
MBX Ecosystems/OpenMBEE Track at INCOSE IW19

Context

INCOSE IW19 overall info: Jan 26, 2019 - Jan 29, 2019 • Torrance, CA • <https://www.incose.org/iw2019/home>

INCOSE MBSE Initiative site: <https://www.omgwiki.org/MBSE/>

INCOSE MBSE Initiative IW19 page: https://www.omgwiki.org/MBSE/doku.php?id=mbse:incose_mbse_iw_2019

MBX Ecosystems/OpenMBEE Track @ IW19

- Agenda version: revb (as of Sat 2019-01-26).
- Status: The agenda structure & time boundaries are finalized; a few items/speaker specifics (**) are evolving due to US gov partial shutdown and other factors; check below ecosystems wiki for latest agenda version.
- Primary points-of-contact for this agenda:
Russell Peak (Georgia Tech), plus Chris Delp (NASA), and Brittany Friedland (Boeing).

Corresponding official INCOSE group name: MBX Ecosystems Challenge Team.

- <https://www.omgwiki.org/MBSE/doku.php?id=mbse:ecosystems> (a new work-in-process wiki)
- This effort will be announced as a new Challenge Team during the [MBSE Initiative plenaries at IW19](#).
 - See overview presentation Sun Jan 27 at 1:00pm PT by R Peak et al.
- 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 26, 2019

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 below.

MBSE Initiative Plenaries

- 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_2019

Sun Jan 27, 2019

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 below.

MBSE Initiative Plenaries

- 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_2019
- At 1:00pm it includes the following overview presentation (20 minutes total):
MBX Ecosystems Challenge Team Intro & Overview (Russell Peak, Chris Delp, Brittany Friedland).

Mon Location: Salon E (unless otherwise noted for Parallel Sessions).

Mon 8:00am-10:00am MBX Ecosystems/OpenMBEE Plenary

Session Leads: Russell Peak (Georgia Tech), Chris Delp (JPL), Brittany Friedland (Boeing).

- Overview of MBX Ecosystems/OpenMBEE topic and this IW19 track.
- OpenMBEE community status, resources, etc. (including overview of website, webcons, and so on).
- OpenMBEE roadmap: current/recent main releases; coming releases.
- Towards a family of models for MBX ecosystem reference architectures.

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

Mon 10:30am-12:00pm OpenMBEE Sub-Communities - Parallel Sessions - Round 1

These sessions are a great chance for various OpenMBEE communities to meet in-person and share experiences and know-how. Suggested content for each community session:

- Introductory content: Community focus, status, use cases, and resources.
- Workshop-style discussion, plus several speakers sharing example applications.
- Main pain points/priorities; desired outcomes
- Roadmap & next steps for community collaboration (ex. near-term items to prep & deliver to the community).
- Other topics of interest to actual participants present at the session.

OpenMBEE end user sub-community

Location: Salon E

Session Leads: Brittany Friedland (Boeing) and John Herrold (Boeing).

- See other suggested session content above (under Mon Round1).
- Speakers:
 - Experiences getting end users going with OpenMBEE - Brittany Friedland et al. (Boeing).
 - Other speakers and discussions based on audience participation.

OpenMBEE deployment/ops sub-community (install/admin/maintain/update/migrate)

Location: Salon G

Session Leads: Jason Han (JPL), Sophie Wong (JPL), Greg Green (Boeing), and Mike Pieknik (Boeing).

- See other suggested session content above (under Mon Round1).
- Speakers:
 - OpenMBEE deployment for enterprise usage at Boeing (including Ansible dev/deployment and related challenges) - Mike Pieknik (Boeing).
 - Deploying using Docker Compose - Chas Galey (LMCO).
 - Other speakers and discussions based on audience participation.

Mon 12:00pm-1:00pm Lunch

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Mon 1:00pm-3:00pm OpenMBEE Sub-Communities - Parallel Sessions - Round2

See context given under MonRound1 above.

OpenMBEE ecosystem SE/architect sub-community

Location: Salon E

Session Leads: Chas Galey (Lockheed), Robert Karban (JPL)

- See other suggested session content above (under Mon Round1).
- Speakers:
 - John Herrold (Boeing) - Boeing status & approach.
 - Hisashi Miyashita (Maplesoft) – SE perspective regarding how third-parties interface to OpenMBEE mms.
 - Chas Galey (LMCO) - Lockheed status & approach.
 - Robert Karban et al. (JPL) - Current ecosystem architecture in-use at JPL; future architecture plans.
- Other topics for discussion:
 - SE view of how to manage OpenMBEE architecture changes and planning future versions (similar to s/w dev process, but for arch model aspects)
 - How to extend existing services (including dynamic module loading, occurrence modeling, and related security concerns as suggested by Ed Hodapp (Boeing)).

OpenMBEE developer sub-community

Location: Salon G

Session Leads: Doris Lam (JPL), Mike Pieknik (Boeing)

This community is targeted for developers of:

- Core OpenMBEE components themselves (mms/ve/mdk).
- Interfaces to OpenMBEE and related subsystems.
- Topics include:
 - Overview of code bases, committer workflow, developer ecosystem, ...
 - Tools for efficient development (ex. how to avoid/minimize number of MMS reboots, ...)
- Speakers:
 - Other speakers and discussions based on audience participation.

