



**Cumucore**

# Replacing Ethernet Cable

# Problem Statement



## PROBLEM

How to provide mission critical connectivity securely and reliably on large geographical area?



## EXISTING TECHNOLOGIES

Public network: Shortcoming control of capacity because of best effort technology

WiFi Shortcoming: coverage because of low output power and missing handovers functionality

# Solution: Private 5G Network



## CUMUCORE SOLUTION

Non-public 5G network  
Replace WiFi Access Points:  
1:7 Indoors  
1:100 Outdoors

Cumucore Starter Pack:



# Cumucore Technology



**Cumucore provides non-public 5G network core products and services based on:**

- Linux on commercial HW
- Containers
- Layer 2 capability
- Easy to use GUI like in WiFi
- 3GPP standard compliance inside out

## Complete solution for verticals



**Application**



**Networking**



# Cumucore Traction

## Key Metrics

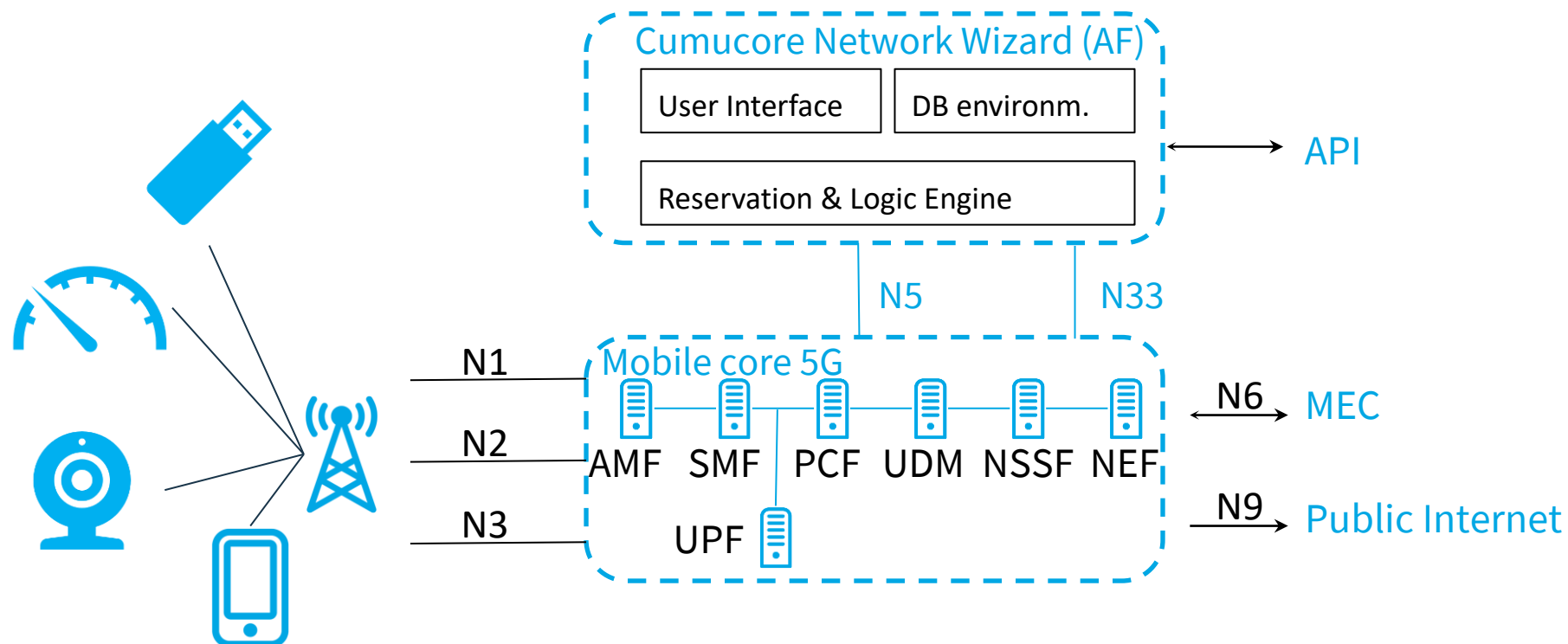
3 Patents  
2 Global Reseller LOIs  
5G OIL accelerator  
50+ Satisfied Customers

## Existing Customer Base



# Cumucore Technology

**Cumucore 4G/5G/6G mobile core based on containers:** Rapid installation and low footprint requirements and ultra-reliable for rough environments with limited network resources. Using RAN from different vendors (Nokia, Ericsson, Huawei, ORAN) based on customer requirements.



