ETSI IoT Week 2022

Transparent Access to Edge Services for IoT

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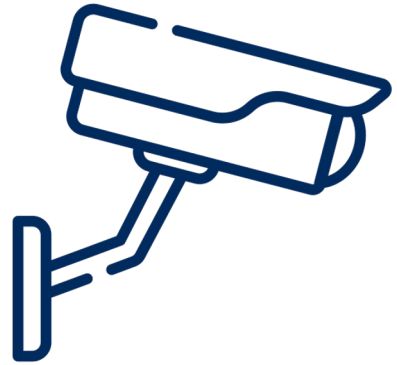
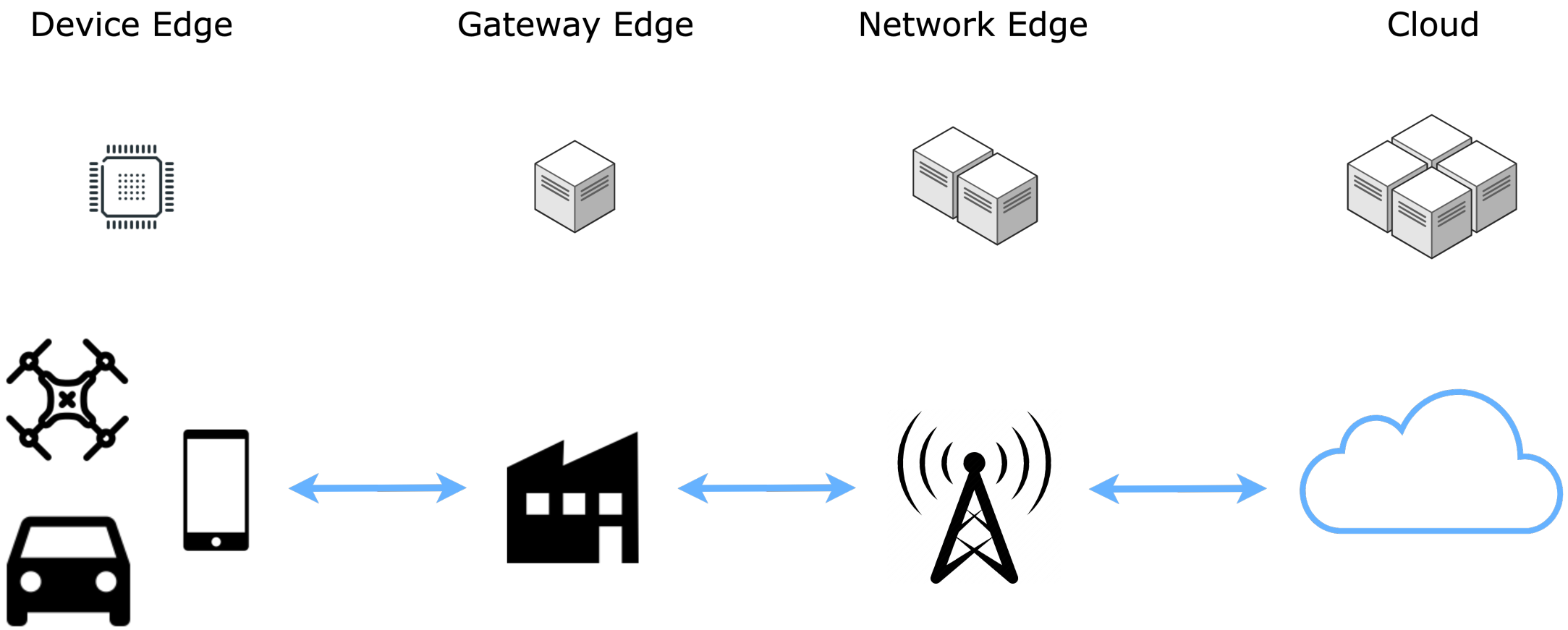
Bandwidth

