ASME
Model-Based Enterprise (MBE)
Executive Briefing

April 20, 2021

Thomas Hedberg, Chair, MBE Standards Committee

Any information presented is governed by a rigorous ANSI process.
All standards content in this presentation is DRAFT-ONLY.

BLUF

- MBE Charter:

Develop standards or related products that provide rules, guidance, and examples for the creation, use and reuse of model-based datasets, data models, and related topics within a Model-Based Enterprise (MBE)

- MBE SC Scope:

The recommended practices and requirements for the creation, exchange, and use of models within the mechanical engineering discipline, including the interface of mechanical engineering to other engineering and business disciplines.

Model-Based Enterprise Standards Committee Overview

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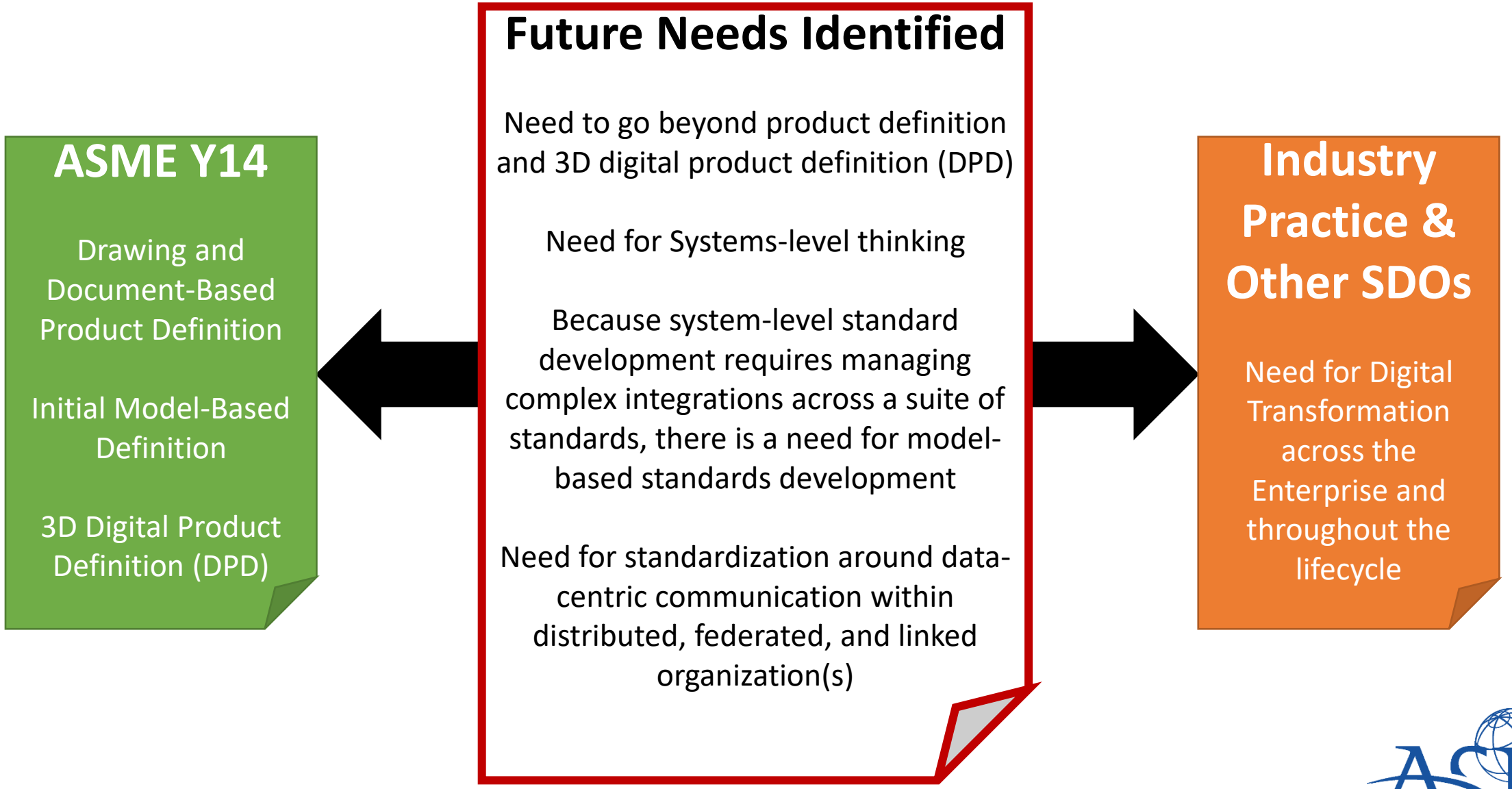
Why was the MBE Committee Formed



MBE?

