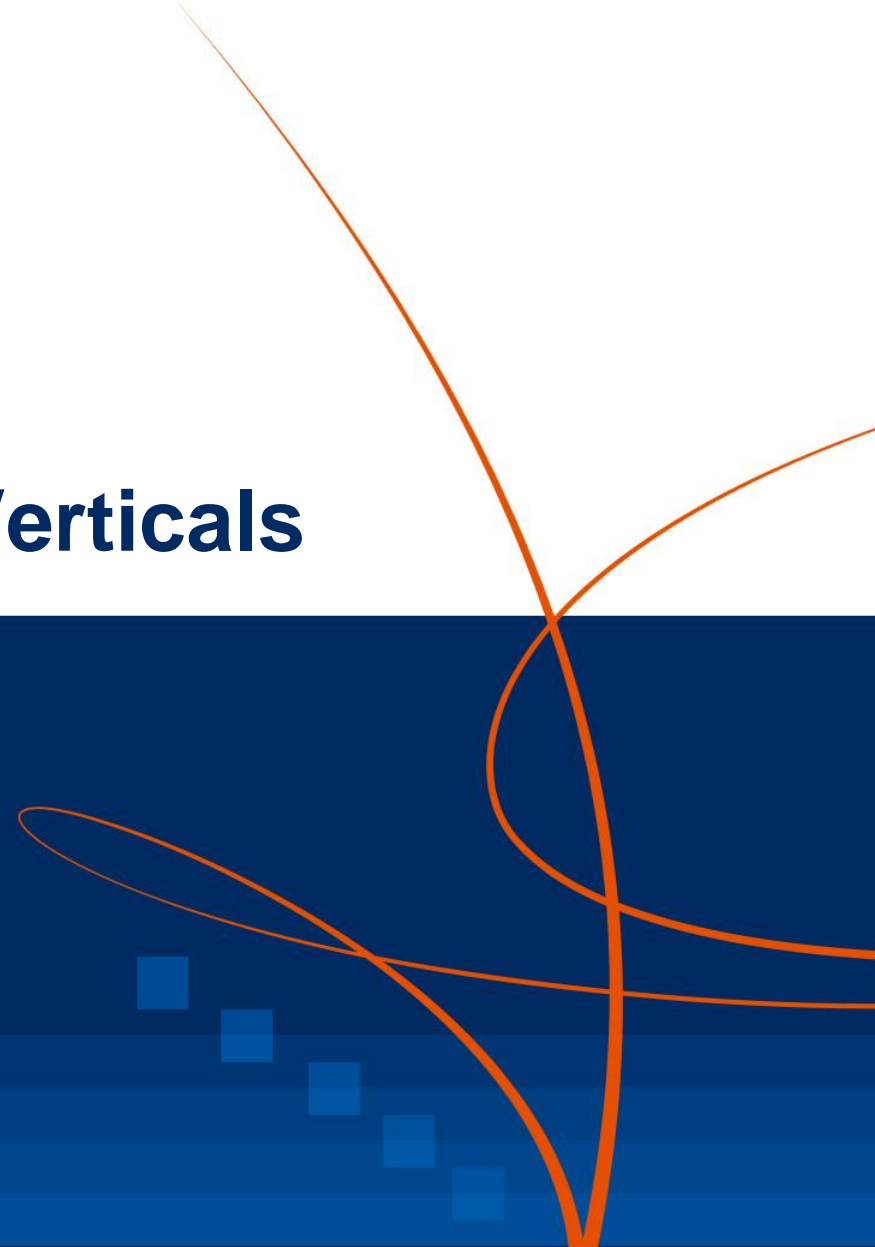


5G Network Slicing for Verticals

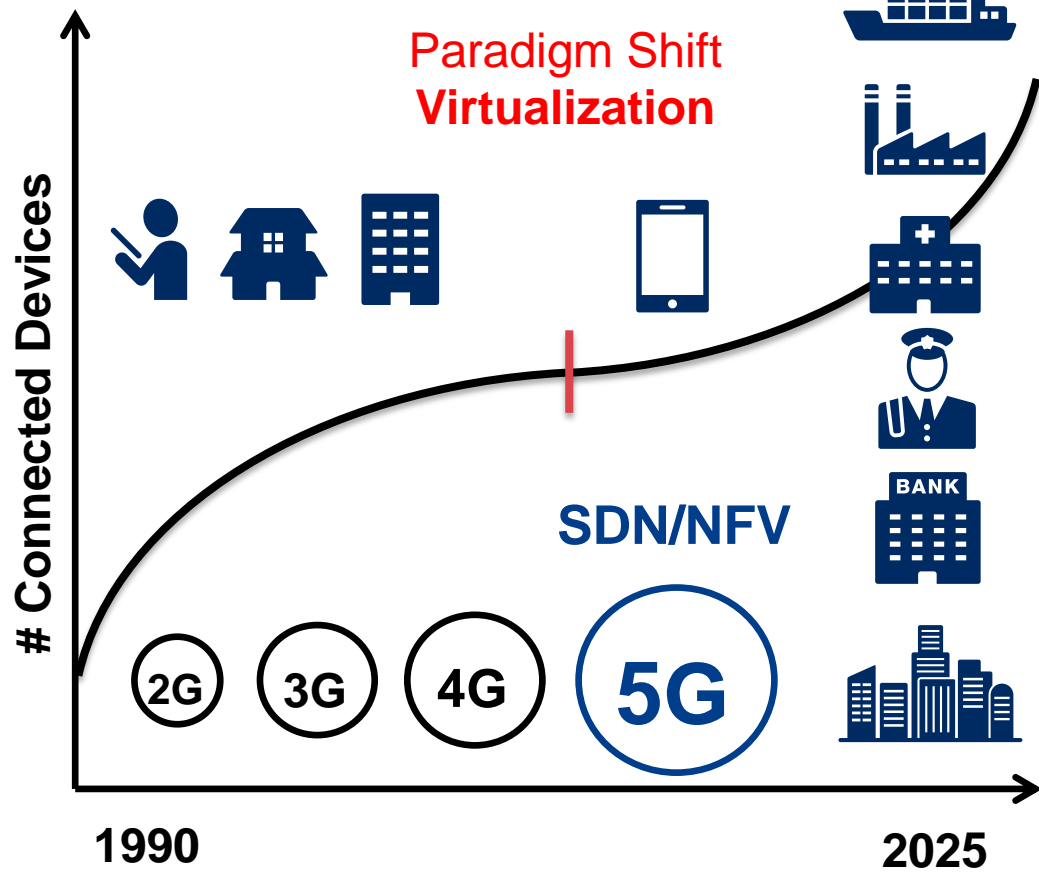
Xavier Costa Perez, PhD