Latency



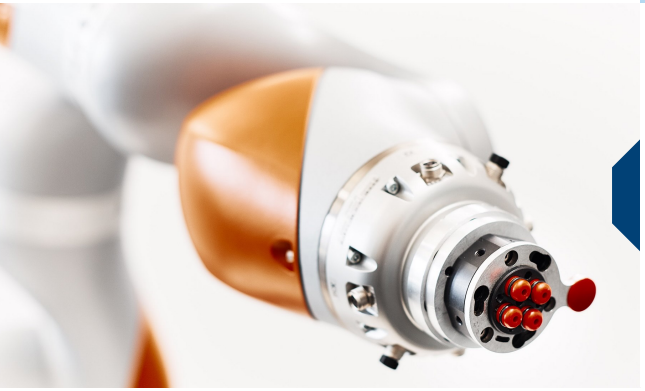
Privacy


Device Edge
Gateway Edge
Network Edge
Cloud

5GPlayground.at Research Projects

Virtual Realities

Communication in Swarms



Wireless Industrial Robotics

Smart City

Q

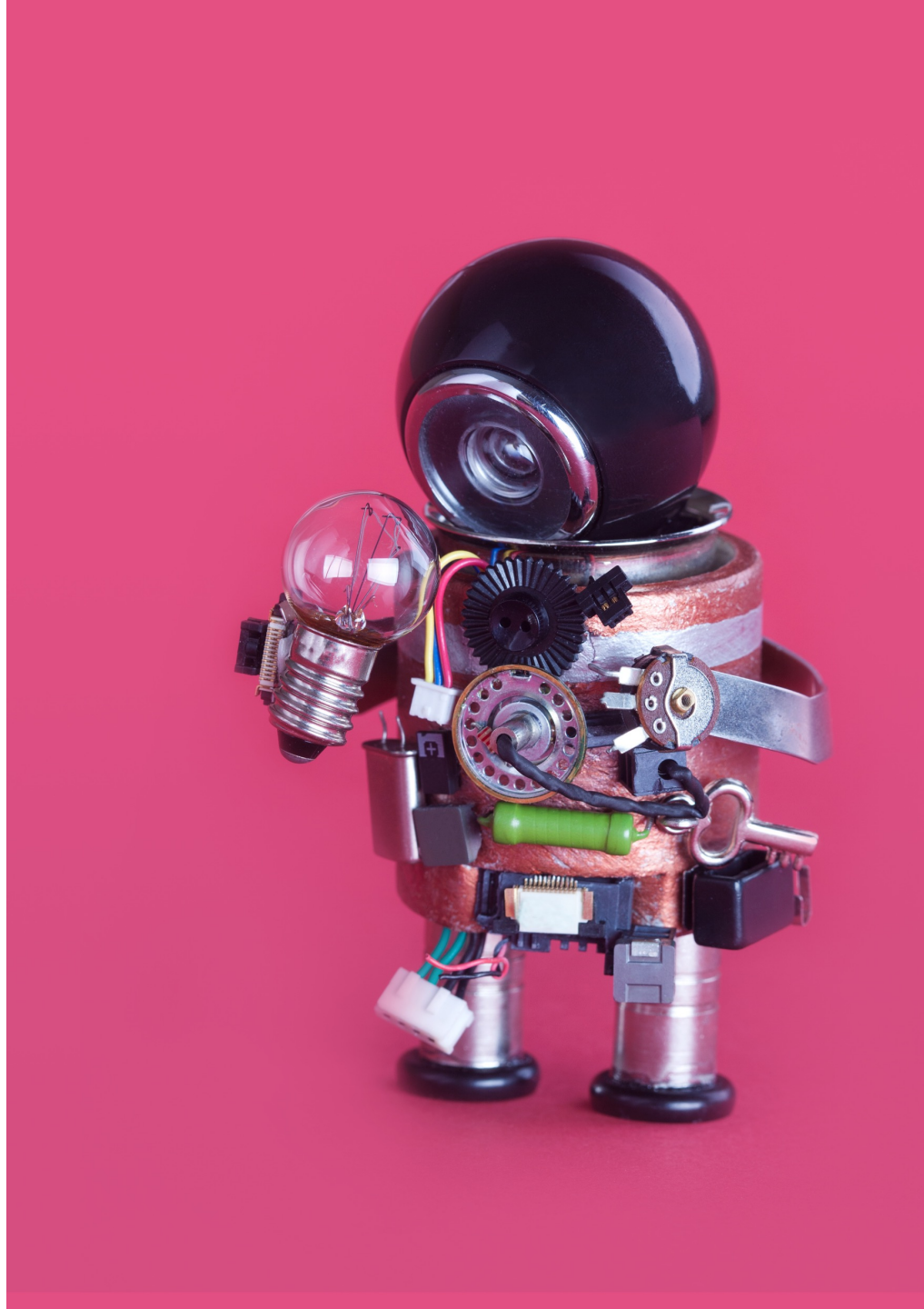
How to access edge services?

Similar to IoT Frameworks?

