Port automation - AutoRTG use case

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5GTNF Result Seminar 9.9.2021
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VTT NOKIA KALMAR

Auto RTG use case

Use case

- Controlling Kalmar´s Auto RTG (an automated rubber tyred gantry) crane using reliable and efficient wireless communication networks

Requirements

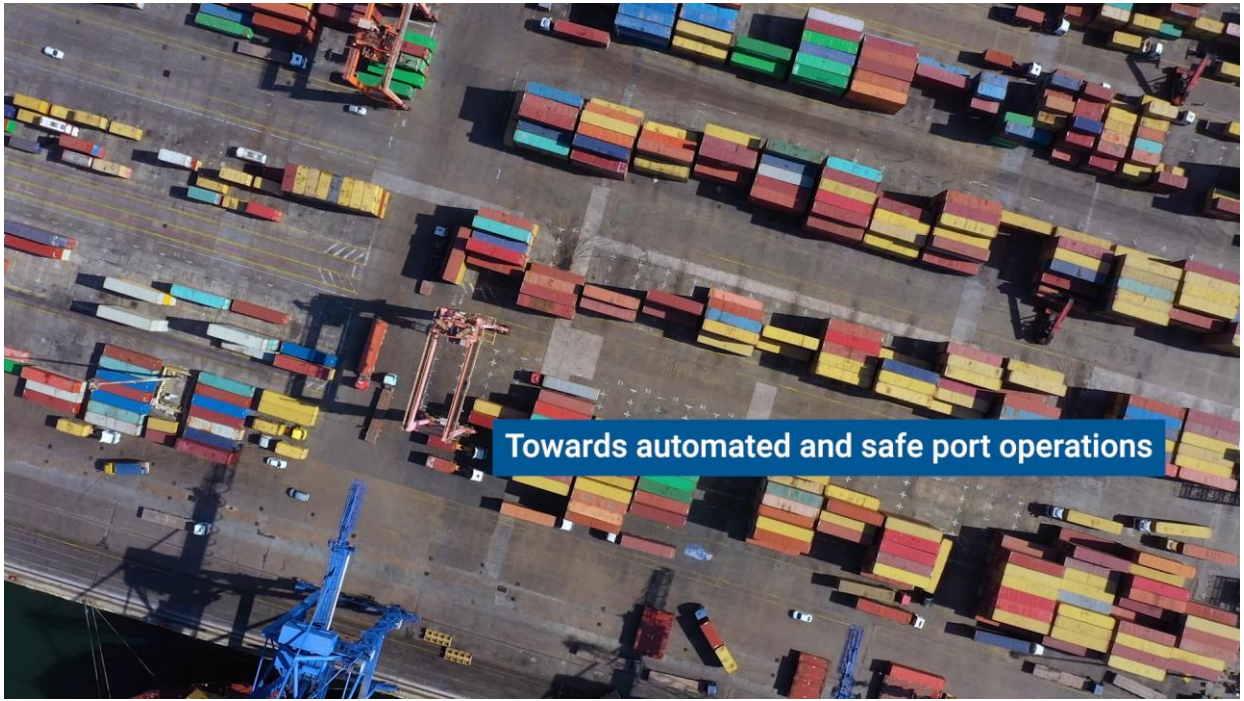
- Control and safety traffic requires low latency and reliable communication
- Video delivery from multiple cameras requires sufficient uplink throughput

Networks

- 5G as a primary wireless technology
- An unlicensed spectrum network to bring additional uplink capacity and deployment flexibility alongside 5G

Video - Towards automated and safe port operations

- https://www.youtube.com/watch?v=PqnKRo4hW-k



Private port area networks

- We used Nokia’s 5G URLLC technology for control and safety traffic between Auto RTG and RC desk
- We built a test system for reliable and low latency video streaming from multiple cameras in the moving crane using two Wi-Fi 6 networks and multipath TCP (MPTCP)
- The system demonstrated at Kalmar’s test yard in Tampere
  - It is possible to reach very low latencies (even 1 ms) using 5G URLLC
  - Unlicensed spectrum networks with MPTCP bring additional capacity to uplink video streaming

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Funded by BUSINESS FINLAND