Head of 5G Networks R&D

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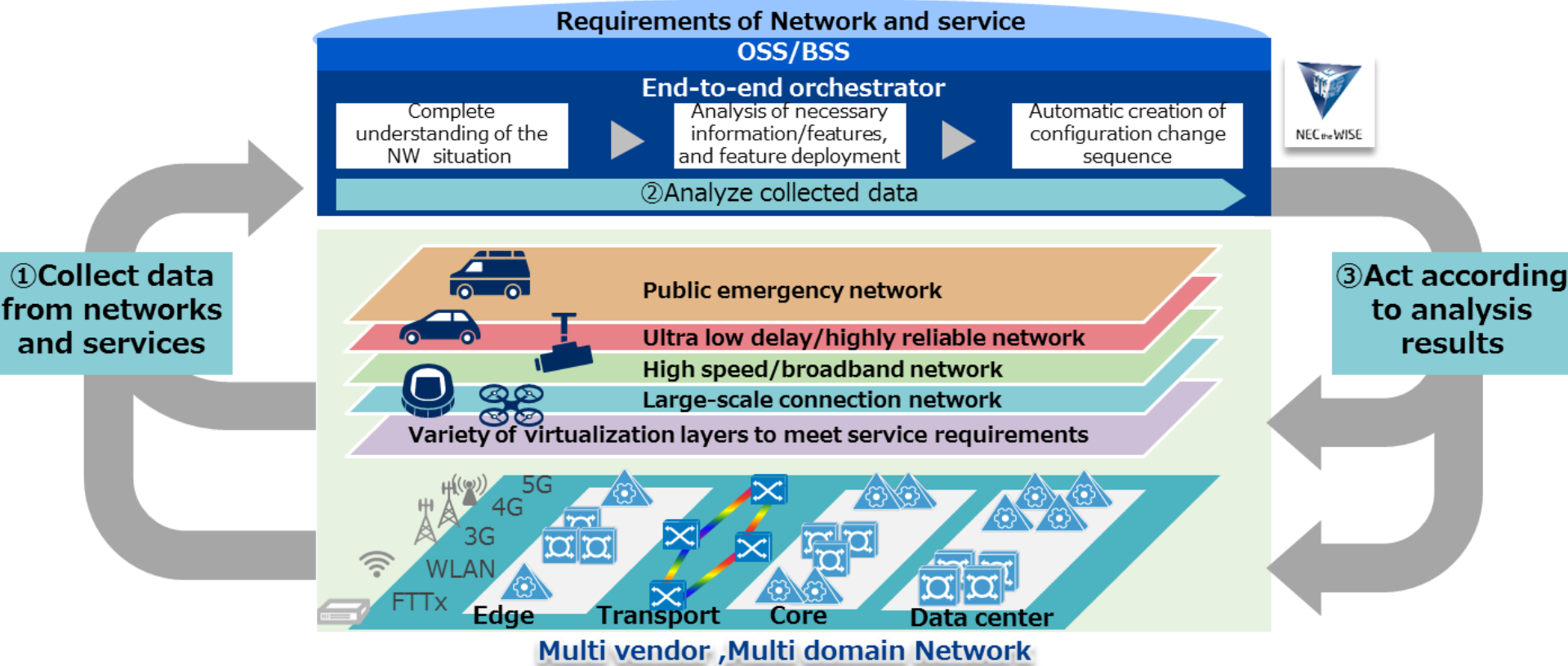
5G for Verticals – Technology Disruption Point

