

Backhaul Planning Open RAN based on Real Network Data

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Rafael Filipe Matos

**Pedro Vieira
Diogo Parracho
Marco Sousa**

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MEET



ISEL
INSTITUTO SUPERIOR DE
ENGENHARIA DE LISBOA

- **Open RAN Concept**
- **Open RAN Cloud Architecture**
- **Backhaul Planning Results**
- **Conclusion**



What is Open RAN?

- Takes better advantage of the rapid advances in computing;
- Operation and maintenance of an OpenRAN system is simplified;
- Reduces capital and operational/maintenance expenses;
- Enables edge centric architecture;
- Uses best of breed components and software in architecting the network.

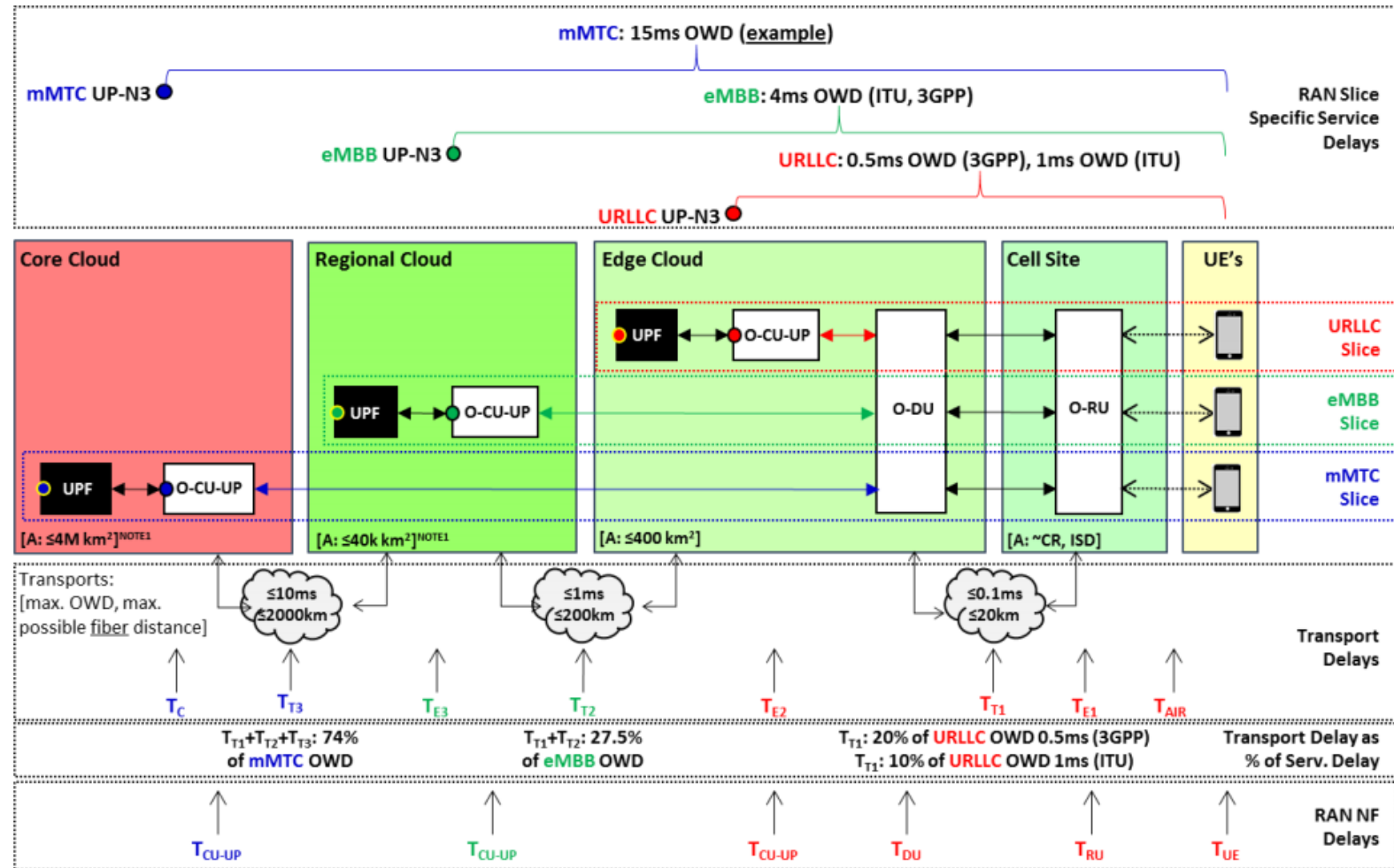


Widens the supply chain!

