

5G-IANA Technical support & coaching



Thanos Xirofotos
Technical Coordination Team
Senior Cloud/NFV Engineer
txirofotos@ubitech.eu

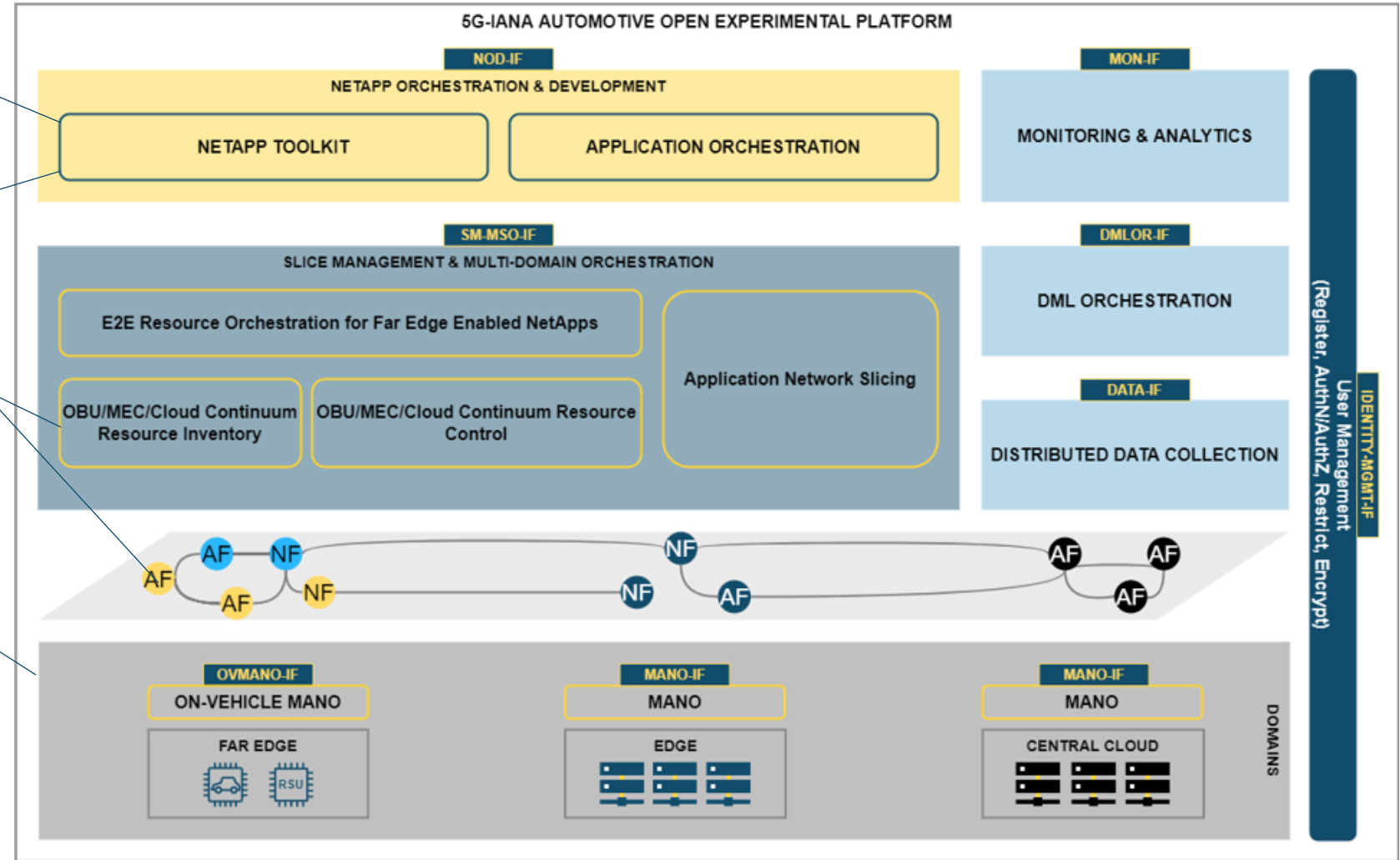


Overview of 5G-IANA platform

The 5G-IANA platform architecture



- Network application onboarding
- Use of component and nApp repository
- Interfacing with end user HW or/and introduction of new HW
- Deployment over the infrastructure