Mon 3:00pm-3:30pm Afternoon Break

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Mon 3:30pm-5:30pm OpenMBEE-Compatible Vendor Tools

Location: Salon E

Session Leads: Laura Hart (MITRE), Chris Delp (JPL)

The focus of these invited presentations is to identify needs, plans, and current capability for how you work in the larger context of an Open Model-Based Engineering Environment. If the vendors have plans or existing capabilities that leverage any OpenMBEE models or software, this is a definite plus.

Suggested areas to focus on include:

- Are there open source codes that are available for use with the open parts of your products?
- How does your organization treat open source customer code suggested for incorporation in your products?
- How do you provide integration for open source products?
- How do you support users who want to make open source models and for what modeling languages?

Tool vendors with work specific to OpenMBEE are encouraged to address topics such as:

- What are the primary use cases for your tool within an OpenMBEE-based ecosystem?
- What subsystem roles does your tool play within an OpenMBEE-based ecosystem?
- How have you interfaced your tool into the OpenMBEE-based ecosystem architecture? API approaches ...

With six vendors presenting, each speaker is allotted 19 minutes (including Q/A, discussion, and change-over between speakers) plus a 5-minute intro to the session by the session leads.

Speakers are confirmed from the following vendors (shown here in alphabetical order):

- IBM / Rhapsody
- IncQueryLabs / IncQuery
- InterCAX / Syndea
- Maplesoft / MapleMBSE
- PTC / Integrity Modeler
- Phoenix Integration / ModelCenter, MBSEpak

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Tue Location: Salon F/G

Tue 8:00am-10:00am Experiences with Production Ecosystems – Round1

Location: Salon F/G

Session Leads: Mark Blackburn (Stevens Tech), Russell Peak (Georgia Tech)

Organizations will share their MBX ecosystem experiences with one or more of the following topics for IW19 (preferably with OpenMBEE-based ecosystems, but that is not essential here):

- SysML models of your MBX ecosystems, including overviews of ecosystem structure, behavior, and/or analysis & trade studies; how you utilized your ecosystem SysML models; and soon.
- Challenges & benefits managing your ecosystems during one or more lifecycle phases (including metrics).
- Model-based acquisition, including how your ecosystem interacts with your customer/supplier ecosystems.
- Strategies for utilizing open-source software in security-conscious environments:
 - How to de-stigmatize usage of open source and manage the risks.
 - Practical concerns with ecosystem components that cannot be readily upgraded (such as Alfresco).
- Guidelines how to setup an OpenMBEE-based ecosystem (helping new adopter organizations).
 - Overcoming fear/uncertainty/doubt; addressing IT challenges and stumbling blocks.
 - Leveraging scalable computing, such as cloud-based servers and user desktops.
 - Getting organizations to realize they need to support code dev/maintenance to some degree.
- Enabling large-scale collaboration, including sharing quantitative measures in your presentation where feasible (typical model sizes, number of modelers per model, number and types of library models, and soon).
- Increasing productivity via starter models, reference architectures, building block libraries, prefabs, etc.

Confirmed speakers (four 30-minute slots, including Q/A, discussion and change-over)

- SSI - Troy Peterson, et al. – SSI ecosystems work (confirmed) plus highlights of TARDEC aspects**
- Ford - George Walley, et al.
- Boeing - Greg Green, et al.
- ESA/ESTEC – Hans Peter de Koning, et al.

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

Tue 10:30am-12:00pm Experiences with Production Ecosystems – Round2

Location: Salon F/G

See context given in Tue Round1 section above.

Confirmed speakers (three 30-minute slots, including Q/A, discussion and change-over)

- JPL – Chris Delp, et al.
- Lockheed – Chas Galey, Chris Schreiber, et al.
- NAVAIR SET Ecosystem – David Fields, et al. (via webcon**)

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Tue 12:00pm-1:00pm Lunch

Tue 1:00pm-3:00pm MBX Ecosystems/OpenMBEE Research

Location: Salon F/G

Session Leads: Chris Delp (JPL), Russell Peak (Georgia Tech)

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.

Confirmed speakers (four 30-minute slots, including discussion):

- Ed Seidewitz (Model Driven Solutions; SST): Early prototypes of SysML v2 and envisioned impact on MBX ecosystems.
- Mark Blackburn (Stevens Tech/SERC): Research topics for IoIF (interoperability and integration framework), including work with SPARQL, Tableau visualizations, and so on.
- Bjorn Cole, Santiago Balestrini (GTRI): Jupyter-OpenMBEE mms interoperability.
- Ivan Gomes, Doris Lam (NASA/JPL): Using Jupyter with OpenMBEE.

Other candidate speakers/topics (on standby if needed):

- Russell Peak (Georgia Tech): Research topics for SysML/MBX, including element prefabs for increased productivity.

Tue 3:00pm-3:30pm Afternoon Break

Tue 3:30pm-4:30pm Wrap-Up & Leadership Meeting

Location: Salon F/G

Session Leads: Russell Peak (Georgia Tech), Chris Delp (JPL), Brittany Friedland (Boeing).

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 IW19 track.
- Next steps for this challenge team.
- Plans for ongoing webcons, OpenMBEE mtgs at OMG quarterly meetings, sub-community webcons (ex. already have weekly developer committer tagups), sub-community break-down, and so on.
- Recommendations for this track at IW20, and so on.