

# 5G-ecosystem enabled innovation for future European ports and hub-logistics

Port of Koper Living Lab Use Cases

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5G LOGINNOV

# So why smart, connected ports?

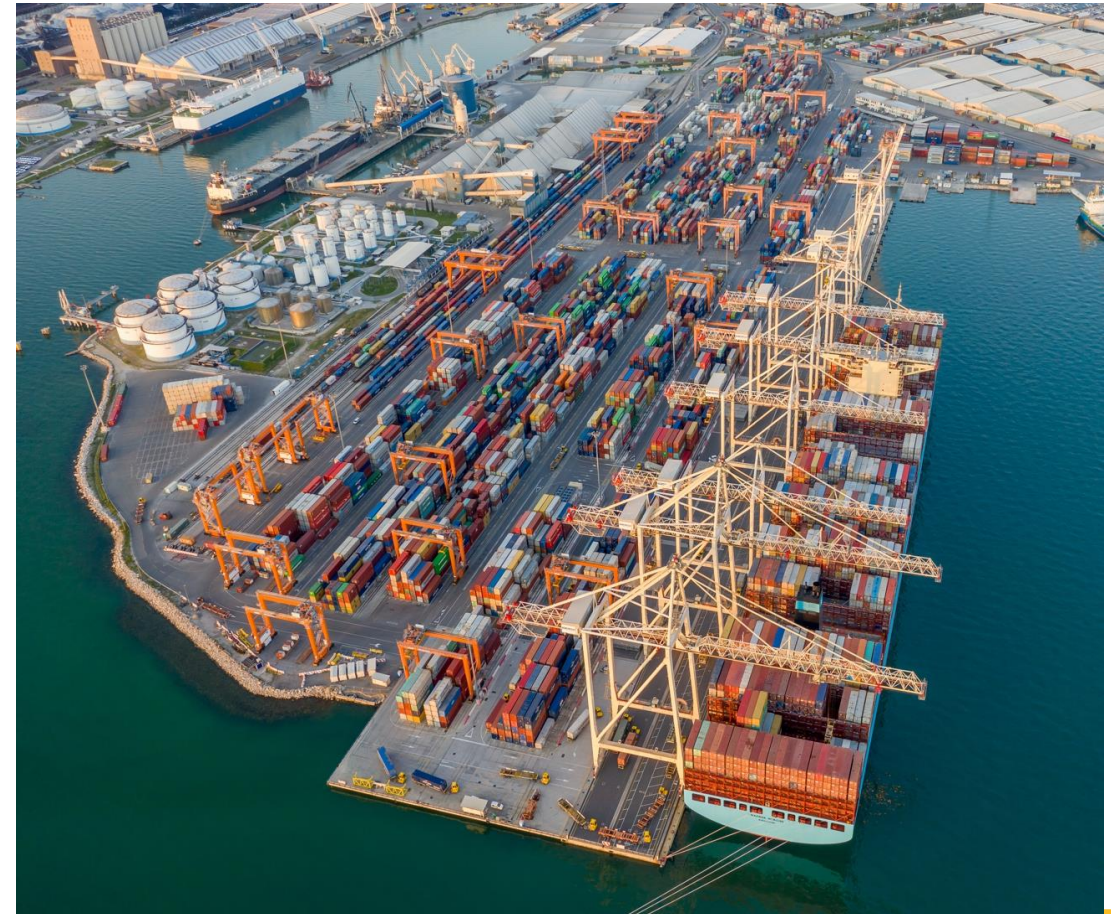


- Automation and innovative technologies (AI, IoT, Big Data, Blockchain,..) to improve performance
- Smart ports are equipped with sensors, cameras, and devices, fully connected to a network infrastructure
- Connectivity allows for remote control of heavy machinery and automated port vehicles
- high-level efficiencies and reduce costs through an ecosystem of smart security, asset management and network infrastructure capabilities
- increase in competitiveness; increased safety for personnel; CO2 savings

# 5G is a technology enabler in smart ports



- 5G will drive innovation and digitalisation
- 5G can improve safety in ports
- 5G will increase the speed, reliability and security of the port authority
- 5G will improve efficiency and optimise logistics supply chain and port operations.
- guaranteed QoS



