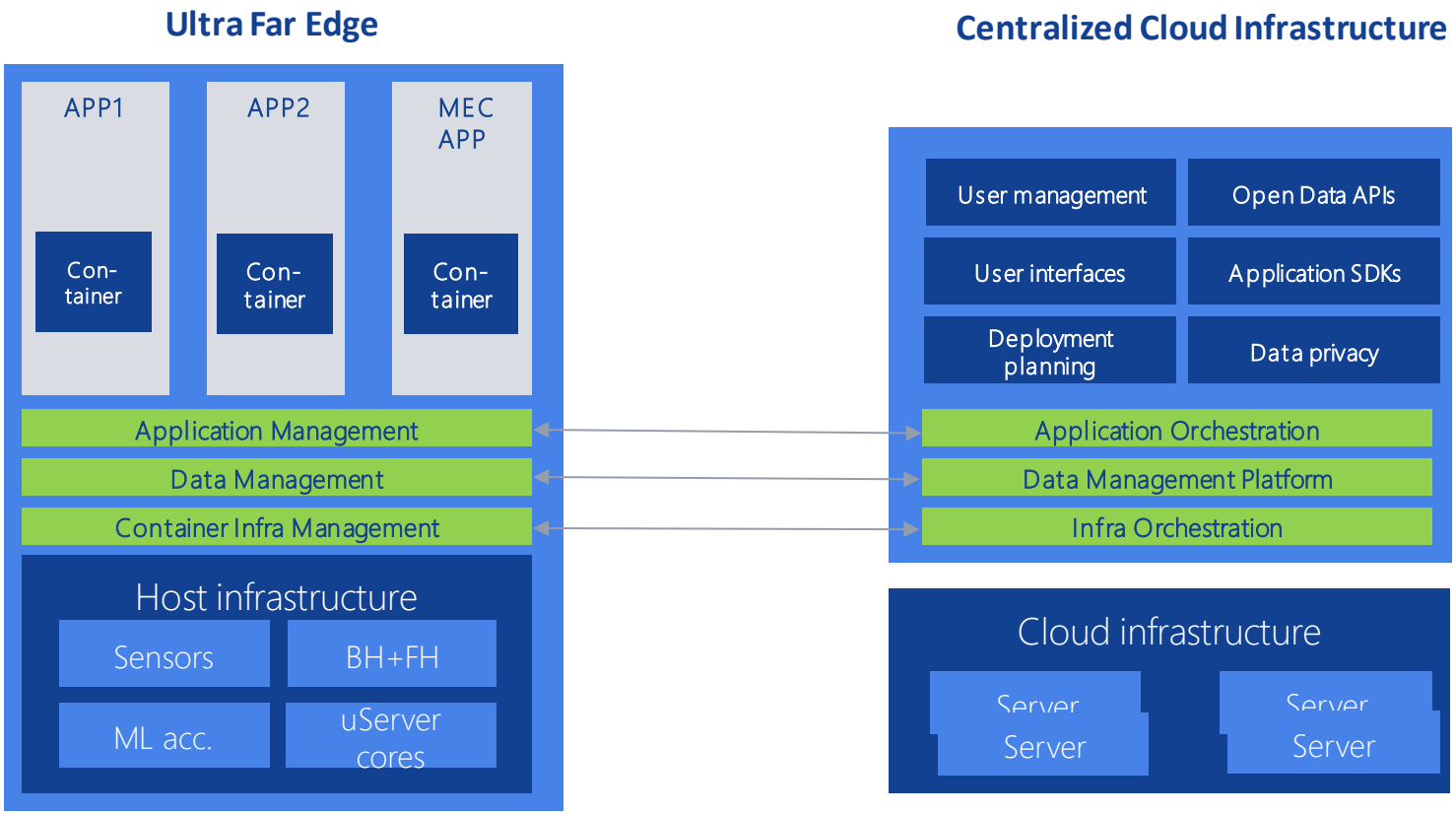
# Containers + EdgeX

- The applications will run as containers with support from container runtime
- The EdgeX Foundry is an open source IoT platform that runs as containers and has a lot of the needed functionality
- Running platform software as containers allows to upgrade them and allows to use a common management system



# Software view



# Possible components

Edge cloud

- EdgeX
- Kubernetes
- ONAP Edge extensions
- OpenStack controllers

Ultra far edge

- CRI-O
- Kubernetes edge extensions
- OpenStack compute