

1 PURPOSE

The Infrastructure Working Group Charter is to bring together designers, builders, and operators of economic and physical infrastructure systems to advance the application of systems engineering.

This Working Group aligns with the strategic aim of INCOSE to advance the application of systems engineering outside its core aerospace and defense domain.

2 GOAL

- Lead the international outreach to public and private organizations involved in infrastructure delivery and operations.
- Develop products to capture systems engineering best practices tailored to the infrastructure domain.
- Share best practices within the Working Group and make a footprint to the Infrastructure domain at large by developing products.

Specific initiatives include:

- Webinars – 3 scheduled for 2019 in collaboration with other Working Groups such as Automotive and Transportation Working Groups – Short Term
- Products – An MBSE application to an infrastructure project (currently under development) – Short Term
- Products – Continue the development of tri-fold series – Short term
- Products – A Guide to the Application of Systems Engineering in Large Infrastructure Projects (Version 2.0 under development) – Mid Term
- Collaboration with an International Organization (NETLPISE) to promote the INCOSE brand and joint products development – Mid Term
- Develop a metamodel for infrastructure – Long Term
- Bring Construction Companies into INCOSE – Long Term

3 SCOPE

This Working Group will address mostly physical infrastructure issues with a concentration on the construction of infrastructure facilities in the energy, transportation and, and communications domains. This includes public and commercial facilities and networks necessary for the economic and physical well being of society (e.g., power generation and distribution, waterways and ports, industrial plants, telecommunication networks, transportation facilities and systems, and mining). The Working Group will leverage international systems engineering best practices and produce documents to assist developers and builders of infrastructure systems. This Working Group will collaborate with other domain specific Working Groups such as the Transport Working Group, the Power and Energy Systems Working Group, the In-Service Working Group, and the Resilience Systems Working Group.

4 SKILLS AND EXPERTISE REQUIRED

Engineering degree, systems engineering experience, and experience with the construction of infrastructure facilities. Seeking members from the Construction Industry (requires assistance from INCOSE to reach out to Large Construction Companies)

5 OUTCOMES (PRODUCTS/SERVICES)

Product – Modeling a Drawbridge: An MBSE Application to an Infrastructure Project

Product – Guide to the Application of Systems Engineering in Large Infrastructure Projects, Version 2.0

Product – NETLIPSE/INCOSE Memorandum of Understanding

Product – A Metamodel for Infrastructure

Product – Leaflets of Systems Engineering application in the Infrastructure domain

6 APPROACH

The general approach that will guide this Working Group includes:

- Monthly teleconferences
- Quarterly webinars
- Leadership roles of members
- Decision making
- Norms or ground rules
- Accountability
- Participation at Symposia and Workshops
- Challenges

7 MEASURES OF SUCCESS

Overall of success for the Working Group

- Membership growth
- Membership composition (international)
- Membership composition (construction industry members)
- Number of enterprises involved in products development
- Number of products/services under development
- Number of products/services delivered

8 RESOURCE REQUIREMENTS

Support from INCOSE in reviewing documents, making them INCOSE-ready document, marketing, and publishing these products

Support from INCOSE in membership participation at NETLIPSE meetings (in Europe) and Construction Trades meetings

Infrastructure support – Webex for webinars; telecoms; Microsoft LiveMeeting; phone bridges for remote participants at IS and IW.

Annual Budget Request - \$10,000 for conferences attendance, and documents publication.

9 DURATION

No end is planned for this Working Group. This Working Group Charter will remain in effect until rescinded by the signatory.

10 SIGNATURES

Alain Kouassi

Date 2/12/19

1st Level of Approval

Technical Director, INCOSE

Date

2nd Level of Approval (Note this will be added by the INCOSE Technical Director when deemed appropriate.)

Chairman, INCOSE Board of Directors

Date

Revision History

<u>Date</u>	<u>Revision</u>	<u>Description</u>	<u>Author</u>
6/15/11	1.0	Initial Draft.	Alain Kouassi
3/20/14	2.0	Charter Updates	Alain Kouassi
2/12/19	3.0	Charter Update	Marcel van de Ven