



2019

Annual **INCOSE**
international workshop

Torrance, CA, USA

January 26 - 29, 2019

Automotive

www.incose.org/iw2019

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MEMBERS
~100

CO-CHAIRS

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INCOSE CONNECT ADDRESS



<https://connect.incose.org/WorkingGroups/Automotive/Pages/Home.aspx>

INCOSE WEB PAGE



<http://www.incose.org/docs/default-source/wgcharters/automotive.pdf?sfvrsn=8>

Charter Summary



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WG PURPOSE/MISSION

To promote the application and advance the practice of Systems Engineering in the automotive industry, encompassing OEMs, suppliers and service providers in the private, commercial and industrial vehicle sectors. Emphasis will be put on the current needs and future challenges of the industry, covering issues related to product development (complexity, safety and security, diversity, reuse) as well as to business and organizational aspects (new business models, new services and smart or multi-modal transportation systems).

WG GOAL(S)

Missions

To broaden and improve the application of Systems Engineering to the vehicle development process by tailoring standard SE processes and known best practices to the needs and specificities of the industry. To build a common, shared Systems Engineering expertise and body of knowledge for their application by actors across the automotive industry.

Objectives

To provide value-added services to our members through the production of quality deliverables, the organization of quality events and efficient administration of the group.

To grow the number of members of the group up to a level of self-sustainment and increase the diversity of the leadership team by:

- o Performing outreach actions
- o Helping members learn from each other and from the experience of INCOSE experts
- o Making sure that the needs of the members are covered by activity plans and are taken into account by INCOSE.

To support INCOSE's strategy to establish collaborations and partnerships with professional associations by initiating connections between the group and the different associations of the automotive industry.

WG SCOPE

From a global perspective, the Automotive Working Group will address the challenges faced by the actors of the industry when trying to implement SE or improve their application of SE. Previous work conducted by the Automotive Interest Group identified a series of topics covering a large spectrum of automotive concerns. These topics were grouped into generic SE themes (see below): organizational, SE processes, MBSE, architecture frameworks, safety and security, links with specialty domains and systems of

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systems. The products of the working group (deliverables, events, etc.) will address the needs of the whole automotive industry supply chain, comprising the private, commercial and industrial vehicles sectors. They are intended to be valuable, useful products for both beginners and established SE practitioners.

AWG Scope (initial survey):

ORGANIZATIONAL

- Acquisition: Contract-based processes (enabled by Requirements)
- Cooperation with suppliers in a MBSE scheme
- Lessons learned in implementing SE
- Lean Systems Engineering & Agility

MBSE & ARCHITECTURE FRAMEWORKS

- State of the art in system modeling
- Mapping of tools used in the industry
- Link with Simulation
- Link with Safety
- Modeling for communication purposes
- Common Automotive Architecture Framework
- Ontologies & Formal methods
- Standards : lobbying @ OMG

SYSTEMS ENGINEERING PROCESSES

- Requirements Engineering “top to bottom”
- Architecture-Driven design
- Reuse / Integration of COTS in a SE approach / Towards an “Automotive Systems List”
- Product Line Management
- Eco-Design

OUTREACH, TRAINING & OTHER SPECIFICITIES

- Connection between INCOSE and other Automotive Associations

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Link between Systems and SW Engineering

Electric/Electronic Architecture Management from a SE perspective

Ad-hoc Systems Engineering Training Supports

SAFETY AND SECURITY

Impacts of ISO 26262 on Systems Engineering and vice-versa

Systems and Safety/Security Engineering (unified) processes

SYSTEMS OF SYSTEMS

The automobile product in new mobility concepts and smart transportation systems

Engineering Systems and Services

Planned Work for IW



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Automotive WG

Sat 26 : 11:00-12:00

Welcome & Kick-off, start listing miscellaneous topics complementary to decided IW19 sessions

Automotive WG

Sat 26 : 16:00-17:00

AWG management & 2019 plans

Automotive WG

Sun 27 : 10:00-12:00

AWG working meeting, content confirmed/refined during kick-off: SE@SAE / OMG Safety & Reliability Profile

Automotive WG

Sun 27 : 16:00-17:00

Automotive SE Vision sub-group: Status and start executive summary work. Check final meeting attribute: access maybe limited to sub-group members.

Automotive WG: Cross WG about ITS architecture frameworks

Mon 28 : 13:00-15:00

ITS standards (Architecture Frameworks) like CVRIA: Adoption by industry domains (awareness, position -pros&cons-, ease, ...). Working meeting with Transportation WG, Infrastructure WG and System of Systems WG

Automotive WG: System and Software

Tue 29 : 08:00-10:00

Echange between Automotive WG & Software and Systems Interface WG (SaSIWG), general, and in particular : Autosar, MBSE-MBSW, CI

Automotive WG

Tue 29 : 13:00-14:00

AWG : Miscellaneous topics and Wrap-up