



# INCOSE Tool Integration and Model Lifecycle Management Working Group Charter

## 1 PURPOSE

The purpose of the Tool Integration and Model Lifecycle Management Working Group (TIMLMWG) is to provide the INCOSE membership the best practices and guidelines for tool integration and interoperability of tools including the management of models across the product lifecycle in support for the INCOSE SE Vision 2025.

## 2 GOALS

To provide the INCOSE membership best practices and guidelines for using computer based tools and exchanging metadata and models between the tools and processes in an integrated systems engineering environment.

To characterize systems engineering tool integration and interoperability requirements.

To specify requirements and assess solutions for model life cycle management.

To foster efficiency of systems engineering process execution through integrated processes, tools and environments including design, manufacturing and sustainment lifecycle systems.

To provide forums for discussion and information dissemination regarding tool integration, process implementation and operational behavior.

To promote the development, validation and deployment of standards that advance the interoperability of systems engineering toolsets.

To address model lifecycle management concerns and to establish scenarios and best practices that address the concerns of the community.

To determine efficient modeling structures to use. Structures include the repository, the models, and data within the models.



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## 3 SCOPE

The TIMLMWG is focused on the integration and interoperability of tools, data, models and processes as they relate to Systems Engineering processes and methods throughout the acquisition and product development life cycles.

## 4 SKILLS AND EXPERTISE REQUIRED

The skills and expertise that will enable our success are very flexible. The TIMLMWG membership is comprised of a mixture of personnel from tool vendors, industries, government, defense and standards organizations. Systems engineering process execution is migrating from the traditional document centric to a data centric paradigm with a focus on models. This same paradigm has occurred in various design disciplines for the past 40 years.

INCOSE members with experience in modeling, or wanting to develop the skills and advance the practice of system and modeling are welcome. Many types tools are used throughout a product lifecycle and the advancement of systems engineering processes using new methods, modeling and tools is strongly desired by the INCOSE membership. Members interested in working with tool vendors, NIST, OMG, ISO, and fellow INCOSE members on this problem set, are welcome to participate.

## 5 MEMBERS, ROLES AND RESPONSIBILITIES

List the names of members and briefly describe their responsibilities.

- Chair: Axel Reichwein
  - o Responsibilities include maintain the direction of the working group, maintenance of the working group collaboration, organizing projects and tracking progress.
  - o Responsible for status reporting to the Assistant Director for Technology Enablers.
  - o Responsible for attending the Technical Operations virtual meetings.
  - o Primary leader of the working group meetings at the International Workshop and Summer Symposiums.
  - o Responsible for the management of the Working Group travel budget that supports interaction with external organizations.
  
- Co-Chair(s): John Nallon, Lonnie VanZandt, Saumya Sanyal
  - o Responsibilities include assisting in maintaining the direction of the working group, leading projects and tracking their progress.



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- Responsible for status reporting to the Chair and the Assistant Director for Technology Enablers.
- Responsible for attending the Technical Operations virtual meetings in addition to or in the absence of the TIMLMWG Chair.
- (e.g. The co-chair shall be responsible to act in the absence of the chair.)
- Working Group Event Coordinator: Robert Malone
  - Responsibilities include planning and scheduling workshop and communication activities of the working group.
  - Responsible for working group International Workshop agendas and communications with the membership.
  - Responsible for synchronizing telecommunication events with the MBSE and INCOSE webinar coordinators.
  - Responsible for INCOSE working group collaboration site updates for all events.
- Technical Project Leaders: (as required)
  - Responsibilities include maintaining the direction of the project and involvement of the project team members, leading projects and tracking progress.
  - Responsible for status reporting to the working group chair and co-chair on a regular basis as defined in the Technical Project Plan.
  - Responsible for attending the working group virtual meetings and the International Workshop if possible.
  - The project co-lead shall be responsible to act in the absence of the project lead if this position is filled.
- Board Sponsor(s)/Champion(s): Director of Technical Operations
  - The Director of Technical Operations (TechOps) is responsible for resource advocacy and status reporting to the INCOSE BOD and external stakeholders.
- TIMLMWG Members are listed on the INCOSE Main Website. The TIMLM Working Group collaboration site is located in the INCOSE CONNECT site.
- Technical Project Plans identify specific sets of members who are engaged on a project and are maintained on the TIMLMWG CONNECT site.



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## **5.1 TERMS OF OFFICE**

The term of office for the Working Group Chair shall be for two years commencing 1 March of the election year. Prior to the International Workshop during the second year of office, the current chair will solicit volunteers for the position and the working group will select new leadership prior to the International Workshop. The outgoing working group chair will automatically become a co-chair. The duration of office for a co-chair is determined by the presiding chair.