End users' interactions with platform

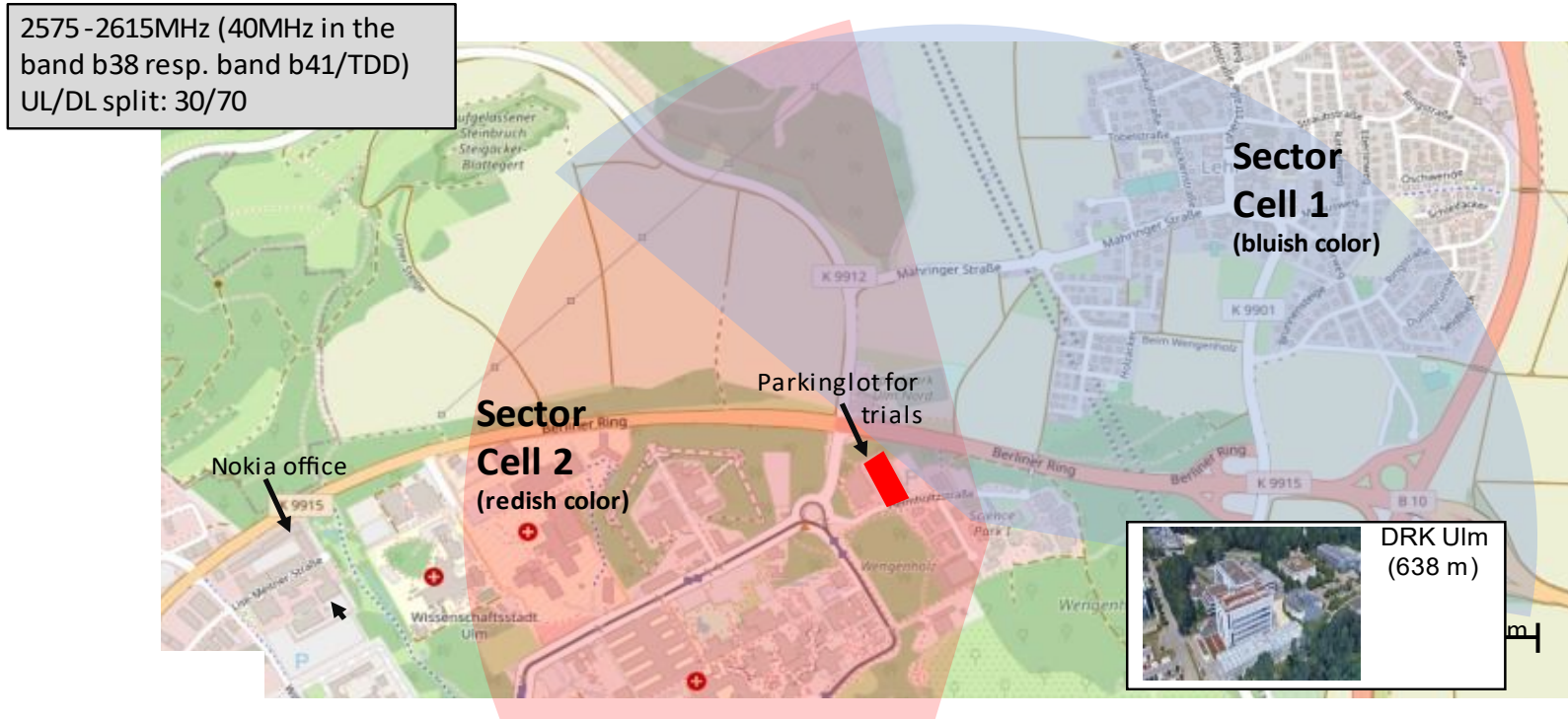


- **Network application onboarding**
- Through: nApp Toolkit GUI
- Onboarding of application docker images, component parameters and definition of nApp graph and networking parameters
- **Use of VNF repository**
- Through nApp Toolkit VNF Repo
- Listing and check of existing virtualized micro-service components (both app and network VNFs) and already structured nApps
- **Interfacing with end user HW or introduction of new HW**
- Reuse of drivers for existing HW elements and comply with their operational features
- Provide the drivers and connectivity for newly introduced HW elements
- Use of emulated devices (in compliance with the platform)
- **Deployment over the infrastructure**

