



# Droidcon MEC Hackathon 2020

## Edge Cloud from Telco Operators perspective

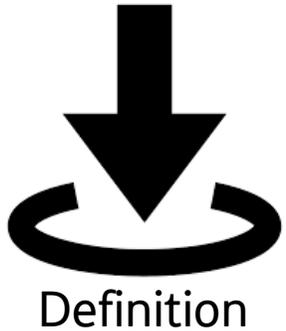
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# Edge Computing

It is a form of cloud computing realized moving data and processing power closer to the source of data generation



- complementary with centralized Cloud (public and private);
- part of a distributed computing topology;
- customer premises as possible edge location.

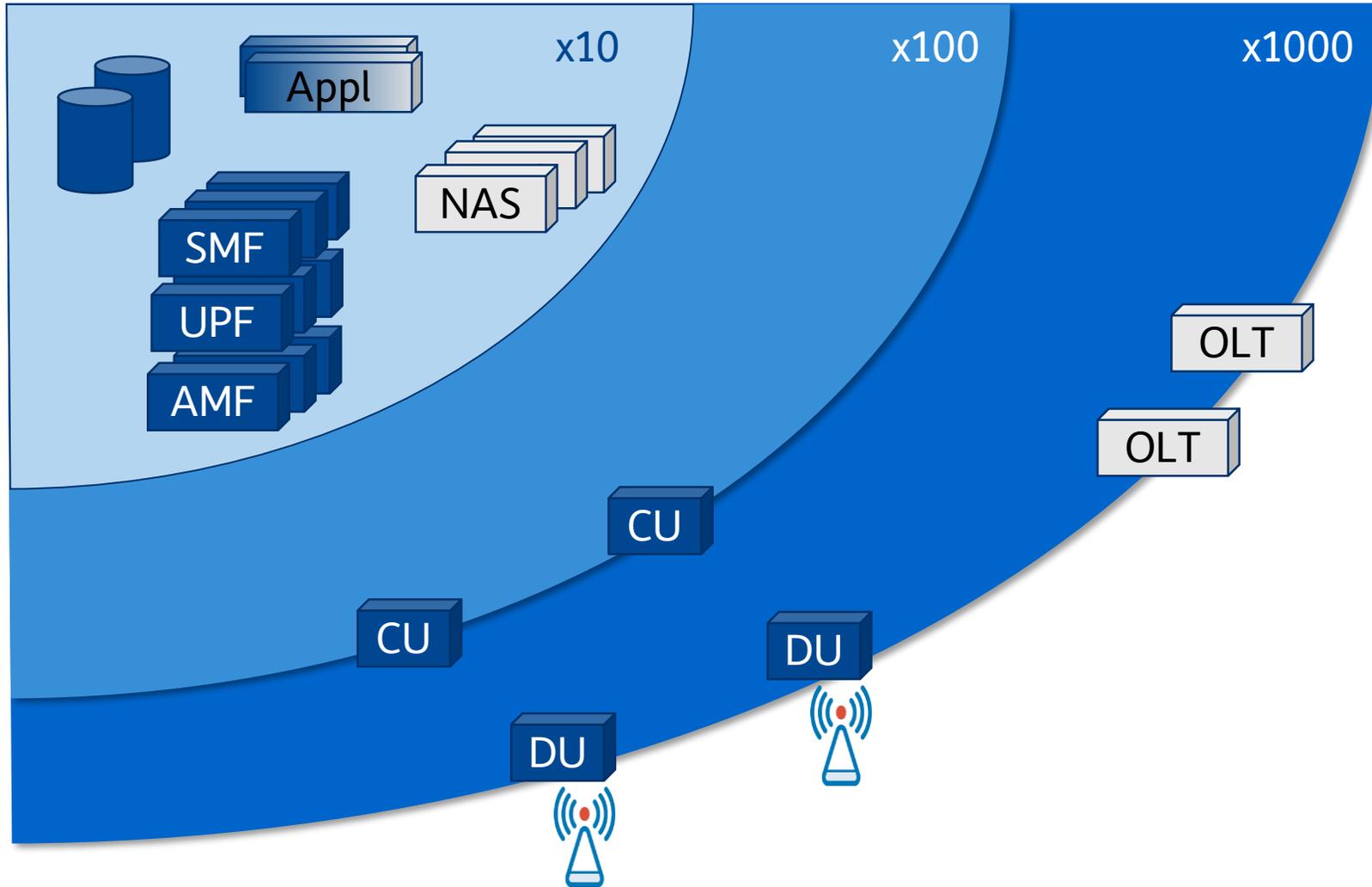
In practical terms, this means distributing hardware and software resources stacks in a large number of locations on the field, in close proximity to the last mile network.

