



**2019**

Annual **INCOSE**  
international workshop

**Torrance, CA, USA**

January 26 - 29, 2019

# Model-Based Conceptual Design

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# Model-Based Conceptual Design



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## CHAIRS

Randall Satterthwaite

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## MEMBERS

50

## INCOSE CONNECT ADDRESS



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

## INCOSE WEB PAGE



<https://www.incose.org/incose-member-resources/working-groups/transformational/model-based-conceptual-design>

# Charter Summary



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## WG PURPOSE/MISSION

With most of the cost for a design committed in the concept phase, the Model Based Conceptual Design (MBCD) Working Group is focused on feeding the right selected concept to reduce risk, cost and development time of the total program. This is done by:

1. Understand the problem
2. Define the problem
3. Identify the concepts
4. Model the concepts
5. Evaluate the concepts
6. Deliver the selected concept for further development.

The MBCD working group is still finalizing the charter and clarifying the mission of the group.

## WG GOAL(S)

1. Understand the problem domain
2. Model and Evaluate the concepts
3. Communicate with the stakeholders effectively
4. Deliver clear understanding of risks, limitations, and rationale for the concepts.
5. Deliver selected concept with quantified assessment of why it is selected concept

# Charter Summary

## WG SCOPE

Scope is in progress.



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# IW Outcomes



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## IW Outcomes

1. Identified the importance of defining what Concept Development is and what that means to different industries
2. Identified the need to leverage what the other working groups are doing, assigned members to work with 10 other working groups.
3. Collect Stakeholder Needs
4. Collect Examples/Research Data
5. Understand Interaction Points between groups
6. Identified the need for translations of information from MBCD to different industries to get better adoption and easier transition to MBCD.
7. Identified several gaps that need to be addressed in where MBCD fits, what is the boundaries of MBCD, and what are the interaction points of MBCD with other aspects of design and development.
8. Added significant updates to the MBCD System Model
9. Reviewed Proposed MBCD Domain structure that breaks down MBCD into 4 domains
10. Problem Domain - What the system must address, the reason for developing the system. Also known as business case, Mission engineering, etc...
11. Concept Domain - pulling all of the concepts to address the problem into one space that would allow for modelling to some level of fidelity as well as comparing of the different concepts and testing against the need from the problem domain
12. Solution Domain - Delivering a selected solution based on the work of the concept domain, this is where traditional MBSE would start and the model would grow to a higher fidelity.
13. Project Domain - Interface with the organization, identify resources, define the stakeholders, and manage the communication between the different stakeholders.

# Planned Work past IW



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## PLANNED ACTIVITIES

1. Working with several other working groups to understand different industries lexicon and needs (application domain working groups) as well as what tools, methods and means can be leveraged in MBCD (application, process and transformation enablers)
2. Monthly Group Meetings will be setup, with breakdown into further smaller focused groups for specific aspects of MBCD.
3. Assembling data that has been gathered at IW into a proposed Charter and deliverable.
4. Continue to evolve and define the MBCD system model.

## PLANNED WORK PRODUCTS

Charter and Proposed deliverable for this cycle (2019-2020).