



Industrial Automation

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Erik Guttman, Chairman of 3GPP SA
Samsung Electronics

- 📶 Industrial Automation networking is a mature environment with well defined requirements.
 - Though wireless solutions exist, these are not standardized. The dominant communication technology is wired.
- 📶 Challenges in this environment are different than past wireless opportunities:
 - Lower latency
 - Greater need for reliability
 - Higher precision positioning
 - Greater need for reporting service delivery failure
 - Different operating model (non-public networks)
 - Different security domain
- 📶 Terminology and motivation required time to understand & harmonize with 3GPP.

Industrial Automation: from a 3GPP perspective

Release 15

TS 22.261
Service
Requirements
for the 5G
System

TS 22.104
Service
Requirements
for cyber-
Physical
Control

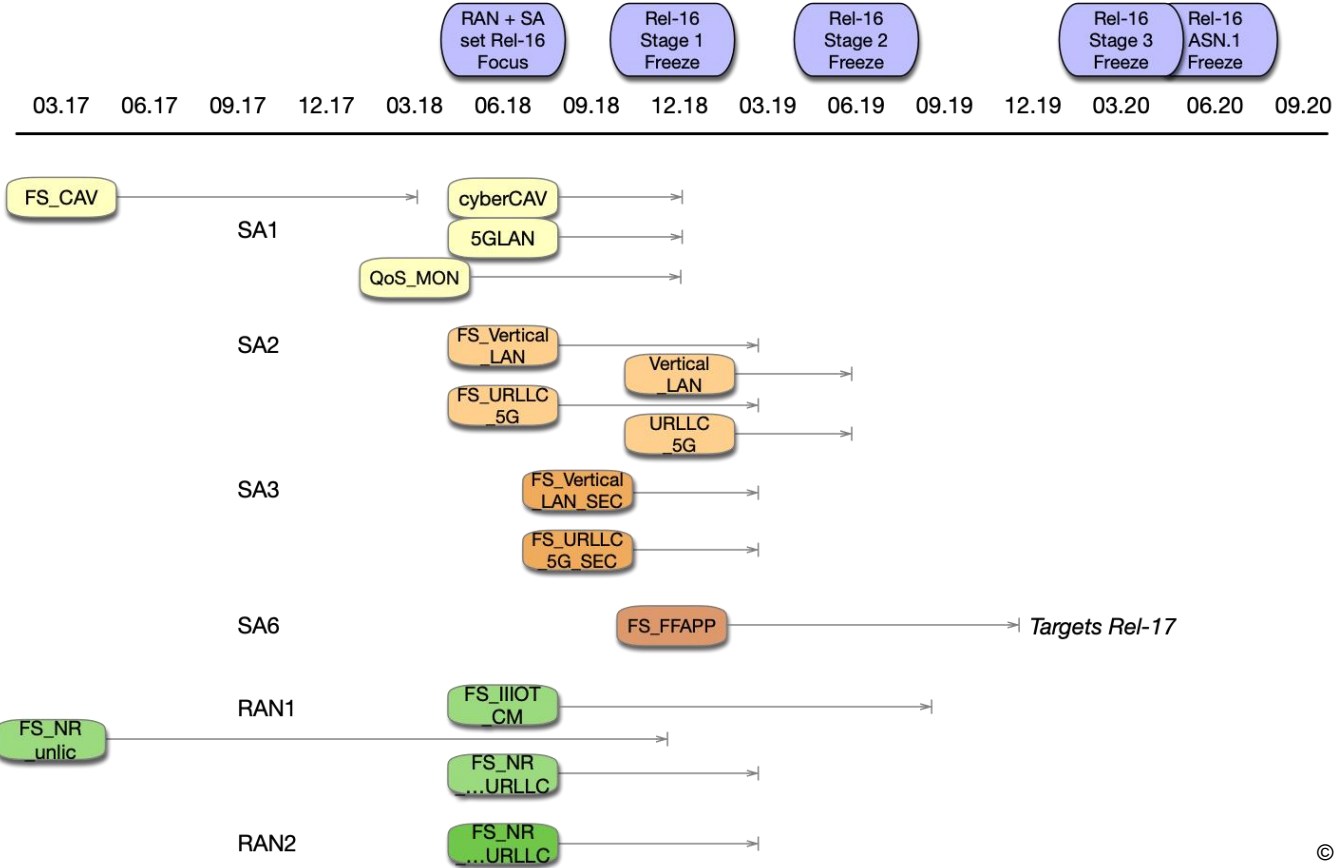
- Low Latency Communication & High reliability KPIs for automation
- Annexes on vertical industries support

Release 16

- QoS Monitoring
- Ethernet Transport Services
- Non-Public Networks
- 5G LAN services
- General positioning services
- Security Requirements

- Performance Requirements
- Ethernet Applications
- Specific positioning aspects
- Clock Synchronization

Program management view



Observations

- 📶 URLLC service is a key goal of the 5G system.
 - In Rel-15, this was a *general* idea with some KPIs..
 - Industrial Automation + diverse ‘Verticals’ use cases added specific targets.
 - 3GPP benefited from the clarity of IA requirements & IA’s maturity.
- 📶 The opportunity was embraced by operators & vendors.
 - This led to *prioritization, significant work* and *focus*.
- 📶 To support cyber-physical verticals *several* capabilities are needed, beyond performance KPIs.
 - Most capabilities were agreed as *general* enablers.
 - The few that weren’t created new specs, etc.
- 📶 More vertical experts are needed in follow up WGs (SA2, SA3, SA6, RAN2, CT1, etc.)



Thank you!



Erik Guttman

Chairman of 3GPP SA

Erik.Guttman@samsung.com

+49 157 8458 9355

www.3gpp.org