



Can societies depend on 6G?

TCCA 6G position
Tero Pesonen

SWS-240009

3GPP Stage 1 Workshop on IMT2030 Use Cases

Rotterdam, NL
08 - 10 May 2024



TCCA Mission

Provide a platform for the exchange of information and experience between members

Drive the evolution of critical communications worldwide

Promote the critical communications market and solutions to a global audience.





About us



We support open and standardised mobile critical communications technologies and complementary applications.



A GLOBAL INITIATIVE

3GPP Market Representation Partner.
Catalysing competitive multivendor markets worldwide through open standards.



Our members include users, operators, industry and other stakeholders globally all sharing knowledge and experience.



Collaborative working across the critical communications ecosystem to develop and drive the most effective solutions for all.

Critical communications for all professional users



What is critical communications?



Critical communications for all professional users



Core Critical Communications requirements

For

Public Safety – police, fire & rescue, ambulance, customs, military ...

Transport – railways, subways, busses, highways, airports, ports ...

Critical Infrastructure – power, heat, water utilities ...

Resource industries – oil & gas, mining ...

Critical communications for all professional users



Critical Communications requirements

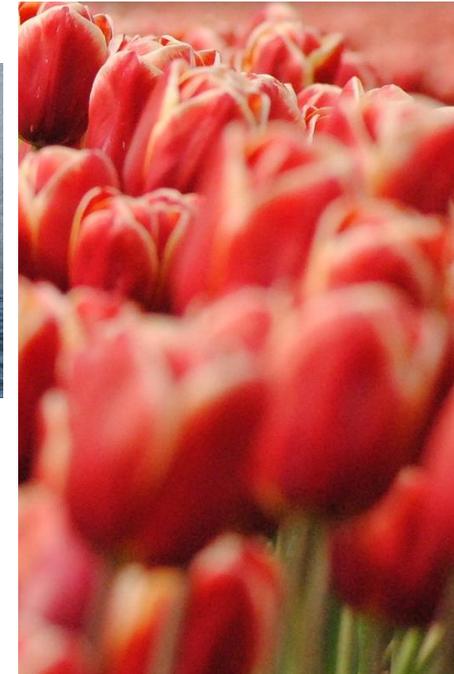
COVERAGE

AVAILABILITY

RESILIENCE

PERFORMANCE

SCALABILITY



24/7/365



**Instant
service**

FUNCTIONAL SUITABILITY

Critical communications for all professional users



Critical Communications requirements

COVERAGE

AVAILABILITY

RESILIENCE

PERFORMANCE

SCALABILITY



CONNECTION IS THE LIFELINE



24/7/365



**Instant
service**

FUNCTIONAL SUITABILITY

Critical communications for all professional users



Partners supporting the 6G position include:



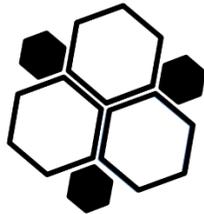
Radio Communication Expert Group

PSRG

Public Safety Radio Communication Group

eena

EUROPEAN EMERGENCY NUMBER ASSOCIATION



The PSBN Innovation Alliance **(PIA)**



Safe-Net Forum
공공안전통신망 포럼



450

alliance.org

Critical communications for all professional users



6G for critical communications Background

3GPP has specified capabilities of significant relevance to mission critical communications in 4G and 5G:

- **4G leveraged mobile broadband solutions to address mission critical use cases**
 - Leap in performance with respect to former generations and previous narrowband technologies
 - Single technology platform to support a wide array of use cases
- **5G introduced support for verticals, including governments, critical industries & enterprises beyond mobile broadband**
 - New coverage options
 - New deployment and architecture options
 - New service capabilities
 - Enhanced security architecture and protocols

In parallel ...

Critical communications for all professional users



6G for critical communications Background

**societies and the economy have become
dependent on mobile communications
(safety, commerce, government, etc.)**

Critical communications for all professional users



6G for critical communications Principles

To maximize the relevance of 3GPP systems for critical communications:

- 6G should introduce new capabilities while leveraging the existing ecosystem for critical communications, including seamless integration with 4G and 5G and backwards compatibility at service level
- 6G should enhance the level of **TRUST** users have with the system, for mission- and safety-critical operations

The 6G standard should simplify the introduction of solutions for critical communications by ensuring that:

- 6G provides a common suite of capabilities applicable across all or most critical communication verticals
- 6G maximizes commonalities between critical communications verticals and other verticals benefiting economies of scale and available markets

Critical communications for all professional users



6G for critical communications

Trust theme – Main components

Guaranteed service

- End-to-end service guarantees
- Efficient ways to track and observe service performance
- Predictable service performance evolution allowing corrective automatic actions by operators
- Enhanced handling and differentiation of MC traffic (e.g., using AI/ML tools)

Deployment and coverage

- Efficient solutions for providing coverage everywhere, including
 - Ultra-rural areas
 - Challenging propagation scenarios
- Simplified deployment and operation
- Opportunistic ad-hoc solutions
- Interoperability within and across networks, including mission critical roaming scenarios

Resilience and robustness

- Standards support for reducing, mitigating, and recovering from failures
- Architecture and deployment options for efficient redundancy
- Standards ready for leveraging secure cloud-native tools for improved resilience
- Increased robustness against GNSS service degradation

Security

- Detection and protection against electromagnetic threats
- Standards and solutions ready for quantum safe communications



Questions?



Tero Pesonen

TCCA Vice Chair & Director, CCBG chair

E-mail tero.pesonen@tcca.info

Mobile +358 50 544 7347



fi.linkedin.com/in/teropesonen

Critical communications for all professional users

TCCA CCBG

<https://tcca.info/broadband/critical-communications-broadband-group/>

Find TCCA also on



LinkedIn

[www.linkedin.com/company/tcca-critical-](https://www.linkedin.com/company/tcca-critical-communications/)



communications/

Facebook www.facebook.com/tccacritcomms



Twitter [@TCCAcritcomms](https://twitter.com/TCCAcritcomms)



YouTube www.youtube.com/user/tandcca