

Requirements for Reliable Wireless Industrial Services

draft-ietf-detnet-raw-industrial-req-00

IETF 119 – DetNet WG

Rute C. Sofia
Paulo Mendes
Carlos J. Bernardos (Ed.)
Eve Schooler

March 2024



Aim and scope

- Provide an overview of requirements of DetNet wireless in the context of industrial environments
- Identify a set of requirements
- Complements RFC 9450 by going into additional details for this specific use case family
- Documents both existing and future wireless industrial services
 - Documenting several existing applications using IEEE 802.11 and their requirements as found in the related work
 - Analyzing additional (future) services and identifying some potential requirements in the context of wireless DetNet

Current Table of Contents

1.	Introduction	2
2.	Conventions used in this document	4
3.	Definitions	4
4.	Wireless Industrial Services Today	4
4.1.	Equipment and Process Control Services	6
4.2.	Quality Control Services	9
4.3.	Factory Resource Management Services	10
4.4.	Display Services	11
4.5.	Human Safety Services	12
4.6.	Mobile Robotics Services	12
4.7.	Power Grid Control	13
4.8.	Wireless Avionics Intra-communication	14
5.	Additional Reliable Wireless Industrial Services	15
5.1.	AR/VR Services within Flexible Factories	15
5.1.1.	Description	15
5.1.2.	Wireless Integration Recommendations	16
5.1.3.	Requirements Considerations	16
5.2.	Decentralised Shop-floor Communication Services	17
5.2.1.	Description	17
5.2.2.	Wireless Integration Recommendations	18
5.2.3.	Requirements Considerations	18
5.3.	Autonomous Airborne Services	19
5.3.1.	Wireless Integration Recommendations	19
5.3.2.	Requirements Considerations	20
6.	Security Considerations	21
7.	IANA Considerations	21
8.	Acknowledgments	21
9.	References	21



Summary and next steps

- Re-submitted as draft-ietf-detnet-raw-* in Jan. 2024
 - As agreed in IETF 118
 - Eve and Carlos joined the co-authors team
- Next steps
 - Asked for feedback to the WG: is the content OK? Should we update the current structure? Any relevant wireless industrial service missing?
 - Authors think the structure might need to be changed, to make sections 4 and 5 a bit more consistent
 - Please share your comments on the ML!

Acknowledgements

- Carlos J. Bernardos is partially funded by the 6G-DATADRIVEN project



Financiado por
la Unión Europea
NextGenerationEU



Plan de Recuperación,
Transformación y Resiliencia



GOBIERNO
DE ESPAÑA

MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE TELECOMUNICACIONES
E INFRAESTRUCTURAS DIGITALES