# 5G System Prerequisite for Koper LL

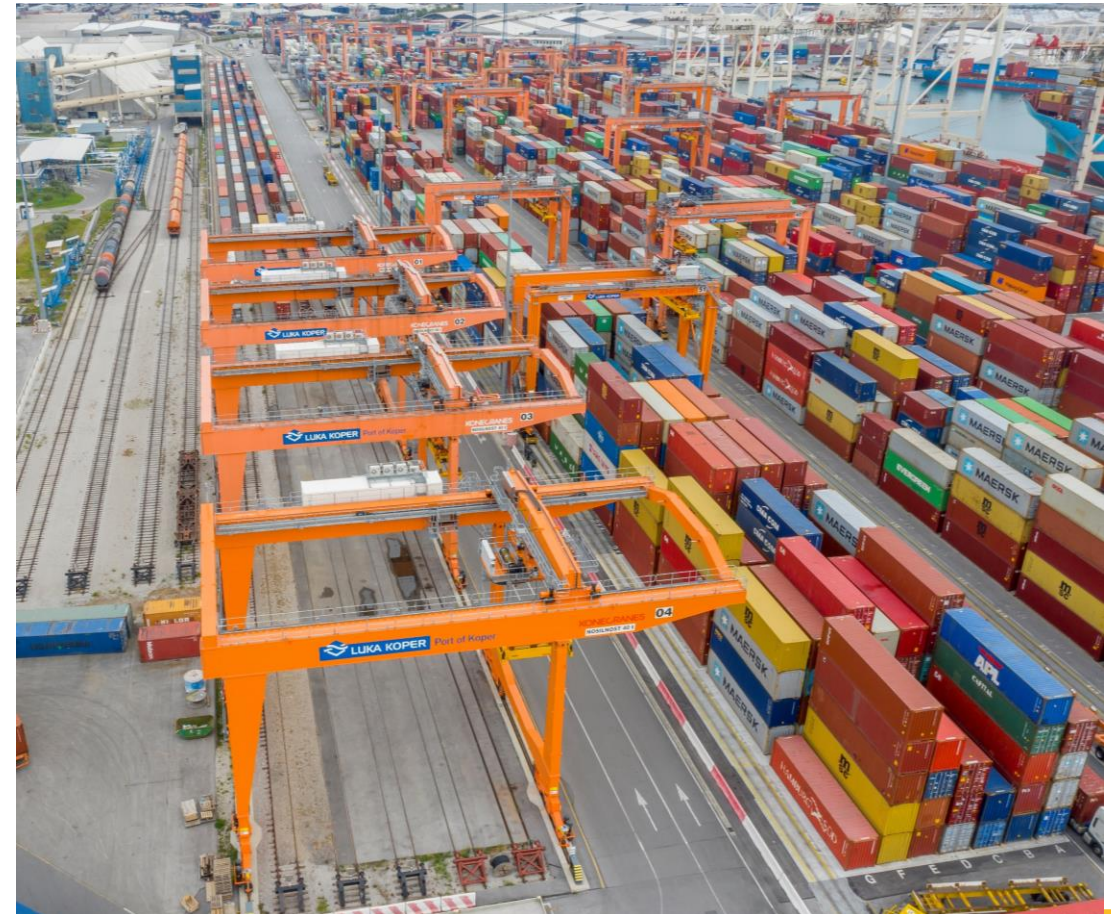


- 5G services supporting Port of Koper (Koper LL) logistics and internal security services operations
- Two 5G platforms: MNO based 5G services (reusing public infrastructure) and Private 5G system (dedicated infrastructure)
- 5G NSA & SA (RAN&CN), NB-IoT/CatM1
- MEC & Edge IaaS capabilities
- Port generated traffic must be terminated (routed) locally to the port ICT systems