- Interdisciplinary environment
- Models are the source, rather than documents
- Encompasses all business activities
- Classes of Models, e.g.,
  - System
  - Product
  - Process

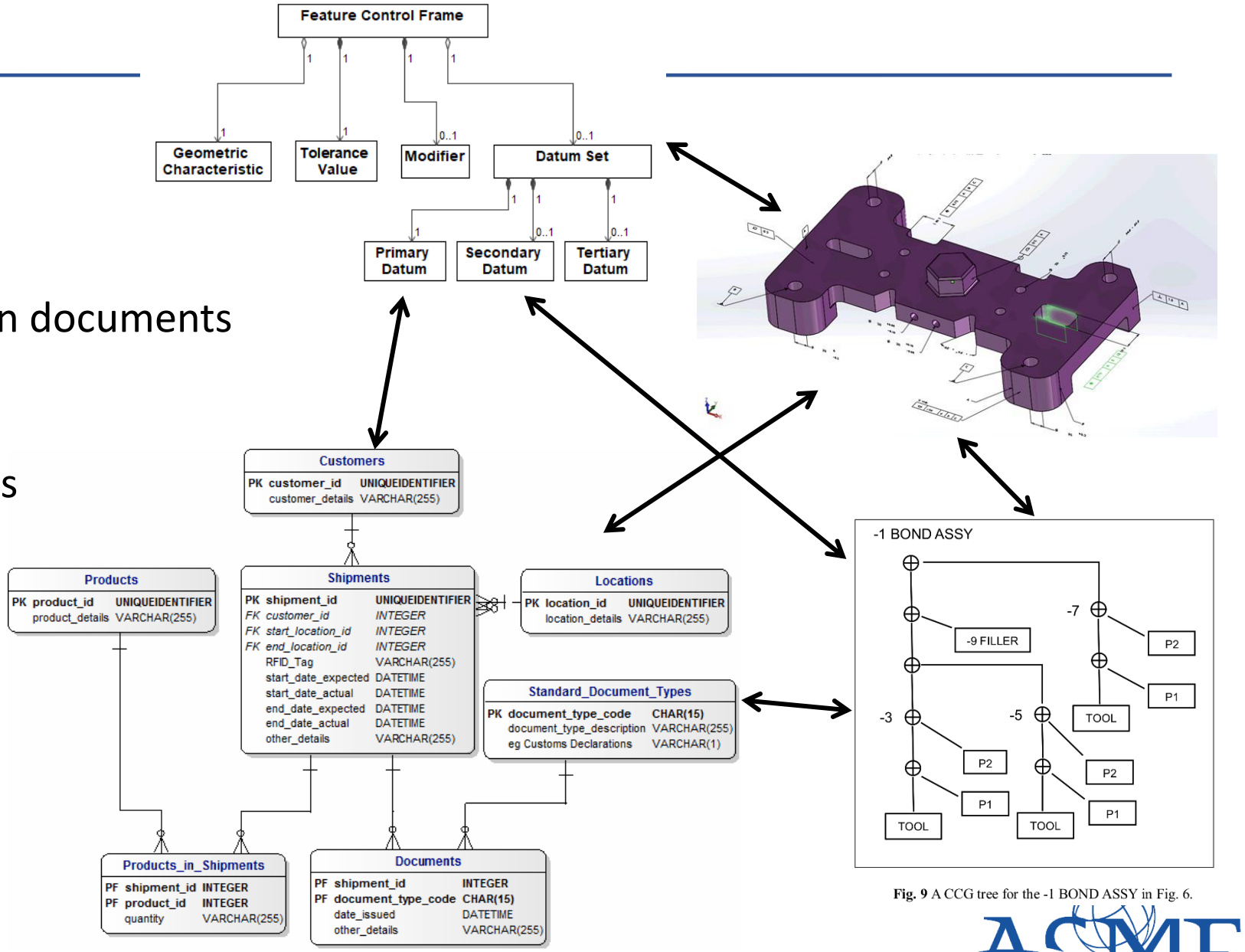
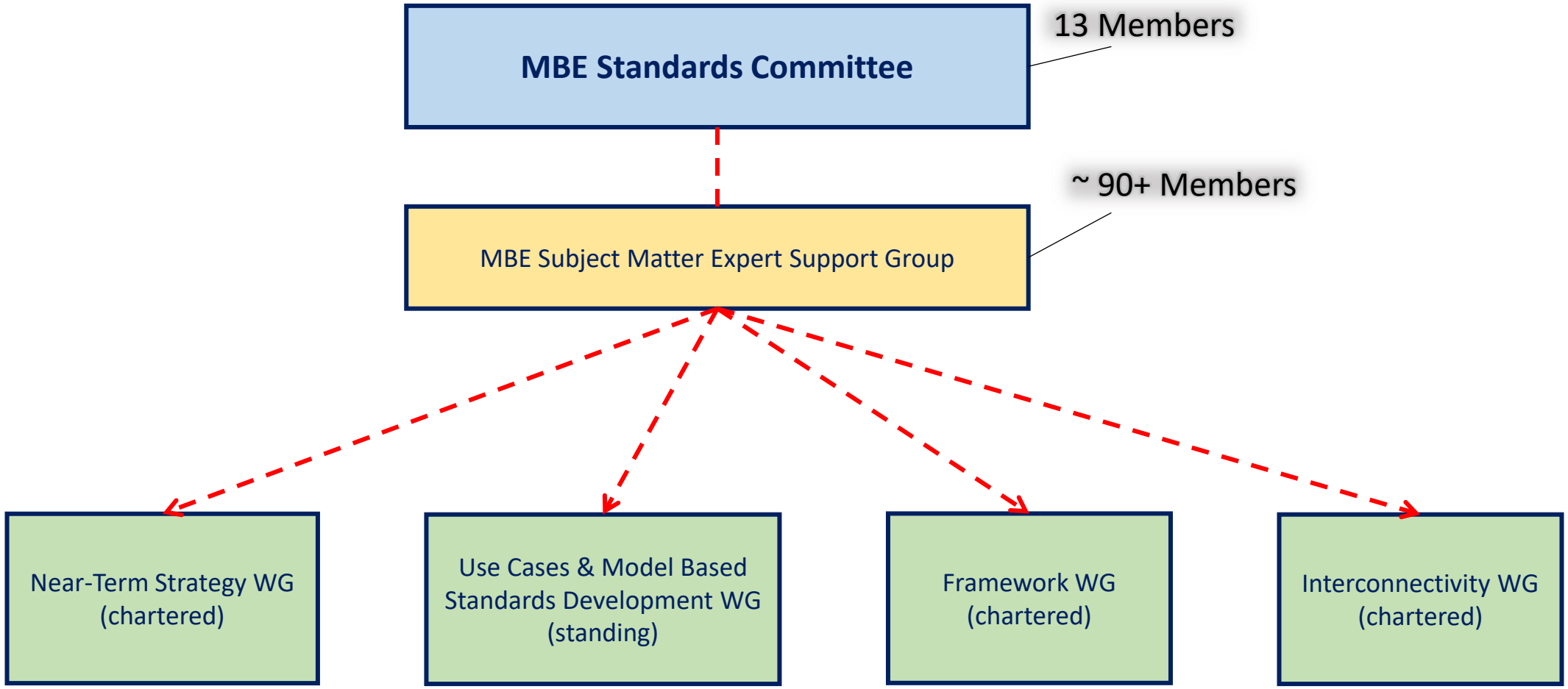