OpenRAN Cloud Architecture

User Plane Latency Components by 5G Service Slice and Function Placement

- Edge Cloud
- Regional Cloud
- Core cloud



Source: <https://www.o-ran.org/specifications>

Network Traffic and Open Ran Backhaul Results

- Network Volume and Latency Values**

	Mean	Max
Baseline		
Volume [Mbps]	0.38	58.07
Latency [ms]	0.24	16.60
Busy Hour		
Volume [Mbps]	5.12	874.31
Latency [ms]	4.45	218.28

- Nodes Per Clouds Type in Busy Hour in an Rural Area**

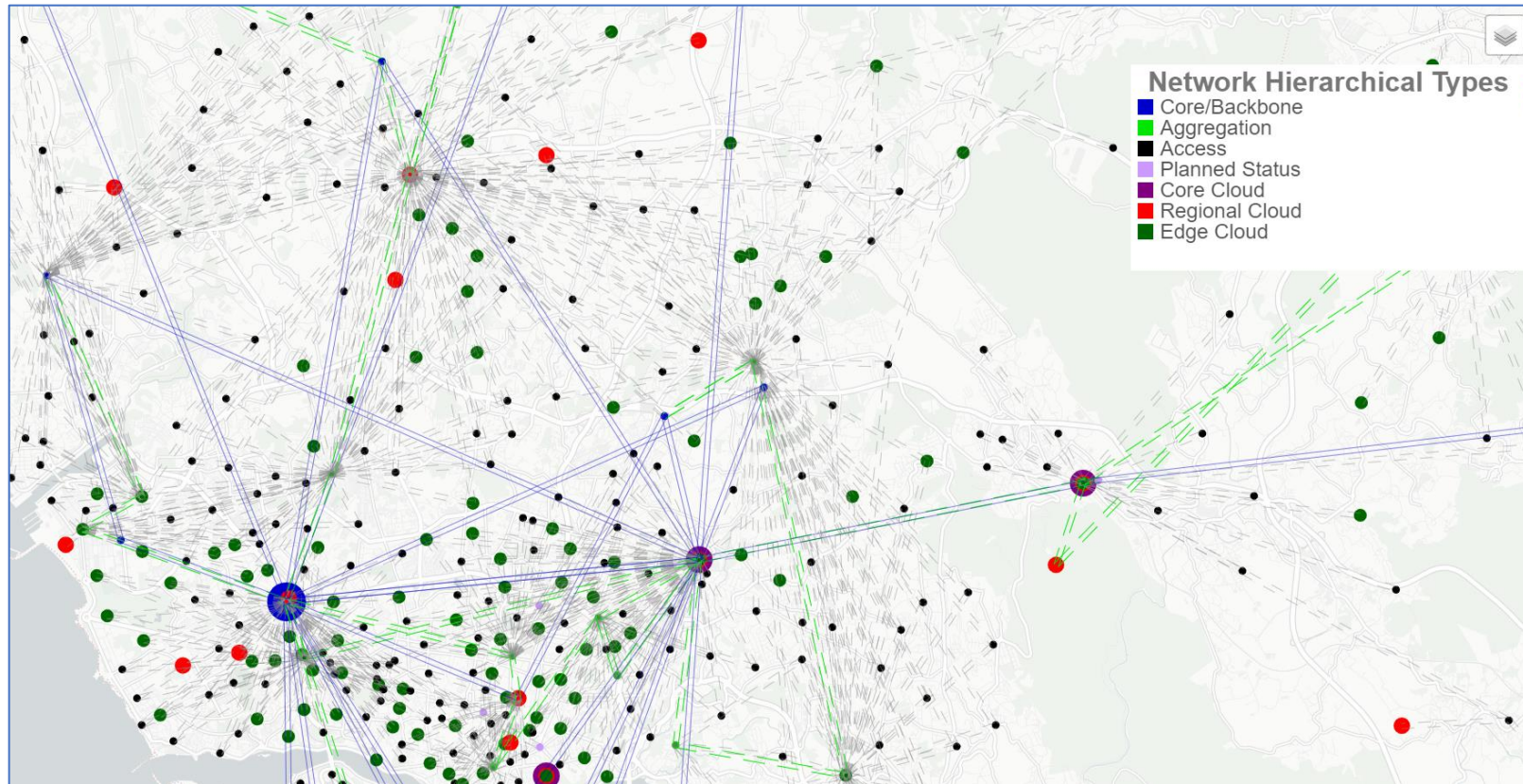
	Nodes Number	Max Hops
Busy Hour		
Core Cloud	699	8
Regional Cloud	1562	6
Edge Cloud	2313	5

- Nodes Per Clouds Type in Baseline Hour in na Rural Area**

	Nodes Number	Max Hops
Baseline		
Core Cloud	38	9
Regional Cloud	81	10
Edge Cloud	237	8