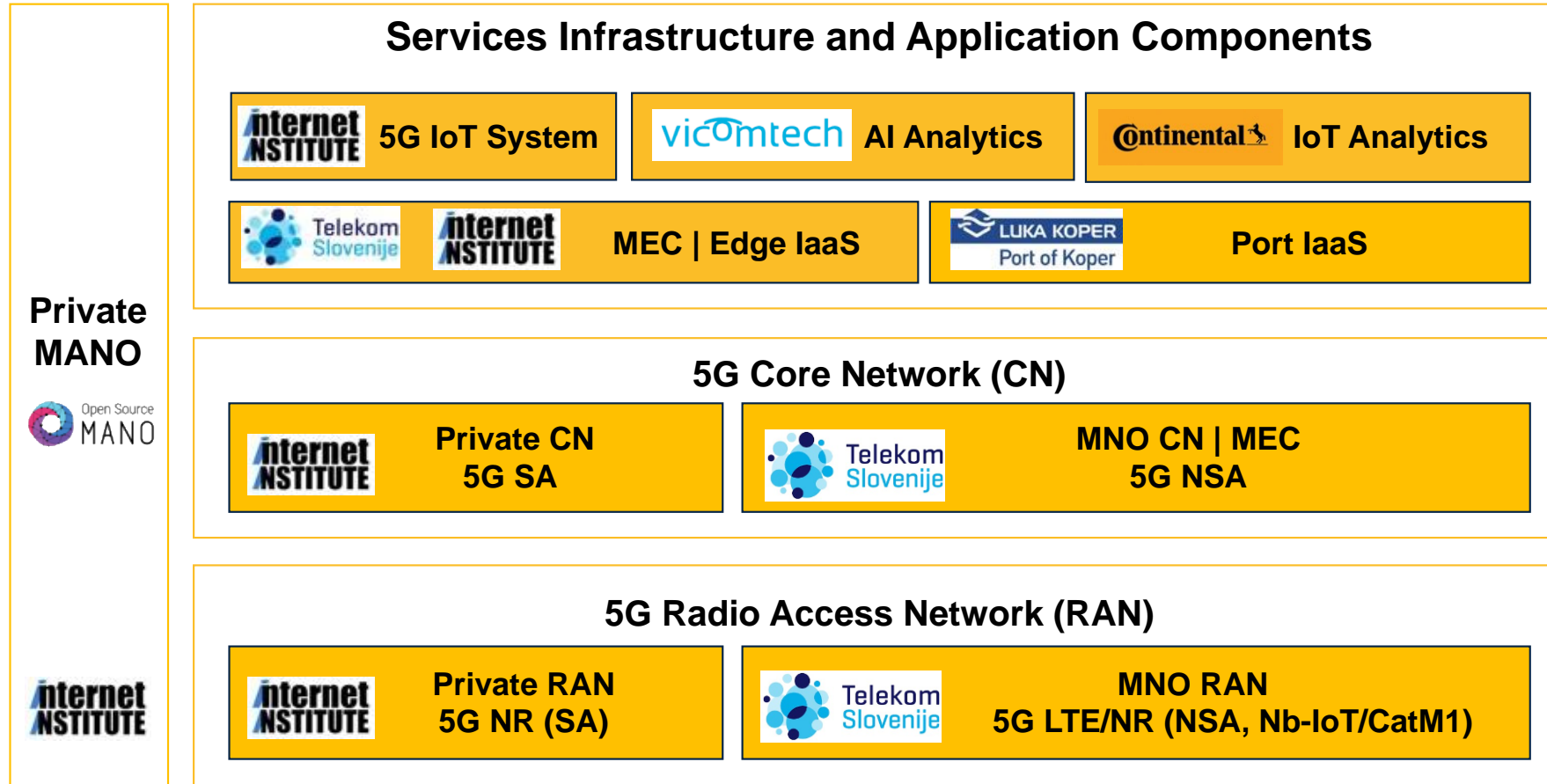
# 5G network requirements in Koper LL



- eMBB, mMTC and uRLLC for different service scenarios
- Local breakout - to keep data within a port network
- Reliability and resilience
- MEC/IaaS
- Network Slicing
- add-on to the existing port infrastructure



# 5G network in Koper Living Lab



# Use cases from telco point of view



- **Use case 1:** 5G-LOGINNOV Management and Network Orchestration platform (MANO)
  - **NFVI, MANO, MEC/IaaS, 5G IoT**
- **Use case 5:** The 5G-LOGINNOV automation for ports: port control, logistics and remote automation
  - **eMBB, uRLLC, mMTC, Network Slicing, MEC, Reliability, 5G IoT**
- **Use case 6:** The 5G-LOGINNOV 5G mission critical communications in ports
  - **eMBB, uRLLC, mMTC, Network Slicing, MEC, Reliability**



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**Thank you!**



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