Fig. 9 A CCG tree for the -1 BOND ASSY in Fig. 6.

ASME MBE Committee Structure, April 2021



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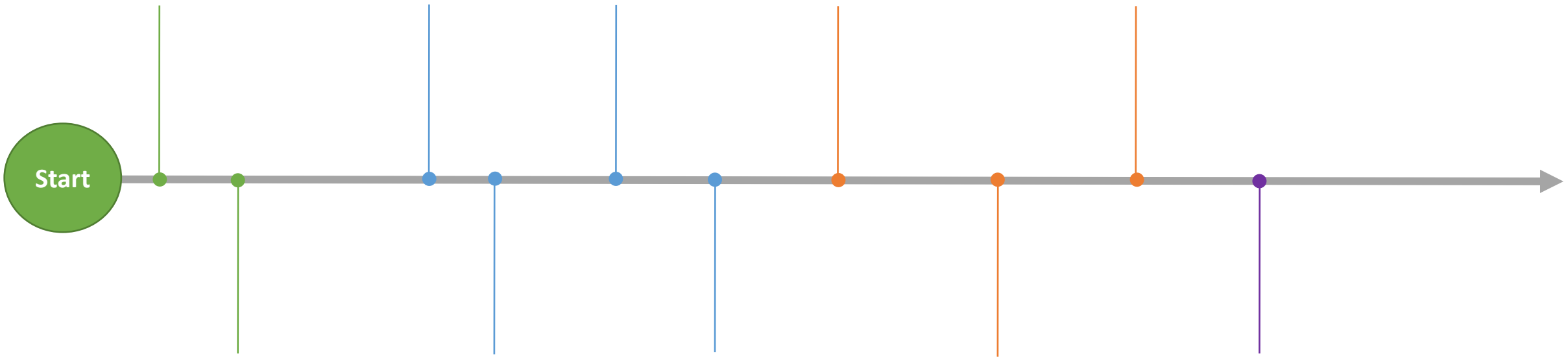
Organizations Represented in ASME MBE

GE Appliances	Purdue University	US Air Force	John Deere	US Navy
Capvidia	FDA	Sandia	Raytheon Technology	US Army
Action Engineering	Rolls-Royce	Boeing	LMI	Newport News
Sony	Ford	NIST	DS Solidworks Corp	Mitutoyo
ITI – International Technegroup	Tenneco	Lockheed Martin	UNC Charlotte	Allison Transmission
ICTT Systems Sciences	Woodward Inc.	Elysium	3D PDF Consurtium	Penn State Univ
Sigmetrix	Siemens	Ribose Inc.	XSB Inc.	Nvariate Inc.
Hexagon Manufacturing	Anautics	Cadenas PARTsolutions	Univ of Ontario	Univ of Maryland
Industry for Process Excellence (IpX)	SAIC	Colab	JSL Innovations Inc.	MRIIOT LLC
Sub-Zero Group	Tech Azul	Youngtown State	Commonwealth Center For Advanced Manufacturing	

ASME MBE Standards Committee 2018-2020



February 2018
Working Group formation approved by the ASME Board on Codes & Standards Operations and the Council on Standards and Certification

December 2018
MBE Steering recommendation report delivered to ASME

March 2019
MBE Standards Committee Formed

April 2019
First Public MBE Standards Committee Meeting @ NIST

May 2019
First Call for Participation in MBE Working Groups

November 2019
MBE Standards Committee Fall Meetings @ San Antonio, TX

March-April 2020
Release of Request for Information (RFI) to aid in MBE Standards Development

September 2020
Initial findings from RFI published

April 2020
MBE Standards Committee and Working Group Meetings @ Virtual

November 2020
MBE Standards Committee Fall Meetings @ Virtual

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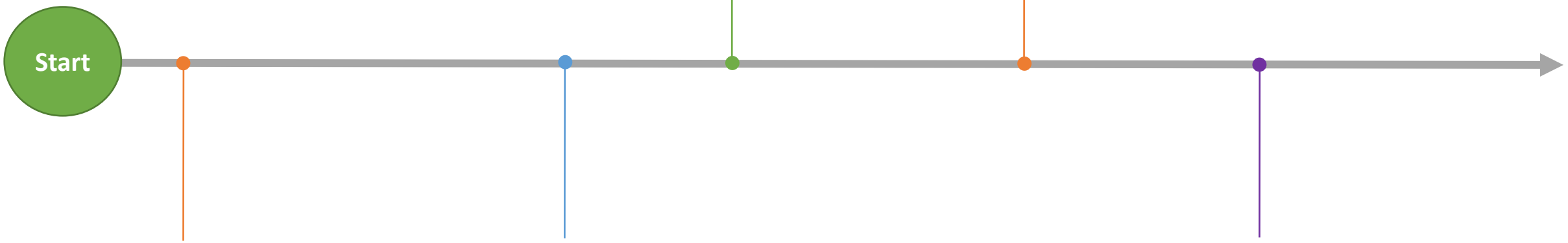
ASME MBE Standards Committee 2021