Testbeds

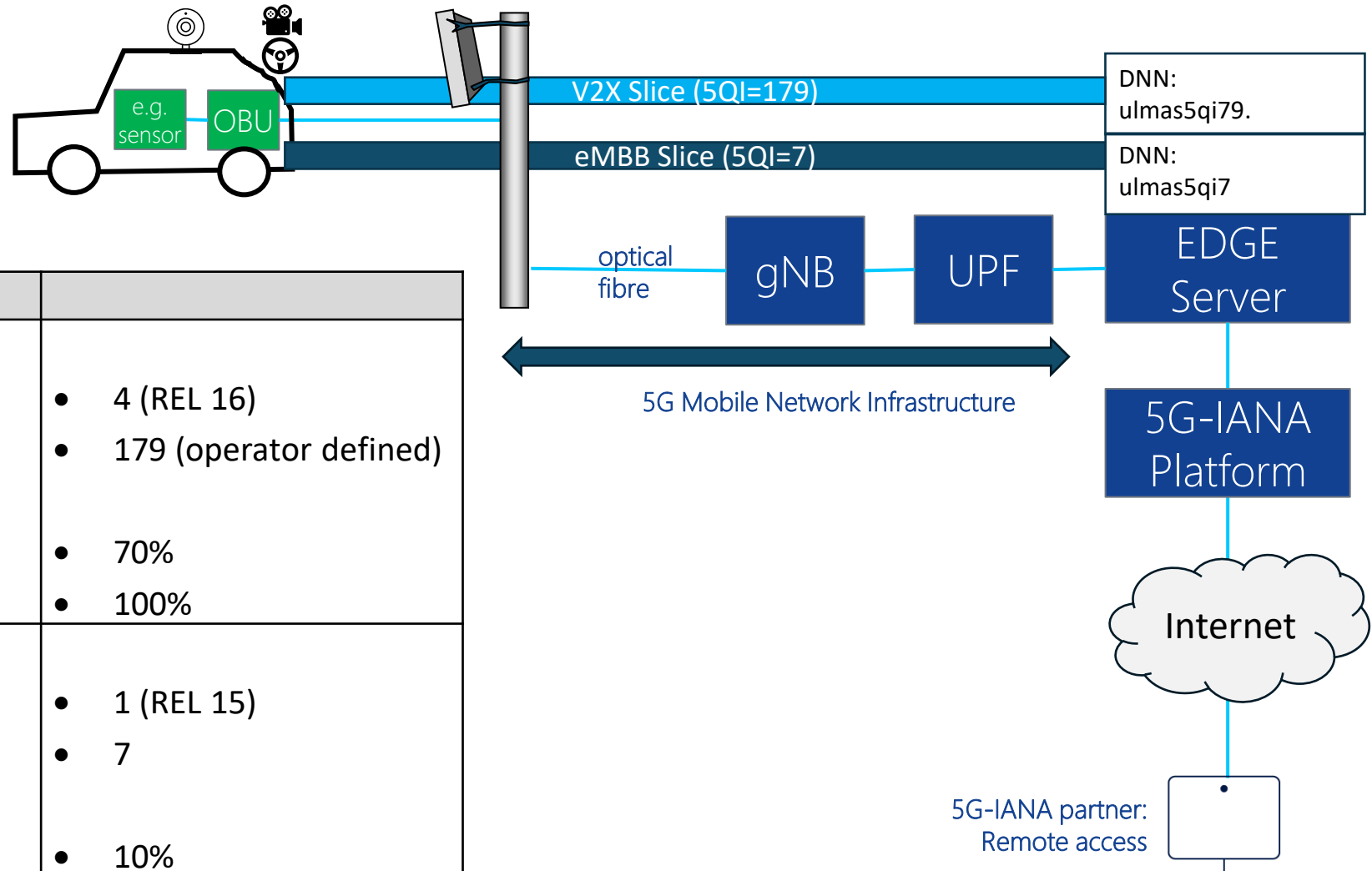
Nokia testbed (1/2)

- Nokia Testbed Located in Ulm Germany



Latency Optimised with $RTT < 20ms$
max. UL cell throughput in trial area $\approx 10Mbps$
max. DL cell throughput in trial area $\approx 100Mbps$
max. cell range for used band n38 $\approx 2km$

Nokia testbed (2/2)



Network Slice Configuration	
V2X slice	
<ul style="list-style-type: none"> • Slice/Service Type (SST) • 5QI 	<ul style="list-style-type: none"> • 4 (REL 16) • 179 (operator defined)
V2X specific slice parameters	
<ul style="list-style-type: none"> • minimum prioritized quota • maximum prioritized quota 	<ul style="list-style-type: none"> • 70% • 100%
eMBB slice	
<ul style="list-style-type: none"> • Slice/Service Type (SST) • 5QI 	<ul style="list-style-type: none"> • 1 (REL 15) • 7
V2X specific slice parameters	
<ul style="list-style-type: none"> • minimum prioritized quota • maximum prioritized quota 	<ul style="list-style-type: none"> • 10% • 100%