– AWS IoT Greengrass

– Google Cloud IoT

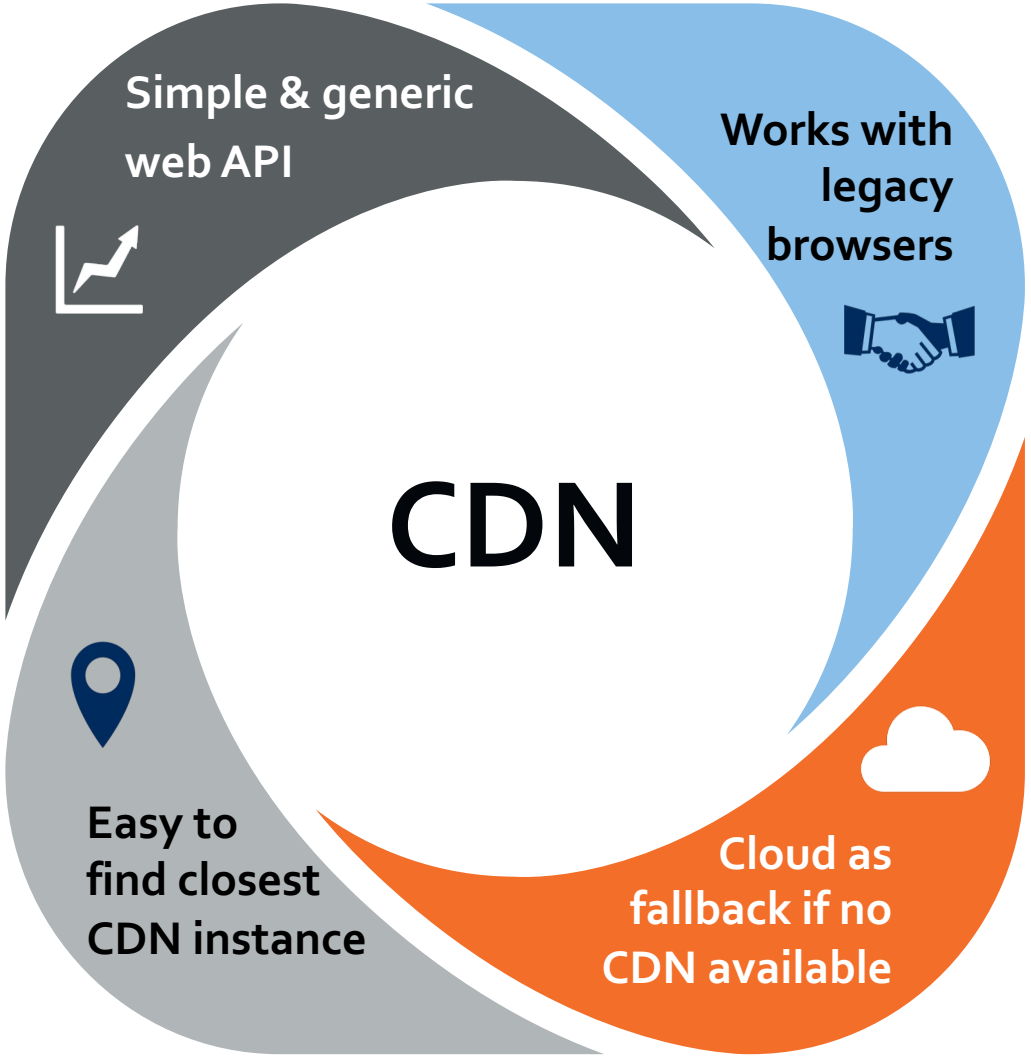
– Microsoft Azure IoT Edge



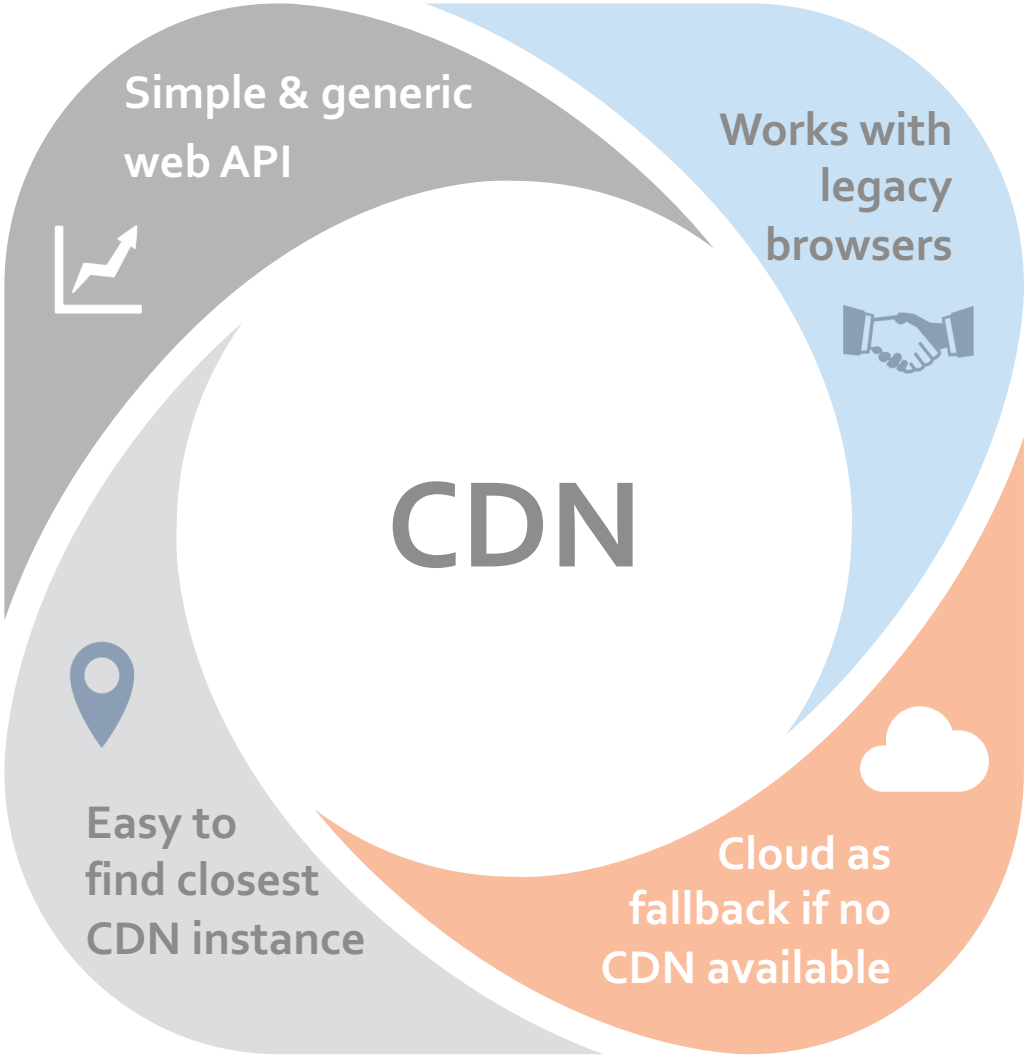