Connected Society



Revenue	<ul style="list-style-type: none"> • New Customer Segments • Tech: <u>Network Slicing</u>
CAPEX/OPEX	<ul style="list-style-type: none"> • Reduce Operational Costs • Tech: <u>SDN/NFV</u>
Automation	<ul style="list-style-type: none"> • Unified E2E Management • Tech: <u>MANO</u>
Novel Services	<ul style="list-style-type: none"> • Fast Service Deployment • Tech: <u>Service/NW Program.</u>
Fixed/Mobile Convergence	<ul style="list-style-type: none"> • Assets Consolidation • Tech: <u>Protocol Convergence</u>
No Vendor Lock-in	<ul style="list-style-type: none"> • Foster Vendor Competition • Tech: <u>Open-Source Platform</u>

5G Network Slicing - Overview



5G Network Slice Broker

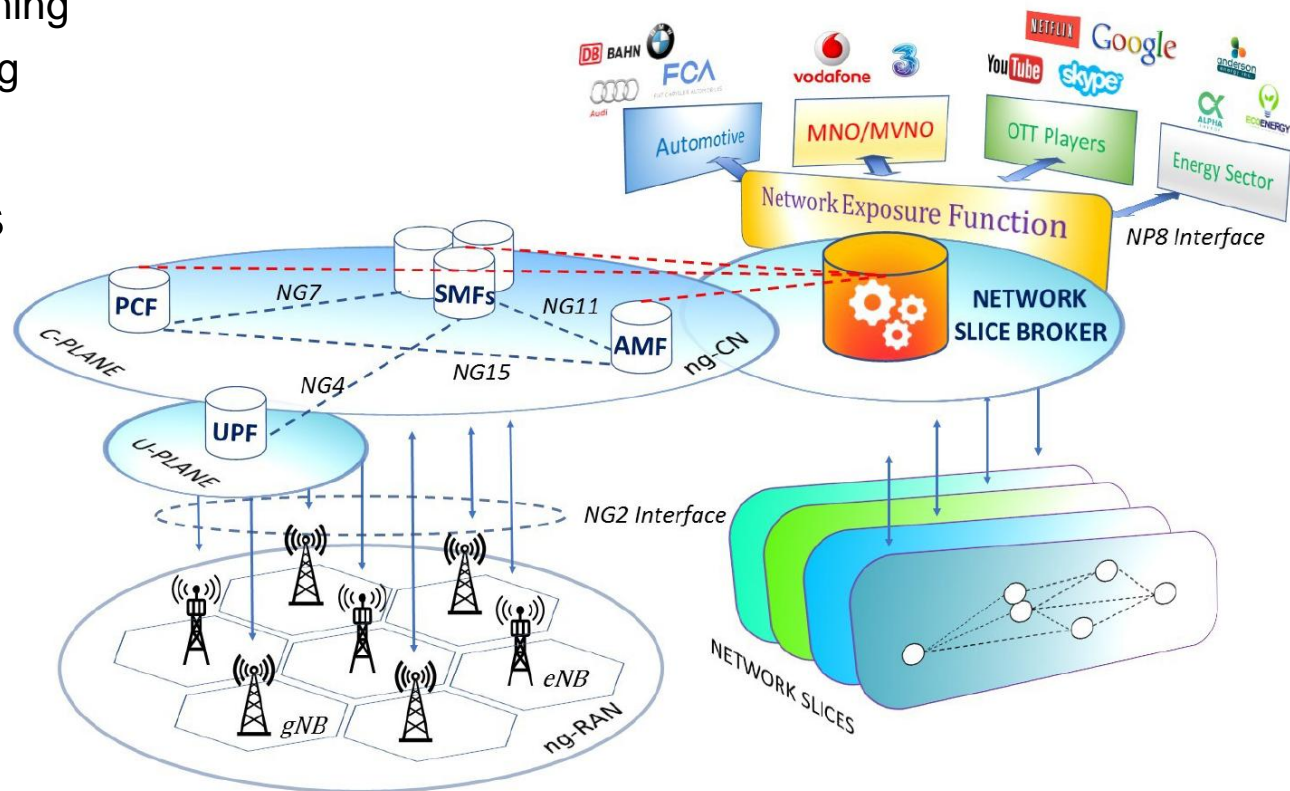
ONETS: On-demand 5G Network Slice Broker