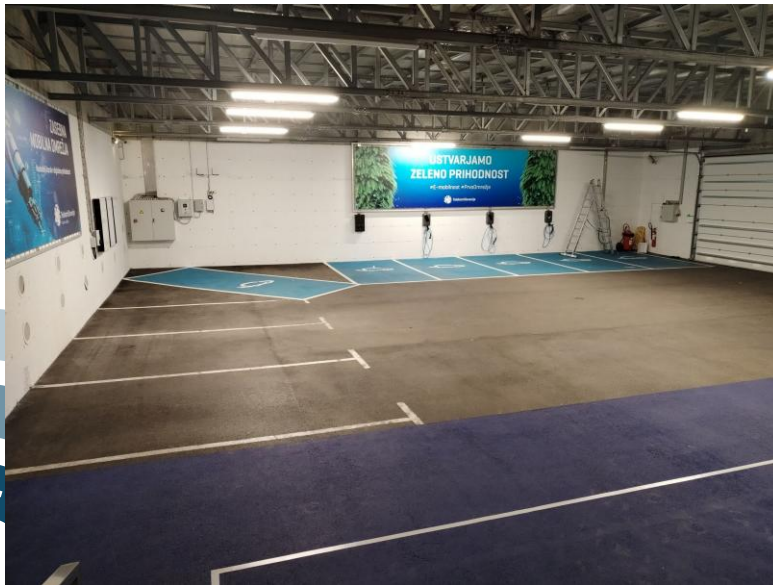
Slovenian testbed (2/2)



Dedicated 5G infrastructure is located at Telekom premises in Ljubljana (research Laboratory).

The infrastructure consists of:

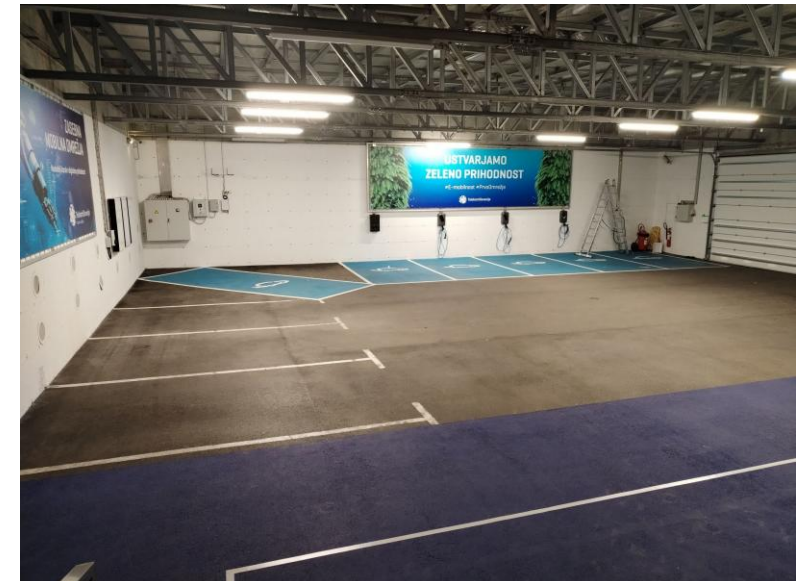
- 5G radio access network: 3.5 GHz
- 5G SA Core
- Centralized Edge
- Cloud and virtualisation environment
- Network connectivity
- Optional 4G – LTE radio access network: 1.8 GHz