Transparent Access to Edge Clouds

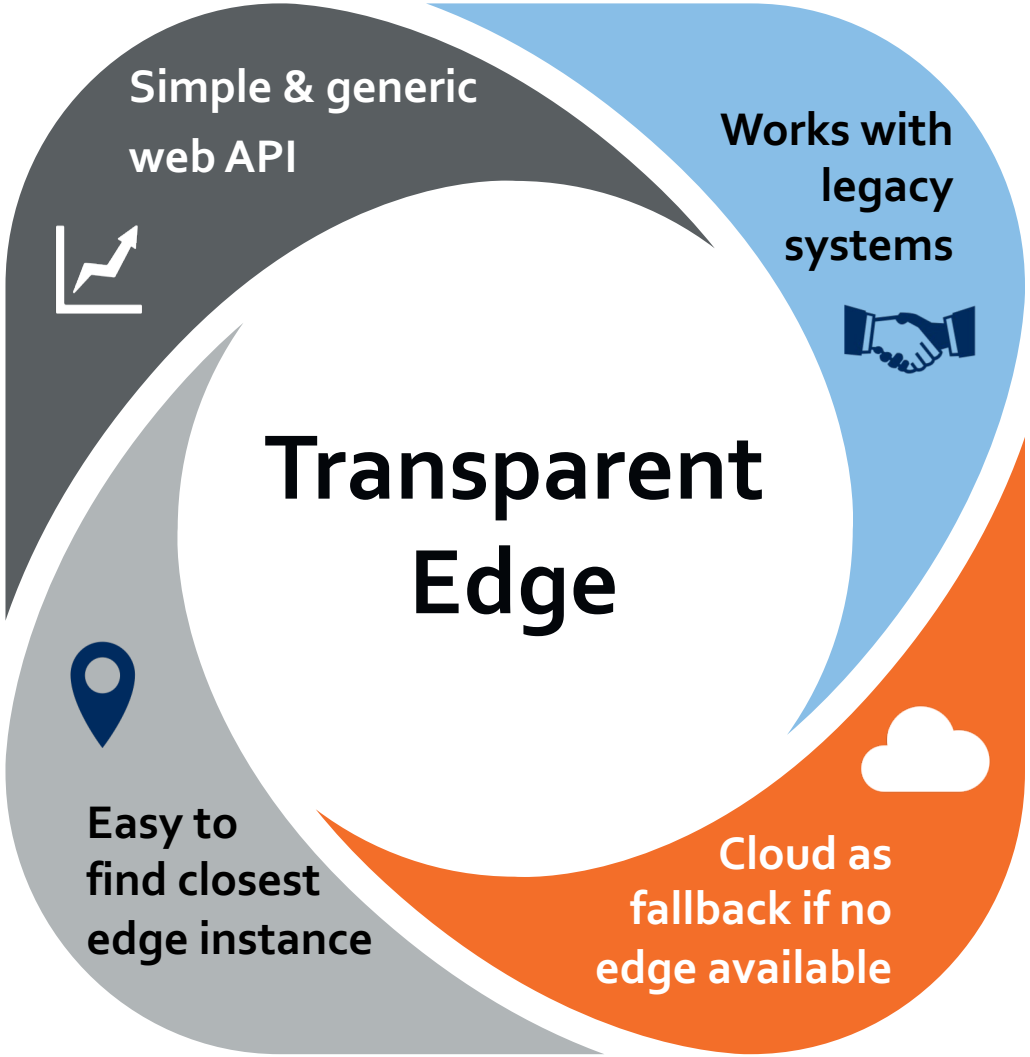
… similar to Content Delivery Networks (CDNs)

