

A decorative pattern of small grey dots arranged in a grid-like structure that tapers and curves towards the right side of the slide.

## MOBILE EDGE COMPUTING A NEW FRONTIER FOR 5G & BEYOND NETWORKS

**Panel moderator**

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## 3G+ to 4G+

- **Densification** of the network with extensive introduction of small cells & RRH
- **Overlying** Macro and small cell networks networks
- Advanced **opportunistic spectrum** management targeting high spectrum reuse
- **SON** functionalities assisted by 'passive monitoring'
- Capillary deployment of computing & storage



Small  
Data

Collect / Orchestrate

Passive  
Network  
Monitoring

**Starting of wireless network *cloudification***

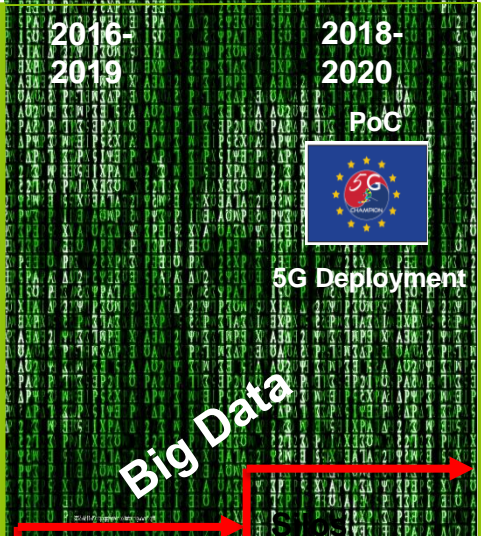
'*Clau*dification'  
step 1:  
RRH & C-RAN  
Cloud assistance

SON

# FROM SON TO RAN 2.0

4G+

5G



Small Data

Passive Network Monitoring

Proactive Reporting

Analytics

Vertical markets specific analytics

Tactile **Slicing**

**Distributed** Databases

Connect / Analyze

**Network 'Cloudification' : Step 2**

- Dense Networks
- New Spectrum
- Communication + Computing + Storage
- Femtos, D2D and Cloud
- ...

'**Cloudification**' step 1:  
RRH & C-RAN  
Cloud assistance

'**Cloudification**' step 2:

MEC & Hybrid RAN  
Local cloud for SON  
MEC UE empowerment  
(Edge offloading)  
Fog Computing

SON

RAN 2.0

# FROM SON TO RAN 3.0

4G+

5G

5G+



2016-2019

2018-2020 PoC

5G Deployment

Big Data

2020+ - 2025

Data Ingestion

Machine Learning Automation

Predictive Analytics

Integrated Analytics

Dynamic automated data driven decision & machine action

Taxonomy generation

Automated data enrichment & versioning

Vertical Market Evolution

Automated / Predictive Correction

Small Data

Passive Network Monitoring

Proactive Reporting

Analytics

Vertical markets specific analytics

Tactile Slicing

Distributed Databases

Distributed 'local-small' & context aware big data

'Claudification' step 1:  
RRH & C-RAN  
Cloud assistance

'Claudification' step 2:

MEC & Hybrid RAN  
Local cloud for SON  
MEC UE empowerment (Edge offloading)  
Fog Computing

RAN 2.0

'Claudification' step 3:

Full Distributed Cloud  
Ad-hoc / opportunistic  
Local cloud (clustering)  
Multi-cloud

RAN 3.0

SON



# FROM SON TO RAN 4.0

4G+

5G

5G+

Transformational



2016-2019

2018-2020 PoC

5G Deployment

**Big Data**

2020+ - 2025

**Data Ingestion**

2020+ - 2030

**Artificial Intelligence**

**Small Data**

Passive Network Monitoring

**Proactive Reporting**

**Analytics**

Vertical markets specific analytics

Tactile **Slicing**

Distributed Databases

**Integrated Analytics**

Distributed 'local-small' & context aware **big data**

**Predictive Analytics**

Dynamic automated data driven decision & machine action

**Machine Learning Automation**

Taxonomy generation

Automated data enrichment & versioning

**Vertical Market Evolution**

**Control**

**Artificial Intelligence**

**Cognitive computing:**

- Clusterization
- Classification
- Anomaly detection

**Intelligent Automation:**

- Predict
- Design
- Analyze
- Discover
- Detect
- Compare
- Find

**Web 4.0 Semantic Databases**

**SON**

'Claudification' step 1:  
RRH & C-RAN  
Cloud assistance

**RAN 2.0**

'Claudification' step 2:  
MEC & Hybrid RAN  
Local cloud for SON  
MEC UE empowerment (Edge offloading)  
Fog Computing

**RAN 3.0**

'Claudification' step 3:  
Full Distributed Cloud  
Ad-hoc / opportunistic local cloud (clustering)  
multi-cloud

**RAN 4.0**

'Claudification' step 4:  
Semantic Cloud

**HPC:**  
Improved processing parallelization, speed, EE

# Discussion with the Panel

**THE NETWORK:**  
**IS THE NETWORK READY TO DELIVER  
SERVICES '*ON THE EDGE*'?**



# **The Devices:**

**How the HW will change  
thanks to the Distributed  
Edge Cloud?**

**THE USERS:**  
**ARE USERS READY FOR 'MOBILE-EDGE  
COMPUTING (MEC)' EMPOWERED  
NETWORK?**

# FROM THEORY TO REALITY

...

# **THE DILEMMA: CENTRALIZED VS. DECENTRALIZED CLOUD**

# Thank you!

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