### **5.1.1 CAUSES AND MEANS OF REMOVAL**

The Working Group leadership, including the chairs, co-chairs and project leaders, can be removed from office if the WG Measures of Success are not being met, if members are indicating majority need for change and petition for new leadership, or the INCOSE Technical Operations withdraws the WG permission to claim affiliation with INCOSE.

## **6 OUTCOMES (PRODUCTS/SERVICES)**

Details of all applicable to deliverables shall be defined in separate Technical Project Plans (TPP's). TPP's shall be developed, submitted and tracked as defined by the applicable Technical Operations procedure for each working group project.

The TIMLMWG provides information services for other Working Groups to consider in developing their own agendas and plans that involve the use of computer based tools in the execution of their plans. Frequent requests from the Tools Database WG, Standards activities, and the MBSE activity groups are supported as required.

The TIMLMWG provides services (as needed) to the Standards Initiative for developing international standards that involve the integration and interoperability of systems engineering tools. The TIMLMWG communicates with numerous vendors, standards groups and professional organizations interested in or working on integration and interoperability requested by INCOSE.

## **7 APPROACH**

The general approach that guides the operation of the TIMLMWG includes the following:

- TIMLMWG meetings will be held on a regular basis via web conferences and telecoms. Meetings will be announced ahead of time to enable the maximum attendance.
- In person TIMLMWG meetings will be scheduled and held at the International Working Group Workshop and the International Symposiums. These meetings will provide



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virtual communications with the membership if it is available. Otherwise meeting notes will be taken and distributed.

- Decision making will follow an integrated process team approach where group consensus will formulate working group and project team decisions. However, when a project team or working group team has to make a final decision for efforts to move forward, the project team leader will confer with the WG chair and co-chair and together they will make the final decisions for the project or the working group.
- The working group chair and co-chairs will be accountable for the budgeting, governance of project schedules, and completion of projects. The project leaders will be responsible for the execution of the Technical Project Plan for the project.
- TIMLMWG Communications will be conducted by the communication assets provided by INCOSE in the form of telecommunications, e-mail, mail reflectors, the INCOSE Connect site, wiki's and any other communication asset that the working group member companies or Corporate Advisory Board member companies may be able to provide that enables adequate communication between members.

### 8 MEASURES OF SUCCESS

The measure of success for the WG will be directed to the quality of products or services produced or to be provided, the level of support for integration or interoperability standards development, the level of MBSE initiative support and the growth of working group membership. Detailed measures of success for individual products or services produced will be contained in the applicable individual Technical Project Plan for these products or services. TIMLMWG measures of success include:

- The size of the active member versus the total membership,
- The number of enterprises involved in the project.
- The number of products or services engaged in active development (as defined by individual TPP's).
- The number of published products or services delivered to the INCOSE membership for internal or external use.
- The TIMLMWG has prepared and delivered a Concept of Operations for a hypothetical, ideal, yet effective Integrated Systems Engineering Environment.
- The TIMLMWG has prepared and delivered a Concept of Operations for a hypothetical, ideal, yet effective system for Model Lifecycle Management.
- The Systems Engineering community has recognized the TIMLMWG as a source of expertise on Tool Integration and Model Lifecycle Management.



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### **9 RESOURCE REQUIREMENTS**

The resources required to attain success in terms of human requirements will be dictated by the number of projects and what is required by any project to complete the plan.

Good communications resources are required in terms of infrastructure support (e.g. telecoms, Go-To Meeting) for virtual working group meetings. The working group member companies may volunteer to provide communications assets in support of projects and our working group members when needed.

Resource needs outside INCOSE will be defined on terms of who and when and the proposed method to secure attainment (e.g. MOU/MOA) will be processed with Technical Operations leadership following the appropriate processes.

### **10 DURATION**

This Charter will remain in effect until rescinded by the signatory. It is anticipated this working group will be chartered through June 30, 2025 in support of the INCOSE Vision.



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### 11 SIGNATURES

TIMLMWG Chair

Date

#### 1<sup>st</sup> Level of Approval

Technical Director, INCOSE

Date

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

Chairman, INCOSE Board of Directors

Date



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### Revision History

<u>Date</u>	<u>Revision</u>	<u>Description</u>	<u>Author</u>
01/15/2011	1.0	Initial Draft.	John Nallon
03/24/2011	1.5	Submittal for approval	John Nallon
04/23/2011	1.5	Updated Scope	John Nallon
05/28/2012	2.0	Updates to goals, scope, staffing	John Nallon
03/26/2013	2.1	Update to leadership	John Nallon
11/08/2014	3.0	Update to new leadership, goals, scope	John Nallon
02/18/2016	4.0	Update to merge with MLM Activity Team	John Nallon
03/28/2016	5.0	Incorporated feedback from Tech Ops	John Nallon