Why Transparent Access?



Why Transparent Access?





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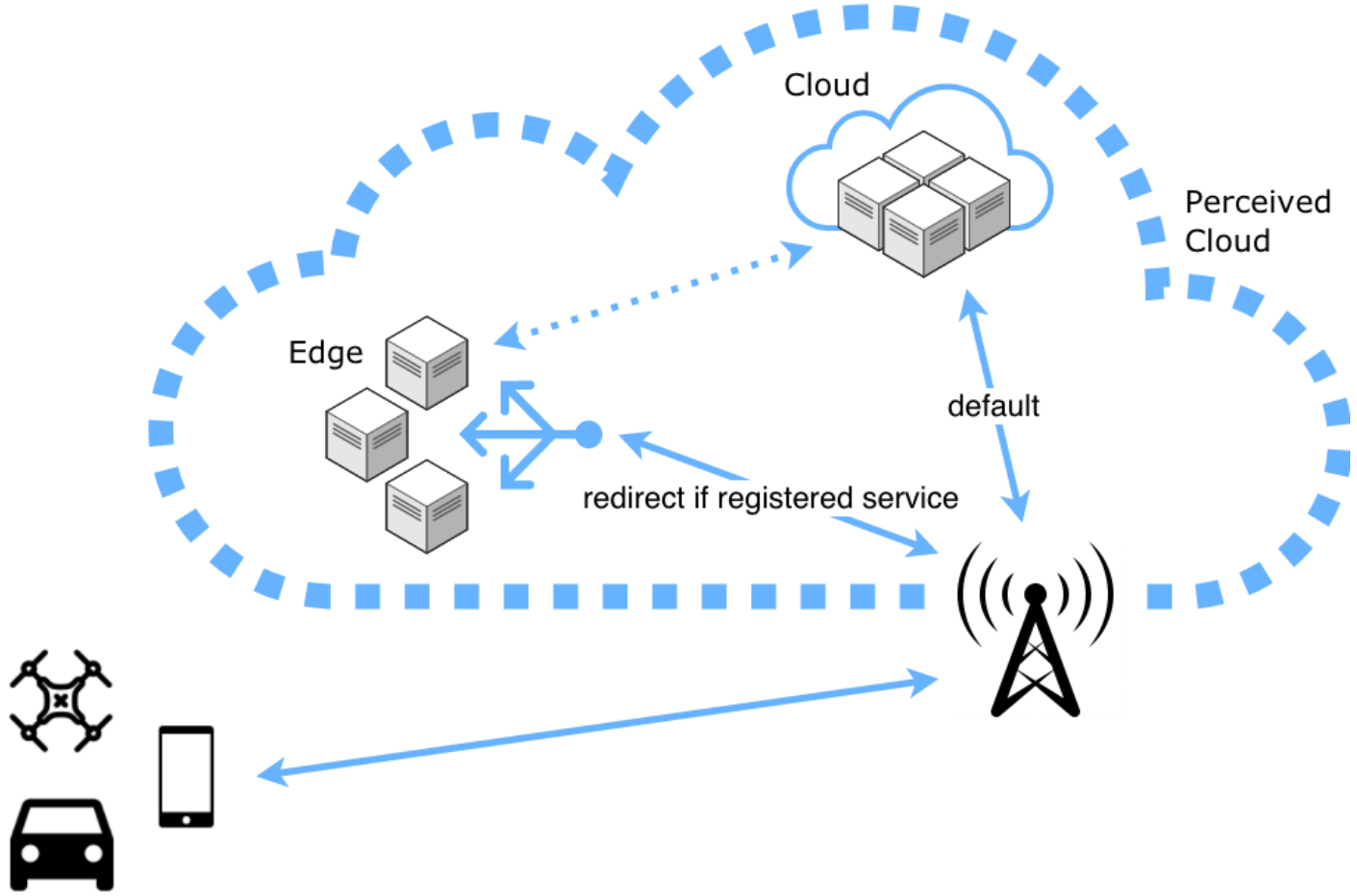
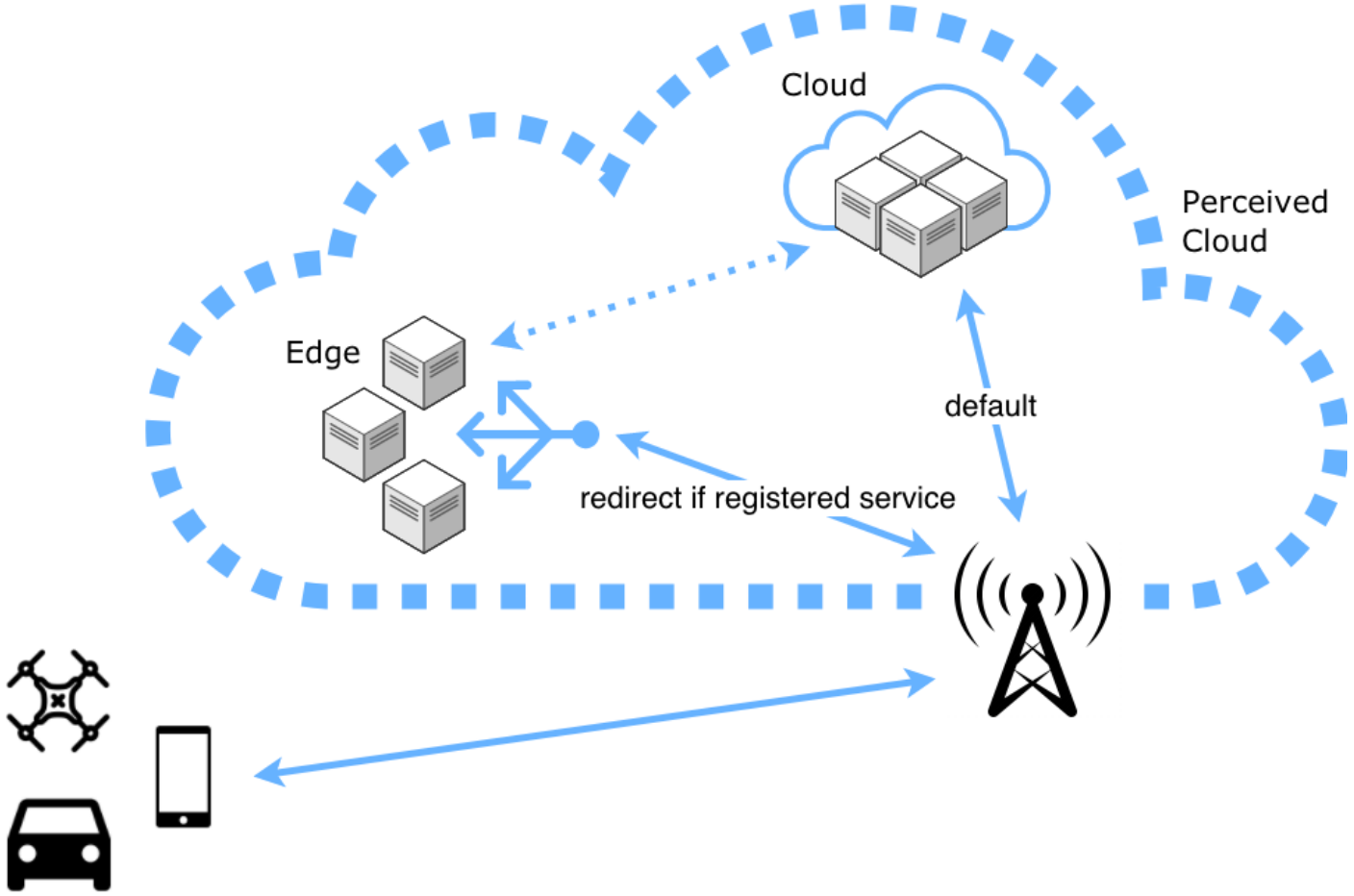
How can we achieve transparent access?