Open Ran Backhaul Results in a Urban Area

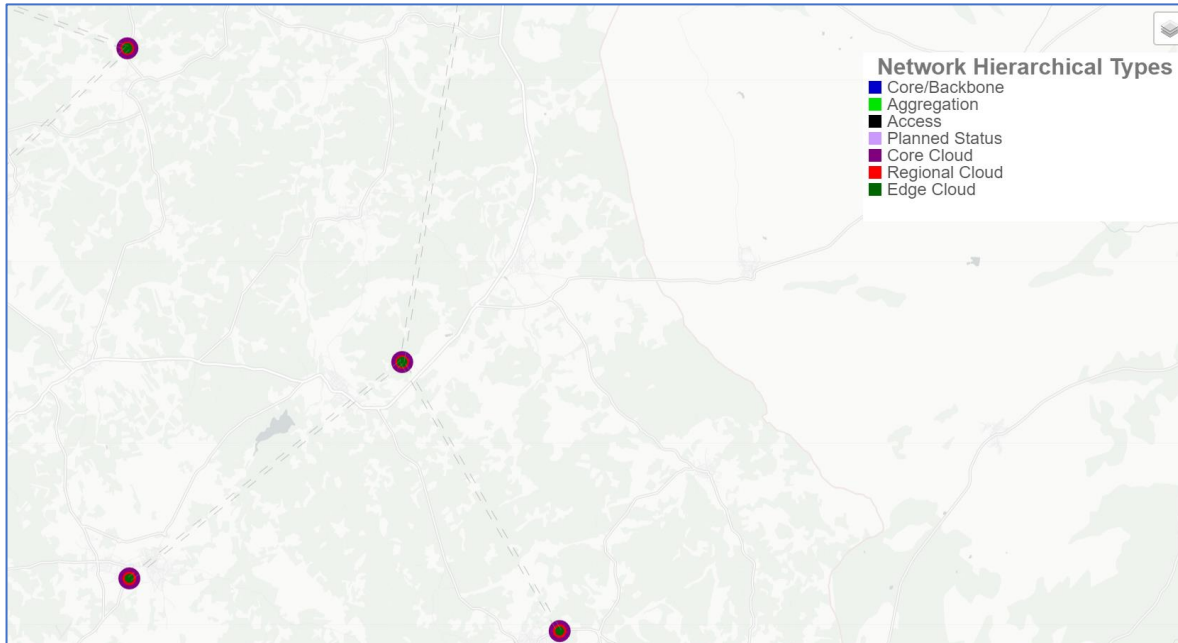
- **Busy Hour**



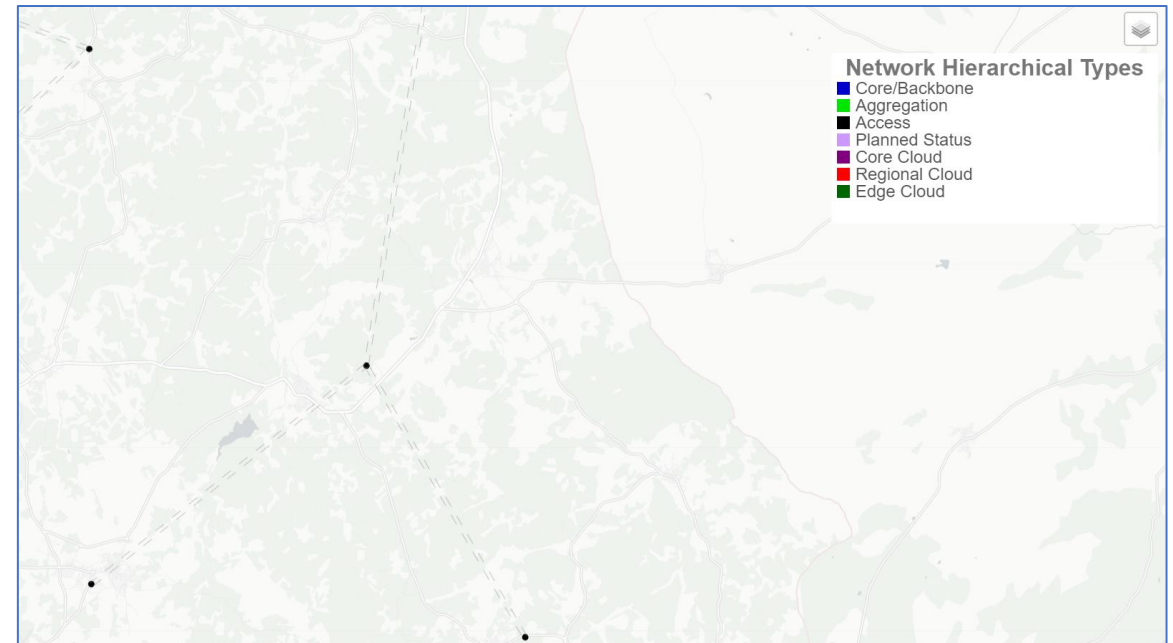
Live Network Open RAN Backhaul Planning

Open Ran Backhaul Results in a Rural Area

- **Busy Hour**



- **Baseline Hour**



- The impact of the network load, with respect to network latencies, affects the number of planned clouds.
- This study allows MNOs to anticipate and optimized and gradual deployment strategy for a Open RAN 5G network.
- MNOs can save investment in processing capacity when upgrading the transport connections.



Thank You!

