
MBX Ecosystems/OpenMBEE Track at INCOSE IW20

INCOSE IW20 Context

- *INCOSE IW20 overall info:* Jan 25-28, 2020 (Sat-Tue) • Torrance, CA • <https://www.incose.org/iw2020/home>
- *INCOSE MBSE Initiative site:* <https://www.omgwiki.org/MBSE/>
- *INCOSE MBSE Initiative IW20 page:* https://www.omgwiki.org/MBSE/doku.php?id=mbse:incose_mbse_iw_2020

MBX Ecosystems/OpenMBEE Track @ IW20

- *Agenda Version:* revd (as-released Jan 25, 2020) – for release to OpenMBEE mail list, website posting, etc.
- *Agenda Status:* Everything is finalized subject to unforeseen last-minute changes.
The Mon/Tue MBX Ecosystem sessions also appear on the overall IW20 schedule here:
<https://www.incose.org/iw2020/program/event-schedule>
- *Primary point-of-contact (POC) for this agenda:* Russell Peak (Georgia Tech).
Other key organizers for this IW20 track: Bjorn Cole (Lockheed), Chris Del p (NASA), and Brittany Friedland (Boeing).

Official group name within INCOSE MBSE Initiative: MBX Ecosystems Challenge Team

- <https://www.omgwiki.org/MBSE/doku.php?id=mbse:ecosystems> (a work-in-process wiki)
- This effort was announced as a new Challenge Team at IW19:
 - A team overview presentation by R Peak et al. was in the [MBSE Initiative plenary](#) session on Sun Jan 27, 2019.
- The MBX Ecosystems Challenge Team is effectively a spin-off of the MSI (Modeling & Simulation Interoperability Challenge Team) based on ecosystem workshops that the MSI team organized at IW15, IW17, and IW18.

Sat Jan 25, 2020

MBX Ecosystems/OpenMBEE Track

- No separate MBX Ecosystems/OpenMBEE track content is planned for this day.
- Instead, we encourage participation in the MBSE Initiative plenary sessions per the link below.

MBSE Initiative Plenary Sessions

- See the following web page regarding the MBSE-related specifics for this day:
https://www.omgwiki.org/MBSE/doku.php?id=mbse:incose_mbse_iw_2020
- Includes the following presentations related to MBX Ecosystems/OpenMBEE: tbd

Sun Jan 26, 2020

MBX Ecosystems/OpenMBEE Track

- No separate MBX Ecosystems/OpenMBEE track content is planned for this day.
- Instead, we encourage participation in the MBSE Initiative plenary sessions per the link below.

MBSE Initiative Plenary Sessions

- See the following web page regarding the MBSE-related specifics for this day:
https://www.omgwiki.org/MBSE/doku.php?id=mbse:incose_mbse_iw_2020
- At 1:00pm it includes the following overview presentation (20 minutes total):
MBX Ecosystems Challenge Team Overview (Russell Peak, Chris Del p, Brittany Friedland, Bjorn Cole).

Mon Jan 27, 2020 – MBX Ecosystems/OpenMBEE Track (Mon pg 1/2)

Mon 9:00am-9:30am MBX Ecosystems/OpenMBEE Plenary

Location: Salon E. *Speaker:* Russell Peak (Georgia Tech).

Track Leads: Bjorn Cole (Lockheed), Chris Delp (JPL), Brittany Friedland (Boeing), Russell Peak (Georgia Tech) - POC.

- Overview of MBX Ecosystems/OpenMBEE topic and this IW20 track.
- OpenMBEE community status, resources, etc. (including overview of website, webcons, and so on).

Mon 9:30am-10:00am Keynote: MBX Ecosystems and Digital Engineering

Location: Salon E. *Speaker:* Mark Petrotta (SSI – System Strategy Inc).

- How MBX ecosystems enable and support Digital Engineering strategies and implementations.

Mon 10:00am-10:30am Morning Break

Mon 10:30am-11:00am OpenMBEE Overview

Location: Salon E. *Speakers:* Chris Delp and Robert Karban (JPL).

Objectives: Provide OpenMBEE overview & status update (including intro for new potential users).

- Additional specifics will be covered during the OpenMBEE Roadmap & Working Groups session (Mon at 4:00pm).

Mon 11:00am-12:00pm Experiences with Production Ecosystems – Round1

Location: Salon E.

Session Lead: Brittany Friedland (Boeing).

Context: Organizations will share experiences regarding their production MBX ecosystems (preferably with OpenMBEE-based ecosystems, but other ecosystem technologies are welcome too).

Format: Two 30-minute slots, including speaker presentation, audience Q/A, discussion, and change-over time.

- US Navy (David Fields) – Naval Integrated Modeling Environment (IME) overview.
- Raytheon (Stephanie Chiesi / Jim Broderick) – MBE and MBSE at Raytheon Missile Systems.

Mon 12:00pm-1:00pm Lunch

NOTE: Poster authors need to assemble their posters during the lunch break (to be ready for the 3:00pm Poster Session).

Mon 1:00pm-2:00pm Experiences with Production Ecosystems – Round2

Location: Salon E.

Session Lead: Brittany Friedland (Boeing).

Context: Same as Round1 (Mon 11:00am).

Format: Two 30-minute slots, including speaker presentation, audience Q/A, discussion, and change-over time.