Use (virtual) cloud service IP addresses to access the local edge instance using SDN



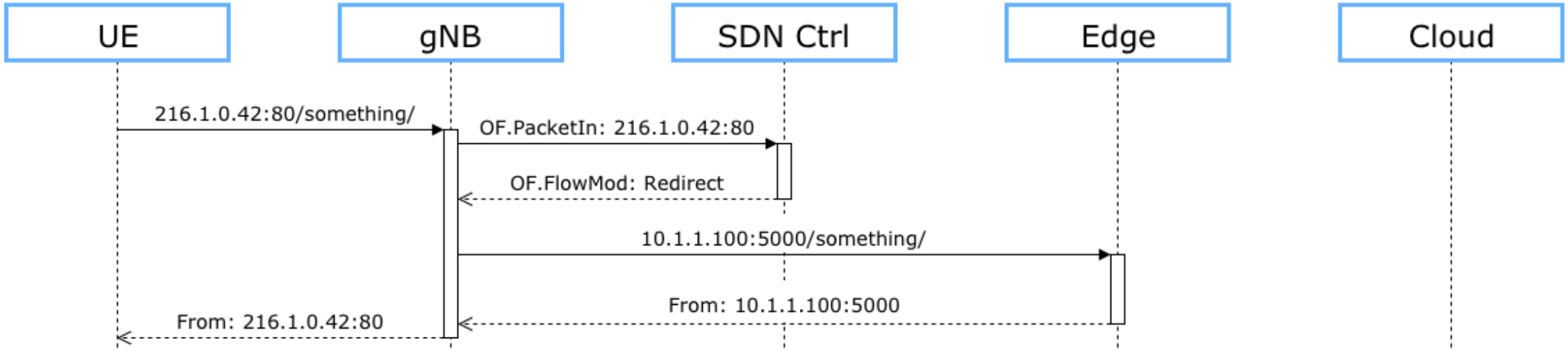
Use (virtual) cloud service IP addresses to access the local edge instance using SDN

The user (UE) seems to communicate with a remote cloud – it never sees the IP of the edge service



Routing with a registered service IP

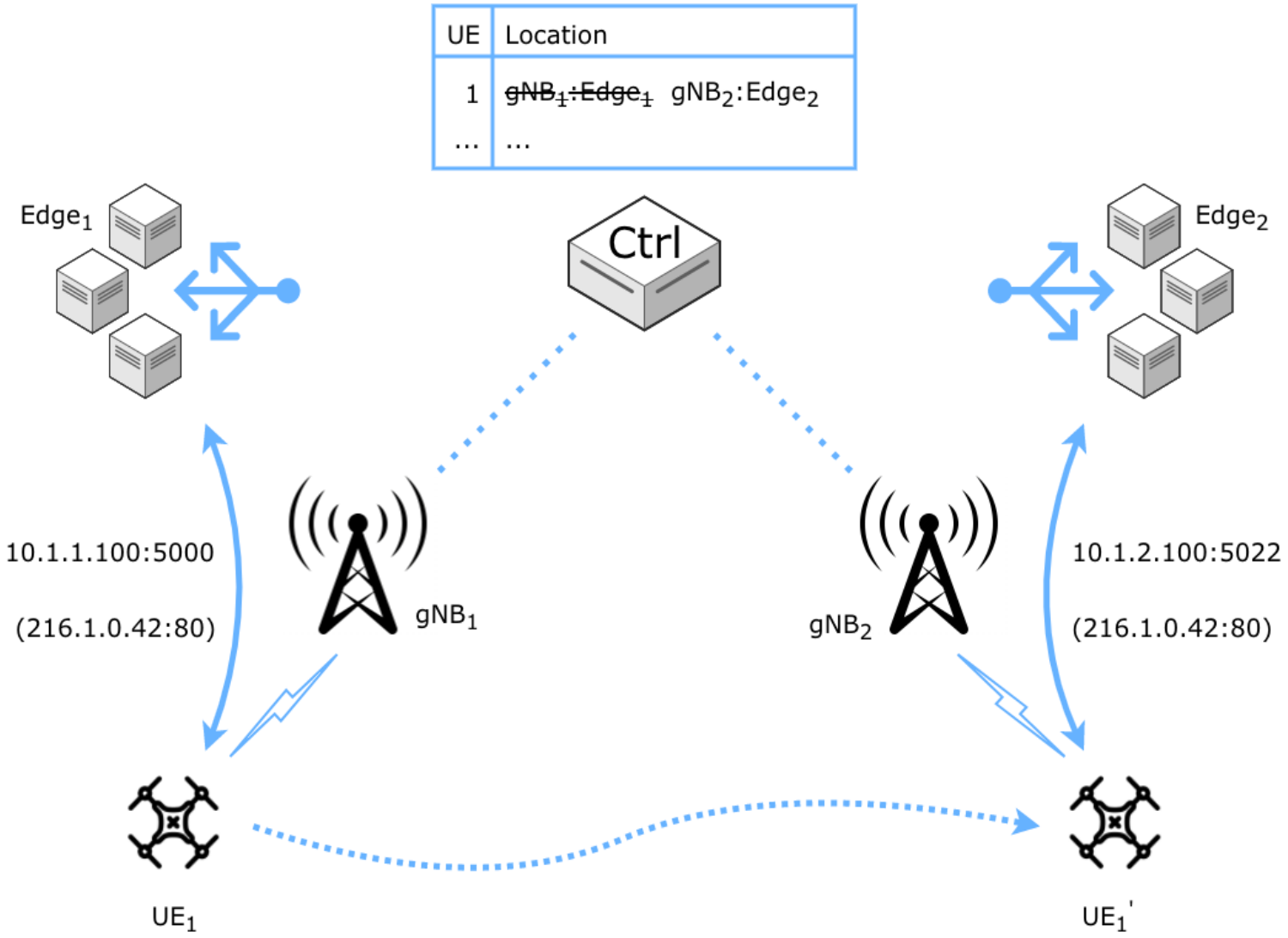
Software-defined network redirects to the closest/… edge server