# Customer testimony

## Successful PoC in a live studio environment with TV 2 Denmark, Sony, Nevia, Node-H and Cumucore



**Morten Brandstrup**

Head of News Technology  
at TV 2 Denmark

“We were very confident in the outcome of the test, but even **we were surprised with the quality of the signals from the 5G-enabled cameras.** For us this proof of concept opens the possibility of using 5G cameras in a wider context, including studio-based productions. This will add greatly to the flexibility of our production workflows.”

Scan to read  
more:





# Team



**Dr. Jose Costa-Requena**

**Cumucore  
CEO & Former Co-Founder**

Co-founder and CTO Booxmedia Oy  
He worked for 10 years at Nokia where he contributed to 3GPP, chaired some standardization working groups and was member of patent board



**Mika Skarp**

**Cumucore  
Senior Product Manager**

Former Co-Founder & CEO CloudStreet Oy  
Co-founder of Networks Village Connection  
Founding President of WiMAX Forum IEEE802.16

**FTEs 20 people**

10 R&D. 10 Delivery and Customer support



**Cumucore is a mix of telecom veterans and new rising telecom stars**



100 Edge computing companies to watch in 2023



# Cumucore Use Case – Factory

Use case: Internet connectivity for devices and employees

Provide better radio coverage indoors & outdoors

1:7 indoors 1:100 outdoor WiFi AP replacement ratios

Session continuity

Capability to provide different service classes

Capability to connect cameras and IoT devices into own slices

Nokia eNB:

Flexi Zone Micro BTS FWHN- LTE Band-7 (2600 MHz High Band)

BaiCells gNB:

Aurora 243



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Nokia gNB:

2xAEQE N78 B43 (Outdoors 200w)

6xAWHQB ASiR-pRRH n78 B43 (Indoors)



# Cumucore Use Case – Mine

Use case: Automate drilling and explosion process  
Provide good quality video stream from hundreds of meters under ground  
Covering tens of kilometers of tunnels  
Capability to provide different service classes  
Capability to connect cameras and IoT devices into own slices

BaiCells gNB:  
Aurora 243



# Cumucore Use Case – Point of Sales



Use case: Internet connectivity for mobile PoS  
Provide higher reliability with local network for temporary locations like music festivals  
Fast deployment time less than 1 hour  
Capability to use lower quality backhaul  
Faster payment transaction  
Capability to have local voice communication

Nokia eNB:

Flexi Zone Micro BTS FWHN- LTE Band-7 (2600 MHz High Band)





# Cumucore Use Case – TV Cameras

Use case: connect TV cameras using 35 Mbps uplink capacity

Dynamic QoS to allow to have many high quality TV cameras in the network

Low delay <10ms

Same network can host different devices in different slices

NodeH gNB



# Cumucore Use Case – Autonomous Car



With Aalto University (Espoo, Finland)

Use case: connect autonomous vehicles to allow remote management

Low latency control and video cameras

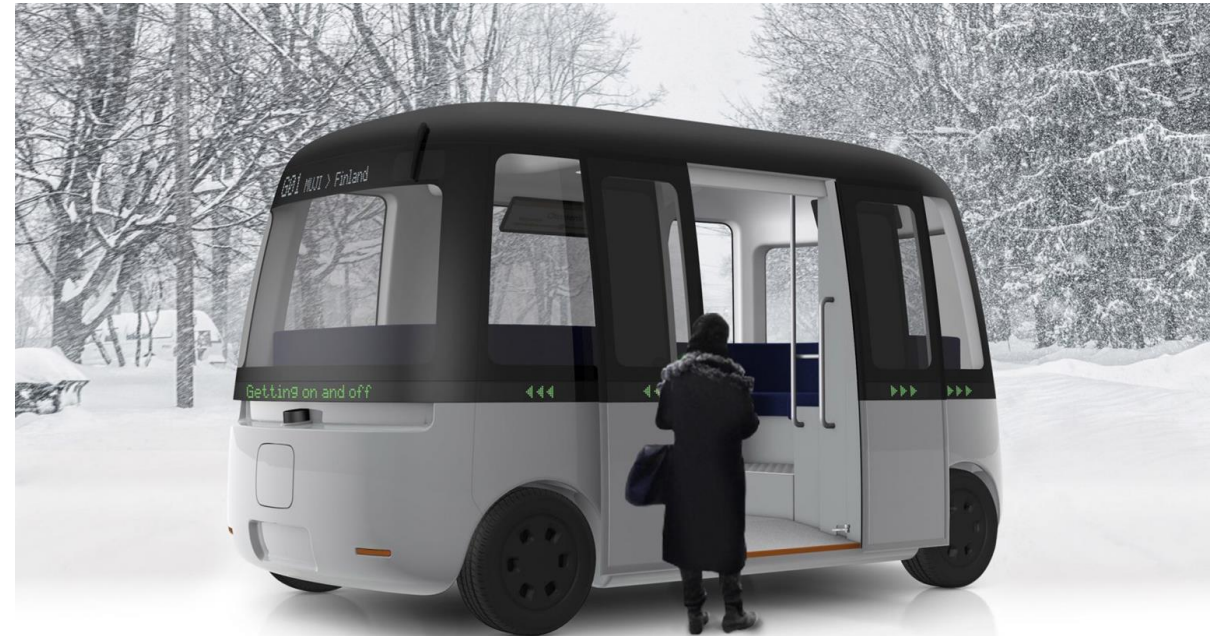
Same network can host different devices in different slices