## Telco Operators offer capabilities

Edge Computing offers “capabilities” ready to be consumed and able to support, alone or in combination, new use cases.

Edge Capabilities	
 <p><b>Low Latency</b></p> <p>Ultra-low latency (<math>\approx</math> ms) is critical for real-time type of application</p>	 <p><b>Privacy / Security</b></p> <p>Sensible data will remain local without going into public domain (internet)</p>
 <p><b>Local Processing</b></p> <p>Elaboration of data produced locally to take decision avoiding large data transfer toward central D.C.</p>	 <p><b>Limited Autonomy</b></p> <p>Ability to continue to run also when disconnected from central Data Center.</p>

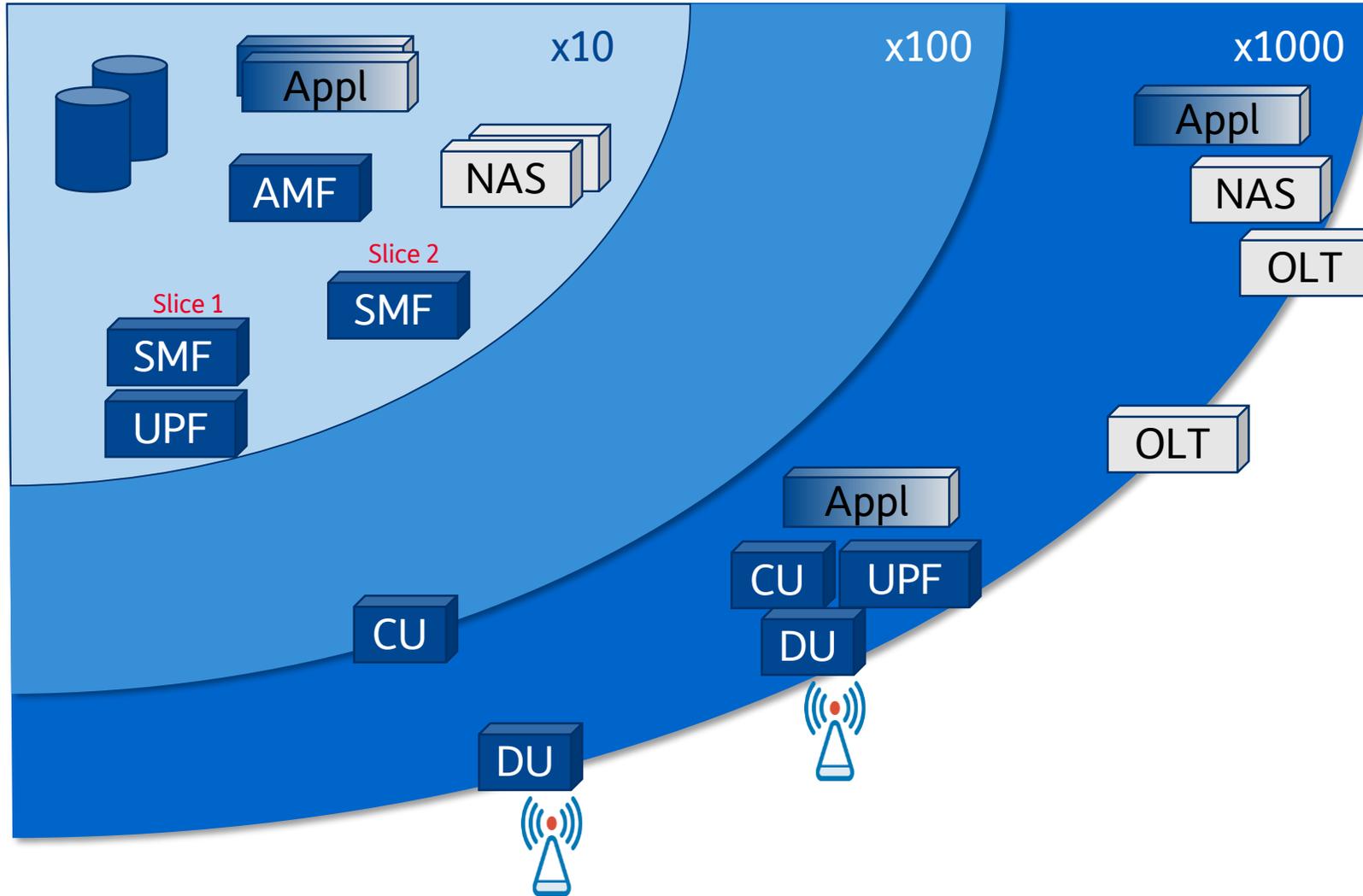
# Network functions distribution in a traditional deployment



Control, data, applications and user plane management are centralized.