User migration

Tracked by

SDN controller



Traffic Sign Recognition for Maintenance

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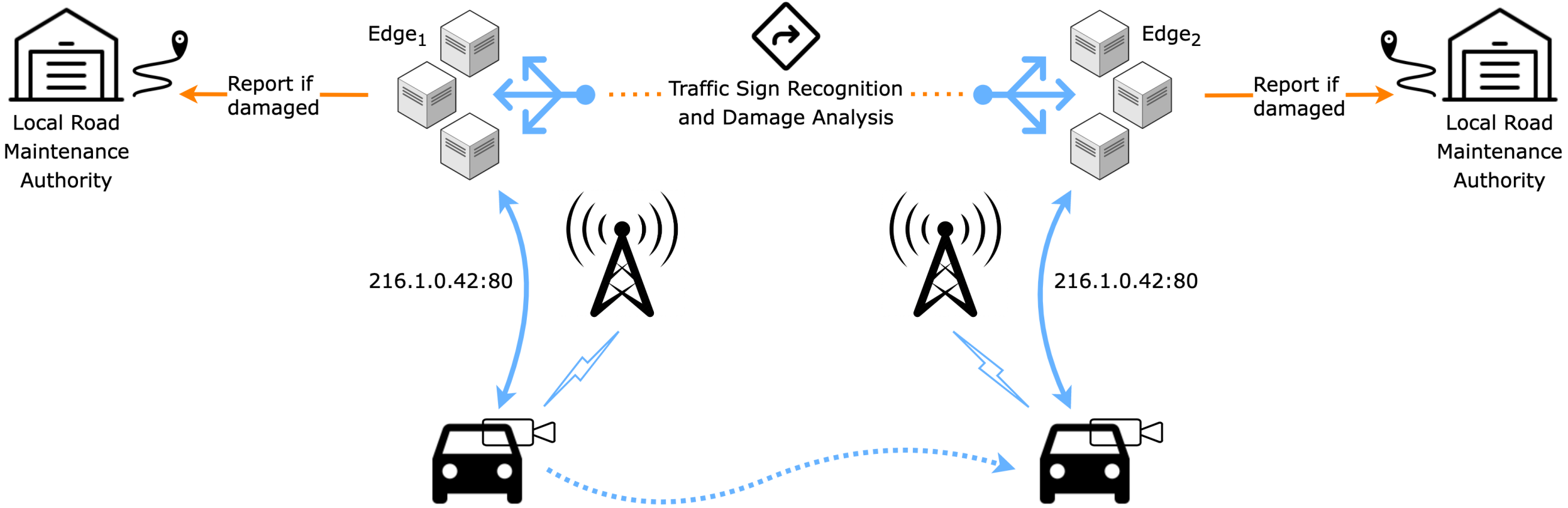

Transparent Access to Edge Services for IoT

1. Offload processing to the edge
2. Network redirects cloud requests
3. Needs no edge-specific logic on device

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