- Boeing (Alek Przybylo) – High performance graph query infrastructure for OpenMBEE.
- Continental (Maged Khalil) – Overview of MBX ecosystems in the automotive supplier domain.

Mon Jan 27, 2020 – MBX Ecosystems/OpenMBEE Track (Mon pg 2/2)

Mon 2:00pm-3:00pm

Panel: A World of Multiple Modeling Languages, or One Language to Rule Them All?

Location: Salon E.

Panel Moderator: Bjorn Cole (Lockheed).

Panelists: Terri Chan (Boeing), Erich Lee (JPL), and Ahsan Qamar (Ford).

Objectives: Discuss role of various modeling languages and (i) how they work together today (from a practitioner's perspective) and (ii) envisioned advances in the near-future.

Mon 3:00pm-4:00pm

Poster Session (overlapping with Afternoon Break): OpenMBEE-Compatible Vendor Tools

Location: Salon E (in back of room).

Lead Organizer: Bjorn Cole (Lockheed).

Participating Organizations: (7 total)

IncQuery Labs, InterCAX, LieberLieber, Maplesoft, No Magic / Dassault, Phoenix Integration, Thales/IncQuery Labs.

NOTE: Poster authors need to assemble their posters during the lunch break (to be ready for the 3:00 pm Poster Session).

Mon 4:00pm-5:00pm

OpenMBEE Roadmap & Working Group Status

Location: Salon E.

Primary Speaker: Chris Delp (JPL).

Objectives: Provide overall status & roadmap: current/recent main releases; coming releases.

- Provide additional specifics and discussion (beyond the Mon 10:30am OpenMBEE overview session).
- Provide highlights regarding OpenMBEE working groups (WGs) and related topics, including:
 - Architecture WG
 - Model Mgt System WG (MMS)
 - Model Development Kit WG (MDK)
 - Deployment WG
 - New UX technology: Jupyter MDK

Continued on next page ...

Tue Jan 28, 2020 – MBX Ecosystems/OpenMBEE Track (Tue pg 1/2)

Tue 8:00am-10:00am Experiences with Production Ecosystems – Round3

Location: Salon E.

Session Lead: Brittany Friedland (Boeing).

Context: Same as Round1 (Mon 11:00am).

Format: Four 30-minute slots, including speaker presentation, audience Q/A, discussion, and change-over time.

- Ford (Ahsan Qamar) – Making data actionable -- visual analytics application to failure mode & effect analysis.
- JPL (Erich Lee and Eric Browser) – JPL systems environment.
- Toyota (Tetsuya Miwa) – Simulation to MBSE: Digital development challenge.
- Lockheed Martin (Chas Galey, Bjorn Cole, Patrick Keen) – A path for digital transformation.

Tue 10:00am-10:30am Morning Break

Tue 10:30am-12:00pm MBX Ecosystem Growing Pains & Open Discussion

Location: Salon E.

Session Leads: Chas Galey (Lockheed Martin) and Russell Peak (Georgia Tech).

Objectives: Discuss growing pains for MBX ecosystems in practice, including: migrating between major tool versions (and the need for more robust releases from tool vendors), scaling for viral demand, working with large models, dealing with tool performance issues, and related topics. If feasible, we aim to gain consensus for a prioritized list of pain points and identify which ones need additional vendor support and/or additional OpenMBEE community support during 2020 in particular.

Format: There will be one or more brief/informal presentations to help provide context and get the discussion started (including at least one cautionary tale).

Continued on next page ...

Tue Jan 28, 2020 – MBX Ecosystems/OpenMBEE Track (Tue pg 2/2)

Tue 12:00pm-1:00pm Lunch

Tue 1:00pm-2:30pm MBX Ecosystems/OpenMBEE Research

Location: Salon E.

Session Lead: Russell Peak (Georgia Tech).

Objectives: Overviews of the latest research and other emerging technologies for MBX ecosystems in general and OpenMBEE in particular. Includes technology exploration studies from industry, government, and academia.

Format: Three 30-minute slots, including speaker presentation, audience Q/A, discussion, and change-over time.

- SysML v2 pilot implementation status and demo – Ed Seidewitz (Model Driven Solutions/SST).
- Best Practice Patterns for Variant Modeling of Activities in MBSE – Ryan Colletti, Ahsan Qamar, Sandro Nuesch, and Chris Paredis (Clemson and Ford).
- Verifying executability of SysML behavior models using SMT solvers – Conrad Bock and Raphael Barbau (NIST).

Tue 2:30pm-3:00pm MBX Ecosystems/OpenMBEE Track Wrap-Up

Location: Salon E.

Session Leads: Bjorn Cole (Lockheed), Chris Delp (JPL), Brittany Friedland (Boeing), Russell Peak (Georgia Tech) - POC.

Objectives: Everyone is invited to the wrap-up session to discuss the following with the leadership of the MBX Ecosystems Challenge Team:

- Feedback & observations regarding this IW20 track.
- Next steps for this challenge team.
- Plans for ongoing webcons, OpenMBEE mtgs at OMG quarterly meetings, working group & sub-community webcons (ex. already have weekly developer committer tagups), working group & sub-community break-down, and so on.
- Recommendations for this track at IW21, and so on.

Tue 3:00pm-4:00pm IW20 Closing Plenary

Tue 4:00pm-6:30pm IW20 Closing Reception & WG Market Place

Join the MBX Ecosystems participants (and other IW20 participants) and let the spirited discussions continue!! ☺