Peripheral COs for access networks.

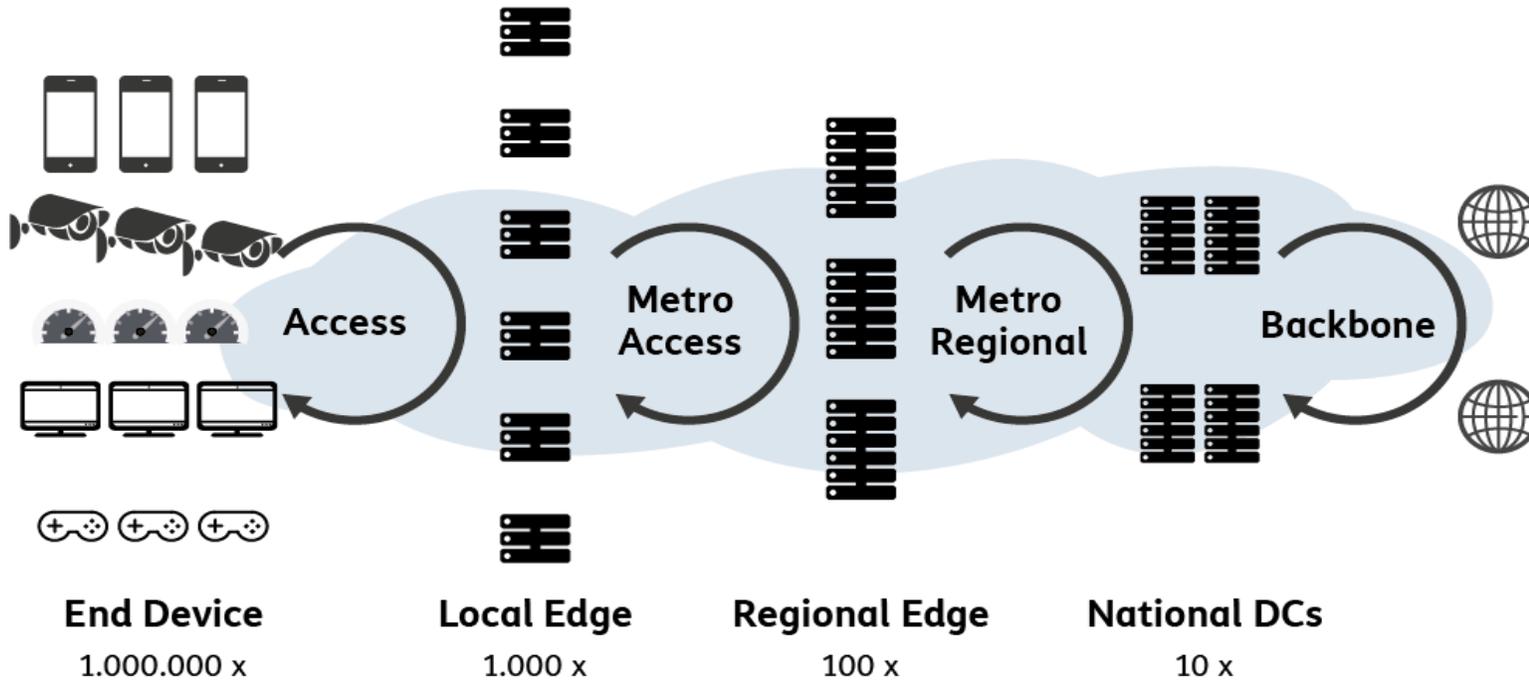
# Network Functions distribution in an Edge Computing deployment



New edge deployments require applications and user plane in peripheral COs.