Nokia gNB

AZQI AirScale RRH 8T8R n78 320W

Ericsson gNB

Dot



# Cumucore Use Case – Multi-hop

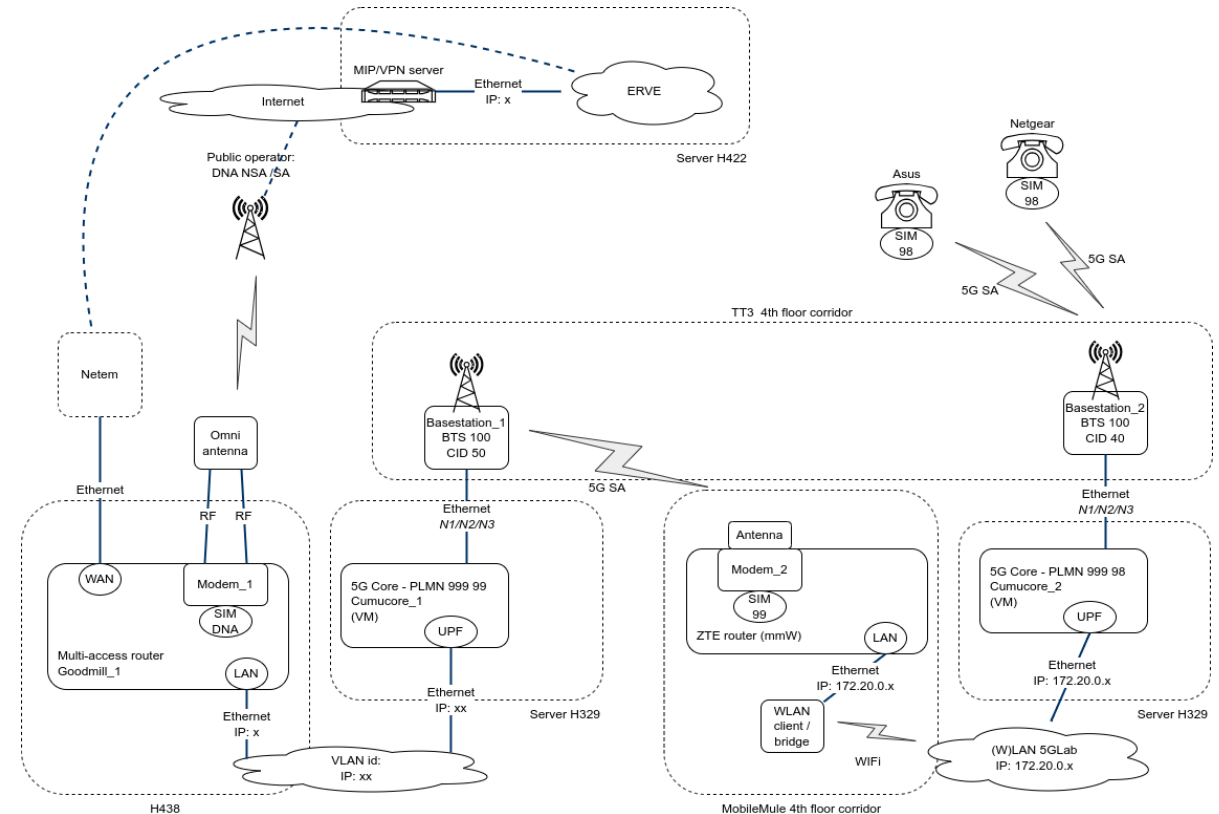
Use case: sharing back-haul

Provide cellular capacity to places that do not have cellular coverage

Improve radio coverage and have higher capacity through higher modulation

Possibility to use redundant back-haul

Nokia gNB:







Cumucore

# Usecase optimised networks



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