Automated solution to decide in real-time on network slices requests

- Continuous Resource Forecasting and Learning
- Admission Control Decisions
- Network Slices Provisioning
- Per-Slice SLA Monitoring

3GPP Developments

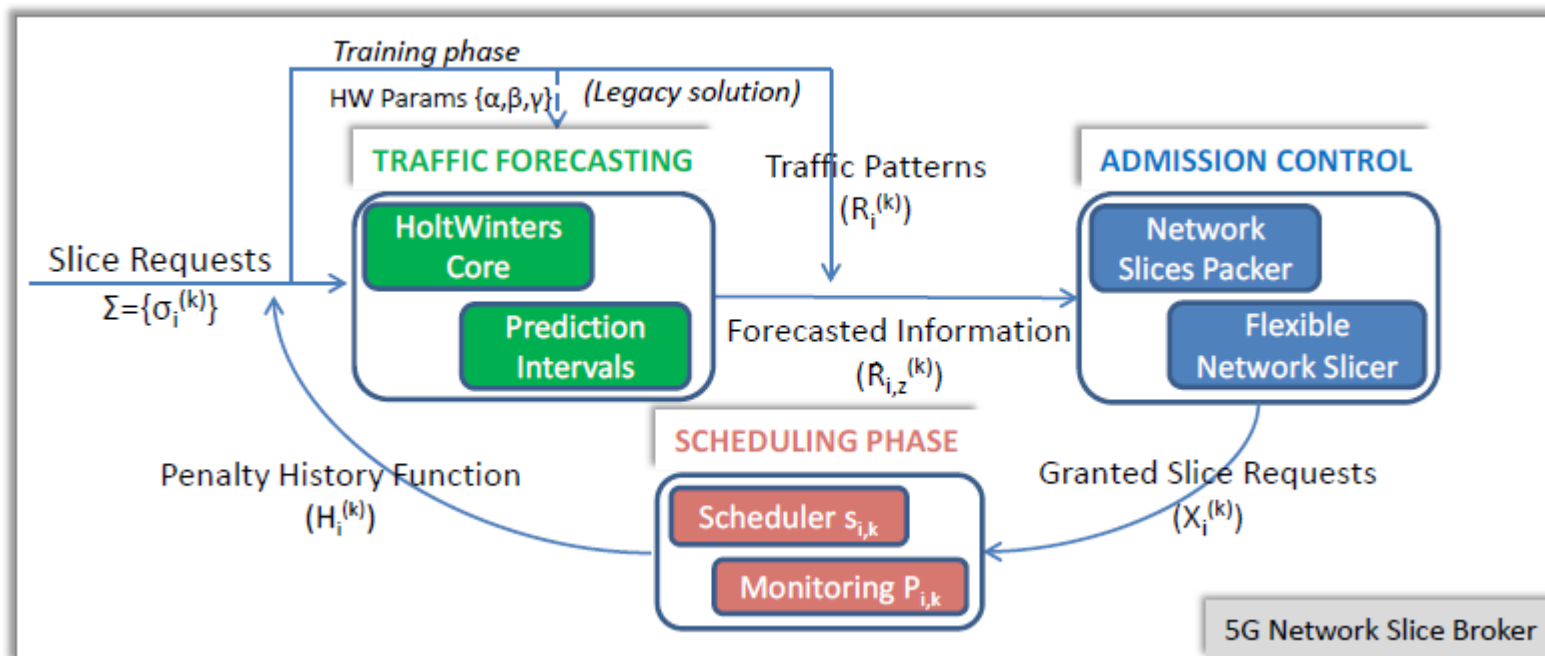
- SA2 Next Gen
- SA5 MANO



ONETS: 5G Network Slice Broker Solution

5G Network Slice Broker features:

- Resource monitoring: e.g., resource blocks, MCSs
- Machine Learning operations for traffic forecasting: online reinf. learning
- Admission Control for network slice requests (based on forecasting info)
- Support for multiple classes of Network Slices SLAs
 - Heterogeneous QoS traffic requirements (data rate, latency, ...)



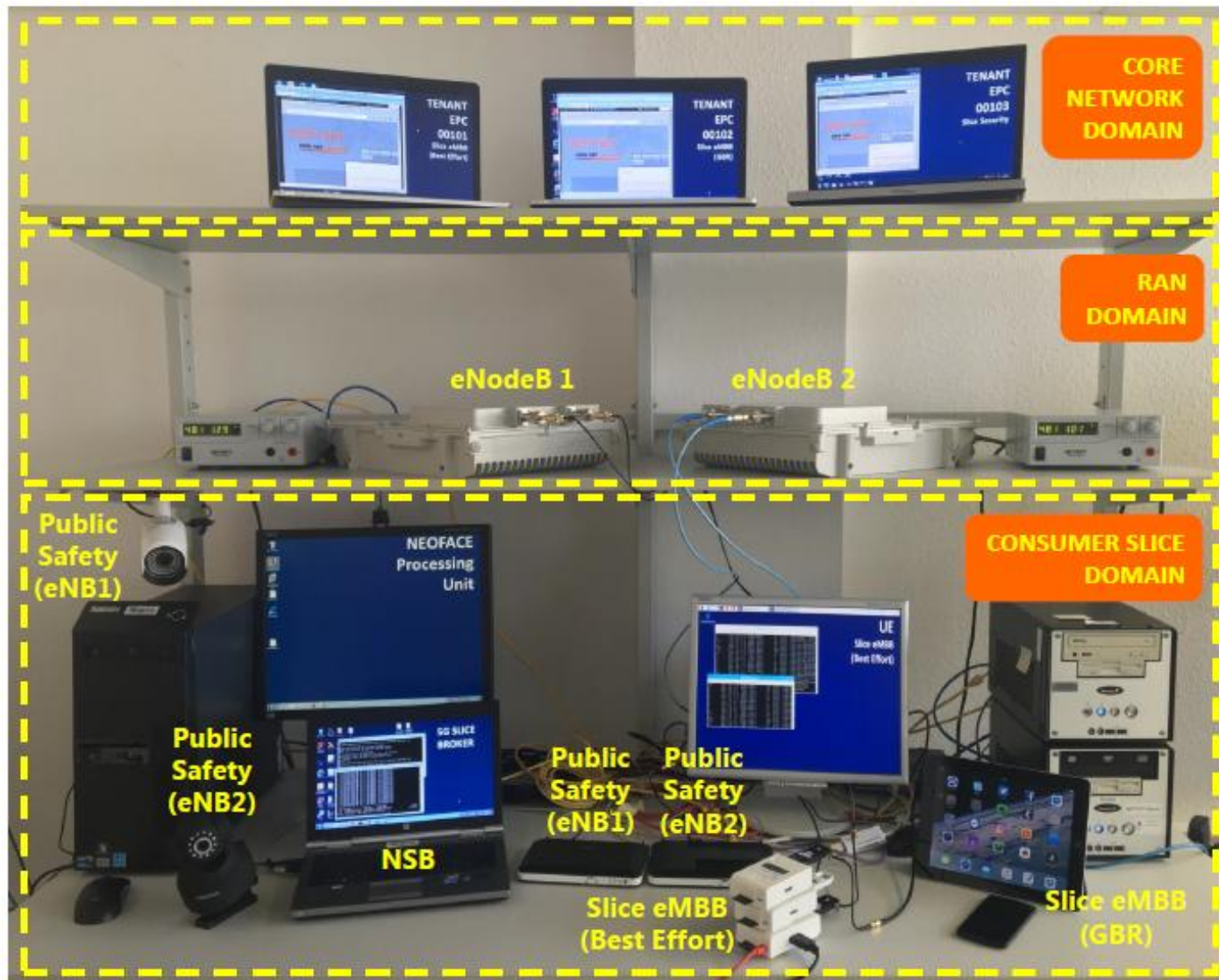
ONETS: 5G Network Slice Broker: Feasibility Study

