



2022
Annual **INCOSE**
international workshop
HYBRID EVENT
Torrance, CA, USA
Jan 29 - Feb 1, 2022

Telecommunications

www.incose.org/IW2022

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CHAIR

John Risson (johnrisson@anacom.com.au)

MEMBERS

9 active, 22 in WG community

CO-CHAIRS

Susan Ronning (s.ronning@adcomm911.com)

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INCOSE CONNECT ADDRESS



<https://connect.incose.org/WorkingGroups/Telecommunications/SitePages/Home.aspx>

INCOSE WEB PAGE



<https://www.incose.org/incose-member-resources/working-groups/Application/telecommunication>

Charter Summary



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WG PURPOSE/MISSION

Telecommunications underpins communities, businesses and governments. Telecommunications stakeholders need ease of use, performance, security and reliability. Telecommunications systems are complex, yet pressures exist for more responsive capability and capacity enhancements within challenging cost constraints. The INCOSE Telecommunications Working Group (WG) proposes that systems engineering is under-represented in this application area and has a major part to play in the design, development, maintenance and operation of telecommunications systems.

The WG aims to enable telecommunications systems stakeholders and providers to better support their users:

- Critical and emergency services personnel;
- Federal and municipal governments, utilities and transportation agencies;
- Enterprise and consumer users of commercial telecommunications services; and
- The broader public.

The WG intends to be:

- A forum for telecommunications practitioners to discuss problems and challenges;
- A forum for systems engineers who are interested in telecommunications applications;
- INCOSE's lead forum to advance the application of systems engineering for telecommunications.

The purpose of the WG is to improve delivery of telecommunications solutions by enhancing the systems engineering body of knowledge for telecommunications applications.

The WG will lead this effort within INCOSE, in liaison with external telecommunications experts, standardization bodies, organizations and communities.

WG GOAL(S)

To improve delivery of telecommunications services and solutions by demonstrating practical application of systems engineering best practices.

To enhance the systems engineering body of knowledge for telecommunications applications.

To develop a community of telecommunications specialists within INCOSE through various efforts including, but not limited to:

- Developing papers to be presented during International Symposia and Workshops;
- Establishing project specific working relations with telecommunications experts, standardization bodies, organizations and communities;
- Enhancing the INCOSE Systems Engineering Book of Knowledge (SEBoK) and the INCOSE Systems Engineering Handbook to show

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how systems engineering improves delivery of telecommunications services and solutions;

- Initializing project specific working relationships with other INCOSE WGs.

To promote, encourage, supervise and perform research where it improves practice of systems engineering for telecommunications.

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WG SCOPE

The Telecommunications WG addresses processes, methods and tools; organizational aspects; business and information requirements; as well as human aspects (competencies and user experience) related to the engineering of telecommunications systems. This includes at least needs gathering, requirements specification, design, maintenance, growth, evolution and operation.

The Telecom WG utilizes improvements from other working group with:

- INCOSE Working Groups and initiatives that provide enabling methods ("Agile Systems and Systems Engineering", "Architecture", "Competency", "Lean Systems Engineering", "Model-Based Conceptual Design", "Model-Based Systems Engineering", "Project Management - Systems Engineering Integration", "Requirements", "Resilient Systems", "Systems and Software Interface", "Systems of Systems Engineering", and "Systems Security Engineering");

The Telecom WG enables other INCOSE working groups, i.e.:

- "Automotive", "Critical Infrastructure Protection and Recovery", "Transportation" and "Space Systems", etc.; and
- external telecommunications experts and organizations where appropriate.

The WG supports other professional organizations, private and public government agencies, and academia to widen viewpoints and representation within the WG.

OUTCOMES (PRODUCTS/SERVICES)

Based on the WG goals above, the WG aims to:

- Create and maintain a knowledge base, collecting lessons learned from the members' experience in their industries/ domains/ applications. The analysis of the lessons learned will facilitate the identification of common, recurring issues and the formulation of best practices from a system-view standpoint all resulting in an update to SEBoK and/or the INCOSE SE Handbook.
- Take the INCOSE SE Handbook latest version as a baseline and look to further integrate the telecommunications aspects into the next version, while liaising with other relevant WG's, e.g., requirements, ontologies, MBSE, MBCD, to establish end-to-end life cycle.
- Regularly publish telecommunications systems engineering practice papers at the INCOSE Symposium, INCOSE INSIGHT, and/or INCOSE SE Journal.
- Produce formal INCOSE products in the form of Guide(s) or similar documents for the benefit of INCOSE members and the larger community after having each plan approved according to INCOSE TEC-107.
- Produce one special issue of Insight (SE magazine) about Telecommunications.
- Produce or augment a generic model of telecommunications, describing the architecture and its interfaces to other critical

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infrastructure.

- Share information at trade shows and findings within telecommunications trade journals.

IW Outcomes



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IW Outcomes

To share the project we've been working towards over the last year, primarily the "Communications Network Criticality Framework (CNCF)" and communicate with other working groups, esp. CIPR: Critical Infrastructure Protection and Recovery, to ensure we

PLANNED ACTIVITIES AFTER IW

- 1. We will setup our Yammer space and hopefully start to use it
- 2. We post up a copy of our presentations and link them to our INCOSE landing page to people can actually find us

PLANNED WORK PRODUCTS AFTER IW

- 1. Develop a Telecom/ ICT Primer to clarify what are Communications Networks and how they interface and affect people and things
- 2. Expand the Communications Network Criticality Framework (CNCF) that we've already started; to provide examples
- 3. Work with modelers to turn the "single Comms block" that is prevalent within model diagrams into an expanded "set of Comms blocks" that can be better