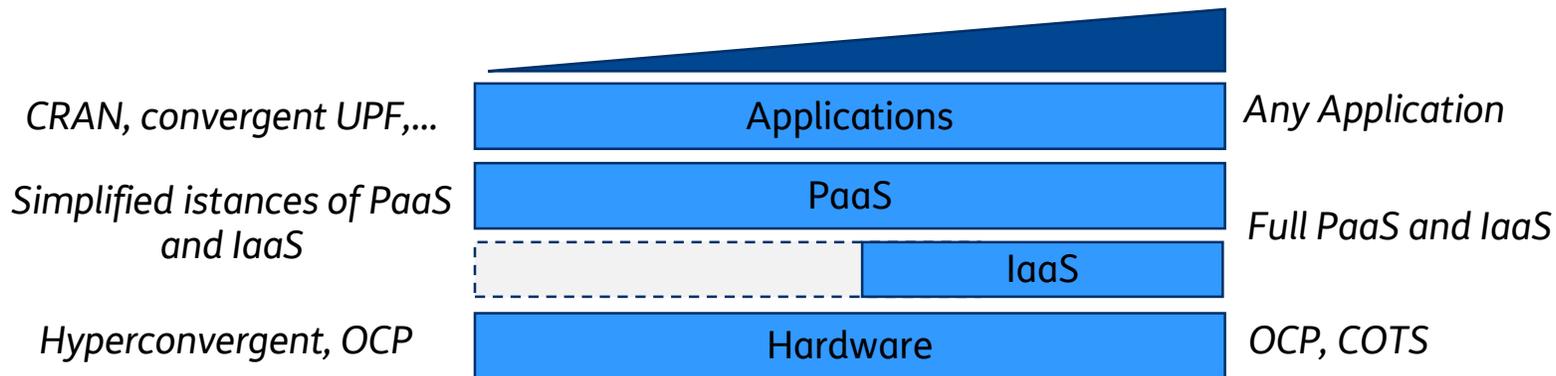
Slicing requires flexible allocation of NFs.

# Cloud Native Environment as a Distributed Environment



Edge Cloud is part of a distributed Cloud.

Cloud Native Applications can run centrally or across several geographically distributed sites and can be moved among different sites in a seamless way.



## Service Edge for developers

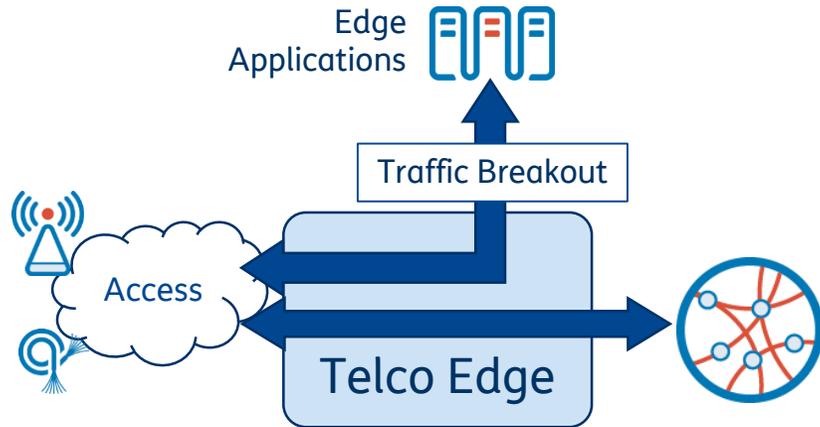
**Homogeneous set of tools:** Developers need to be able to use the same tools regardless of where the application is deployed. These tools must support rapid application development both at the edge and in the cloud.

**APIs exposure:** A wide set of open APIs makes it possible to access edge capabilities. Developers can use APIs to create new services and applications which exploit the edge capabilities and the underlying layers.

**Application deployment:** applications need to be deployed anywhere: in cloud, on-premises and at the edge. Containers, Kubernetes and lightweight application services are examples of technologies that allow application deployment from cloud to edge.

**Containerization:** Applications need to be deployed on many different edge instances, each instance with its resource and scaling profiles.. Combined with microservices, containers can be scaled up or down depending on many factors, resources changing, and other conditions.

# Edge Node breakout – a possible approach



## Telco Edge component

- Intercepts partially or totally the access traffic;
- Performs traffic break out towards external applications;
- Mobile and fixed accesses supported.

## Service Edge component

- Supports virtualized and cloud native applications;
- Offers APIs to enable external developers ecosystem;
- Native hybrid cloud design. Public and private cloud cooperate.



Telco Edge and Service Edge are located at the edge of the network and connected to the Telco transport network. Telco and Service Edge components can be deployed jointly or standalone.

THANK YOU