



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

Configuration Management

www.incose.org/IW2022

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MEMBERS

20 working/reviewing + 7
interest

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

INCOSE WEB PAGE



<https://www.incose.org/incose-member-resources/working-groups/process/configuration-management>

Charter Summary



WG PURPOSE/MISSION

The main purpose of the Configuration Management Working Group (WG) is to ensure that the state of the art and the body of knowledge in CM be used to enhance the state of the art and the body of knowledge of SE; and vice versa. The CM WG will lead this effort within INCOSE; in liaison with external CM related experts, standardization bodies and other organizations and communities, as appropriate.

WG GOAL(S)

To grow and fully integrate the CM discipline within SE including all relevant areas of SE (e.g. modeling and simulation-based approaches for SoS).

To develop a community of CM-specialists within INCOSE (pool of knowledge) through various efforts including, but not limited to:

- Developing papers to be presented during International Symposia,
- Establishing project specific working relations with other professional societies and institutions with like interests in CM; a living N2 document shall be maintained to show relationship to other CM focused organizations. ,
- Advancing the body of knowledge regarding CM and its integration into SE and subsequently contributing to the SEBoK/SE Handbook,
- Initializing project specific working relationships with other INCOSE WGs; a living N2 document shall be maintained to show interaction with other INCOSE WGs.

To promote, encourage, supervise and perform research to extend the CM scope for SE (directing the cutting edge of SE related CM research) through various efforts including, but not limited to:

- Extending CM along the full lifecycle, including In Service and Asset Management,
- Extending CM across all elements of the System of Interest (Sol) and into Systems of Systems SoS,
- Tailoring and automation of CM,
- Tracing and reusing across multiple programs,
- Variability of systems, and
- Integration of Software CM.
- Emphasize the need for CM requirements to be established early in the System life-cycle (e.g., as part of Operability and Maintainability requirements);

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- Relationship between CM and other management domains (e.g. Asset Management, Inventory Management, Integrated Logistics Support);
- Selling the business case for CM;
- CM of modelling and simulation based approaches to SE;
- Reduce risks related to digitalization and in general emerging behaviors of systems and SoS;
- CM in relation with Artificial Intelligence and Augmented/Virtual Reality;

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WG SCOPE

This WG will address processes, methods and tools; organizational aspects; business and information requirements; as well as human aspects (competencies) related to CM.

The WG will address the interdependencies between the CM process in accordance with ISO/IEC 15288 including:

- other Technical Management processes;
- Technical Processes;
- Organizational, project-enabling processes.

For IT aspects (like exchange standards, tools and data) collaboration with the WG Tool Integration and Model Lifecycle Management will be established.

Collaboration with other relevant WGs/Initiatives (e.g. related to Requirements, MBSE, Ontology for SE, Digital Artifacts, SoS, etc.) and with external experts and bodies or organizations will be explored and established as appropriate.

The WG will also reach out to various industries, government and academia to widen their representation within the WG and secure exploration of CM aspects in these different application domains.

Furthermore, the WG will emphasize the supervision and other kinds of pro-active involvement in CM related research projects (including Ph.D. and Master level projects with universities) and report back to this WG on any such planned and on-going research and related outcomes (e.g. related to CM for SoS, MBSE, Software, Industry 4.0, etc.).

The WG will actively participate in reviewing and providing feedback including concrete inputs for the evolution of CM related standards (e.g. SAE 649, ISO 10007) and specifications/guidelines (e.g. CM2-500); and the INCOSE SE Handbook and SEBoK.

Finally, the WG will publish CM related practice and research papers (at conferences and in journals within various communities, e.g. INCOSE, CM2/IpX, CMPIC, IEEE, ITIL...); produce Guide(s) as INCOSE

WG Products (e.g. similar to the Requirements WG's "Guidelines for Writing Textual Requirements"); and continuously collect lessons learned (based on bad CM practice or "horror stories." communicated diplomatically; and good CM practice).

OUTCOMES (PRODUCTS/SERVICES)

Based on the goals of this WG described above, this WG aims to:

- Create and maintain a knowledge base, with the aim of collecting lessons learned from the members' experience in

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specific projects, in various domains. The analysis of the lessons learned will facilitate the identification of common, recurring CM issues and the formulation of best practices from a system-view standpoint all resulting in an update to SEBoK and/or the SE Handbook.

- One special issue of Insight (SE magazine) about CM.
- Take the INCOSE SE Handbook (SEH) latest version as a baseline and look to further integrate the CM aspects into the next version of SEH, while liaising with other relevant WG"s, e.g., requirements, ontologies, MBSE, MBCD, etc. (to establish end-to-end lifecycle).
- With direction from the INCOSE Standards Department and INCOSE"s POC to SAE Engage with the SAE G-33 Committee for participation in development of SAE/EIA 649 (series).
- Establish a Memorandum of Understanding with IpX/CM2 for participation in development of CM2-500.
- Continue to evaluate need for additional MoUs to support the CM Working Group as well as potential to leverage existing MoUs (e.g. PDES, OMG)
- Establish and manage over time a CM related research portfolio.
- Regularly publish CM related practice and research 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.
- A listing of CM standards, overlap, scope, etc. (a map of how they relate to each other) (e.g. IEEE 828-2012, emerging standard TC20-SC14, etc.)

IW Outcomes



IW Outcomes

- Reviewed Charter
- Recruited new members
- Selected topic leads
- Planned activities for the year

PLANNED ACTIVITIES AFTER IW

Technical Activities:

- CM Vocabulary/Taxonomy
- CM of Digital System Models and Digital Twins
- CM Research & Technology
- Don't Panic ? CM Guide
- Insight June 2022 article
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- Influence CM into SysML v2 and OpenMBE community and G33 Committee Interop exchange Guide
- SAE 649 C dissemination of knowledge in the WG

PLANNED WORK PRODUCTS AFTER IW

Products:

- IS2022 paperless presentation on "CM of Digital System Models and Digital Twins"
- Don't Panic ? CM Guide for CM
- Insight June 2022 article for FuSE (if selected)
- [Redacted]

IW Outcomes



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- SEBoK update in line with SE Handbook and beyond

- [Redacted]
- [Redacted]