2 eNBs

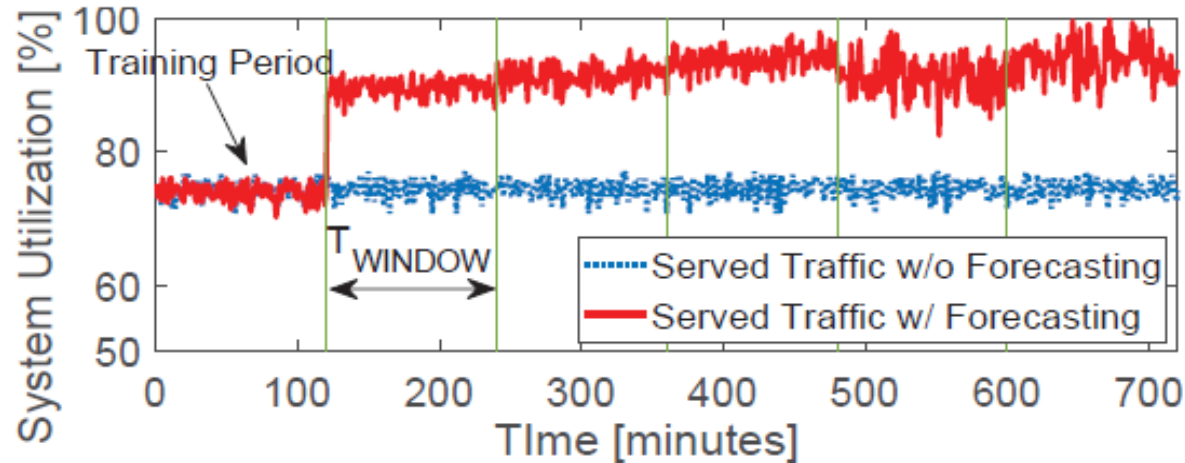
vEPC

3 slices

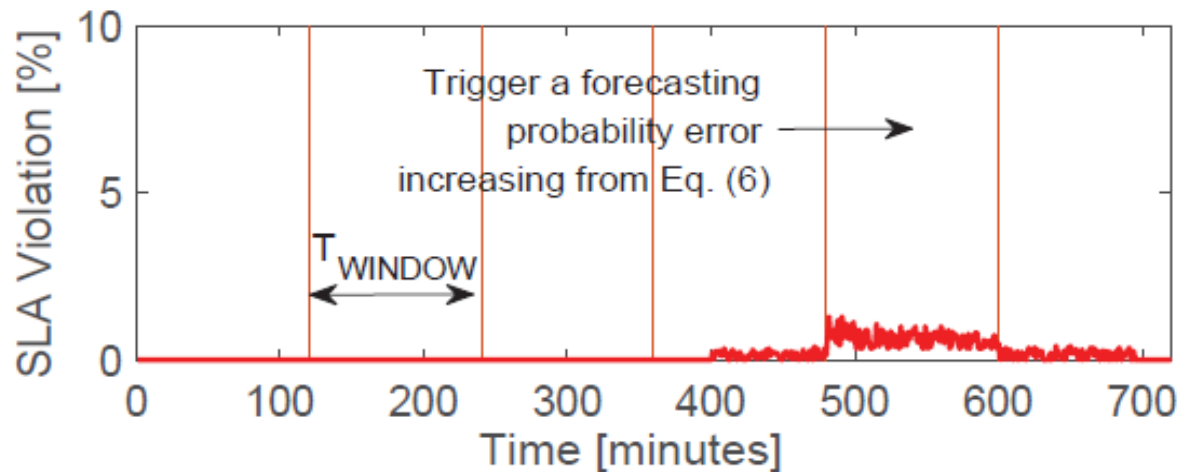
- eMBB – VoIP
- eMBB – FTP
- PS – NeoFace