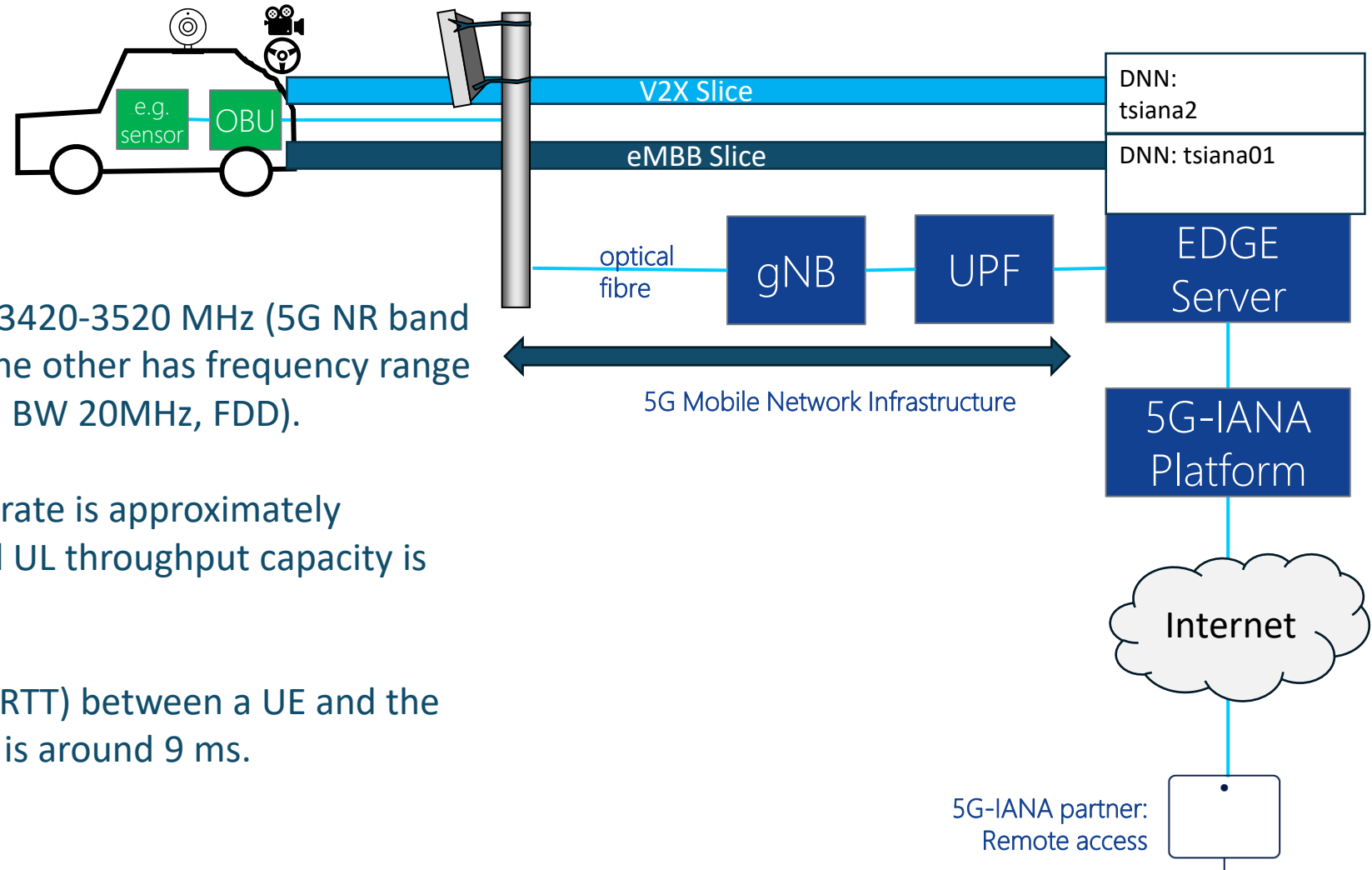
TS testbed (2/2)



- Two locations are available.
- One of them is indoor garage where vehicle testing can be performed and outdoor company's parking can be used, if necessary, with additional configuration of outdoor cells needed.
- Both locations have same radio configuration with two indoor cells each.
- One cell has frequency range 3420-3520 MHz (5G NR band b78, BW 100MHz, TDD) and the other has frequency range 1840-1860 MHz (LTE Band b3, BW 20MHz, FDD).
- Maximum cell DL throughput rate is approximately 660Mbps and a maximum cell UL throughput capacity is approximately 100 Mbps.
- The average round-trip-time (RTT) between a UE and the EDGE-Server is 15 ms. Lowest is around 9 ms.



Slovenian testbed (2/2)



- One cell has frequency range 3420-3520 MHz (5G NR band b78, BW 100MHz, TDD) and the other has frequency range 1840-1860 MHz (LTE Band b3, BW 20MHz, FDD).
- Maximum cell DL throughput rate is approximately 660Mbps and a maximum cell UL throughput capacity is approximately 100 Mbps.
- The average round-trip-time (RTT) between a UE and the EDGE-Server is 15 ms. Lowest is around 9 ms.

Coaching Methodology

Steps



1. Create the Maestro-Compose yaml
2. Upload it on the Gitlab
3. **Validate the consistency of the maestro-compose.yml (Coaching session 1)**
4. **After validation, perform the onboarding (Coaching session 1)**
5. Access the GUI
6. **Verify both the AFs and the nApp is identical to the descriptor you provide (Peer to peer session)**
7. Provide the runtime information of the nApp graph before instantiation
8. Instantiate the blueprint
9. **Debugging (Peer to peer session)**

www.5g-iana.eu

Thank you for your attention!

Any questions?



5G-IANA project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101016427.