ONETS: 5G Network Slice Broker: Feasibility Study



(a) System utilization



(b) SLA Violations

5GPPP Call 2 – 5G Transformer Project

5G Mobile Transport Platform for Verticals

- (Federated) Network Slicing
- Vertical MANOs

Operators

- Telefonica
- Orange

Vendors

- NEC
- Ericsson
- Nokia

Verticals

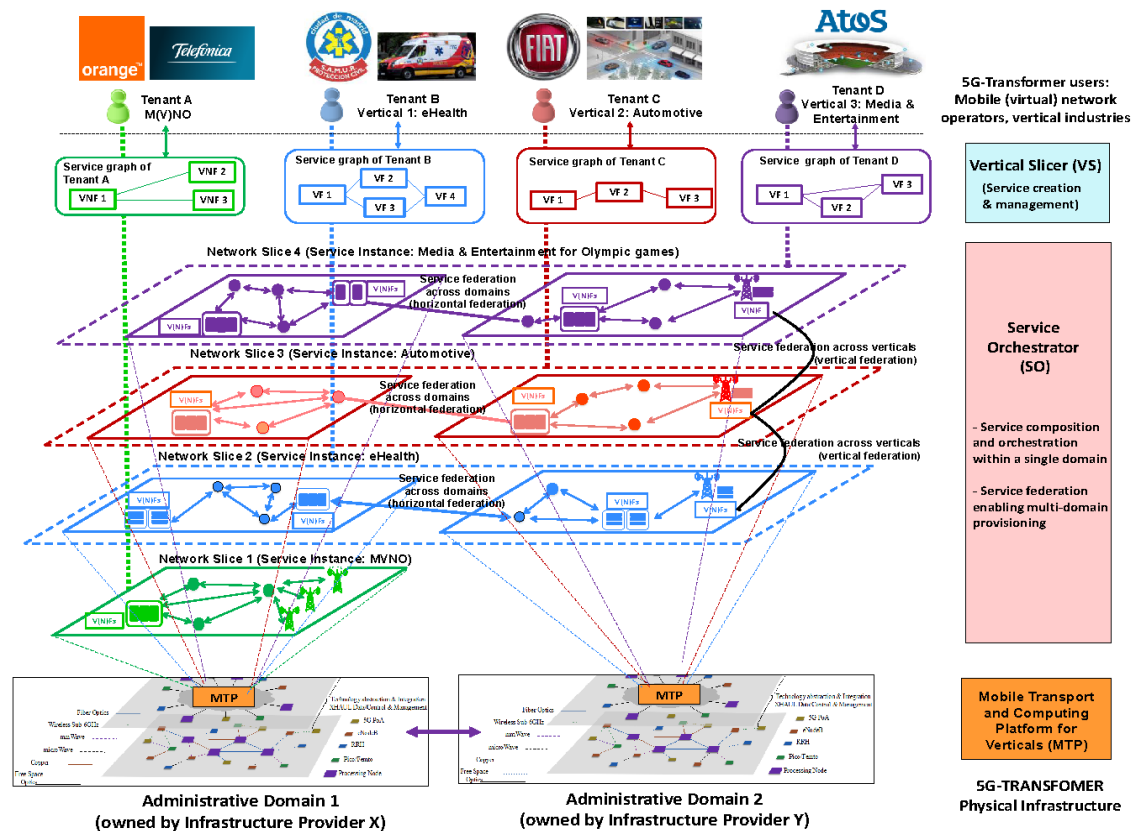
- Automotive: Chrysler Fiat
- E-Health: SAMUR (Emergency)
- Media: ATOS (Olympics)

Dates

- 01/06/2017 - 30/11/2019

Funding

- €8,510,582.50



5G Network Slicing for Verticals

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