January 2021
Interconnectivity WG Formed

April 2021
MBE Standards Spring Meetings @ Virtual

May 2021
Release the first MBE Standard (Framework) for public comment

June 2021
Publish position paper on the boundaries and interfaces with the MBE standards scope

November 2021
MBE Standards Fall Meetings @ Virtual

ASME MBE is hosting bi-weekly WG and weekly SC one-hour virtual working sessions

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Spring 2021 Meetings

20—23 April 2021

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Spring 2021 Meetings Schedule

Eastern	Central	Tuesday 4/20/2021	Wednesday 4/21/2021	Thursday 4/22/2021	Friday 4/23/2021	Mountain	Pacific
10:00 AM	9:00 AM					8:00 AM	7:00 AM
10:10 AM	9:10 AM	MBE SC Open Session			Framework	8:10 AM	7:10 AM
11:00 AM	10:00 AM					10:00 AM	8:00 AM
11:10 AM	10:10 AM	Joint Working Group Session (Interconnectivity, MBSD, Framework)	Framework	Framework		9:10 AM	8:10 AM
12:00 PM	11:00 AM					10:00 AM	9:00 AM
12:10 PM	11:10 AM				Use Case & Model Based Stds Dev / Interconnectivity	10:10 AM	9:10 AM
1:00 PM	12:00 PM					11:00 AM	10:00 AM
1:10 PM	12:10 PM	Near Term	Use Case & Model Based Stds Dev	Use Case & Model Based Stds Dev		11:10 AM	10:10 AM
2:00 PM	1:00 PM					12:00 PM	11:00 AM
2:10 PM	1:10 PM				Joint Working Group Session (Interconnectivity, MBSD, Framework)	12:10 PM	11:10 AM
3:00 PM	2:00 PM					1:00 PM	12:00 PM
3:10 PM	2:10 PM		Interconnectivity	Interconnectivity		1:10 PM	12:10 PM
4:00 PM	3:00 PM					2:00 PM	1:00 PM
4:10 PM	3:10 PM			Near Term	MBE Standards Committee Open Session	2:10 PM	1:10 AM
5:00 PM	4:00 PM				virtual Happy Hour It's 5 O'clock on the east coast (BYOvB)	3:00 PM	2:00 AM
6:00 PM	5:00 PM					4:00 PM	3:00pm

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ASME MBE Recommendation Report

- *A Starting Point for MBE Standards Activities*
  - Developed by the ASME MBE Steering Group, which consisted of 8 existing ASME volunteers and 2 new members
  - Establishes direction, activities, priorities, and organizational structure of the ASME MBE Standards Committee and its subcommittees
  - Presents background and motivation for MBE
  - Provides methodology for developing MBE standards using a model-based approach
  - Outlines a roadmap for the MBE standards development process
  - Describes a marketing and adoption strategy for MBE

"MBE will transform industry by increasing productivity, quality, profitability, and types of products, and by reducing wasted effort, wasted time, non-value-added work, lost information, missed opportunities, and time to market."

Download:
go.asme.org/MBEreport

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How to Get Involved

- Complete the PAF and PF-1 forms. Send them to the ASME Staff Secretary, Fred Constantino (constantinof@asme.org).

- Then you will:
  - become a member of the MBE Subject Matter Expert Support Group;
  - be granted access to C&S Connect and the MBE Collaboration Site; and
  - be able to participate with Working Group once the above is complete. Contact the Working Group Leader to start contributing.

Join an ASME Standards & Certification Committee

Want to Learn More?

Fredric Constantino - MBE Standards Committee Staff Secretary

ASME S&C Project Engineering Advisor

E-mail: ConstantinoF@asme.org

Michelle Pagano – MBE Staff Support

ASME S&C Engineer

E-mail: PaganoM@asme.org

ASME MBE Standards Committee C&S Connect Page

https://cstools.asme.org/csconnect/CommitteePages.cfm?Committee=102216151

ASME MBE Redmine Collaboration Site

https://projects.mbe.institute/projects/asme-mbe-public-page

Scan Me: Collaboration Site

BACKUP

Working Groups Overview and Status

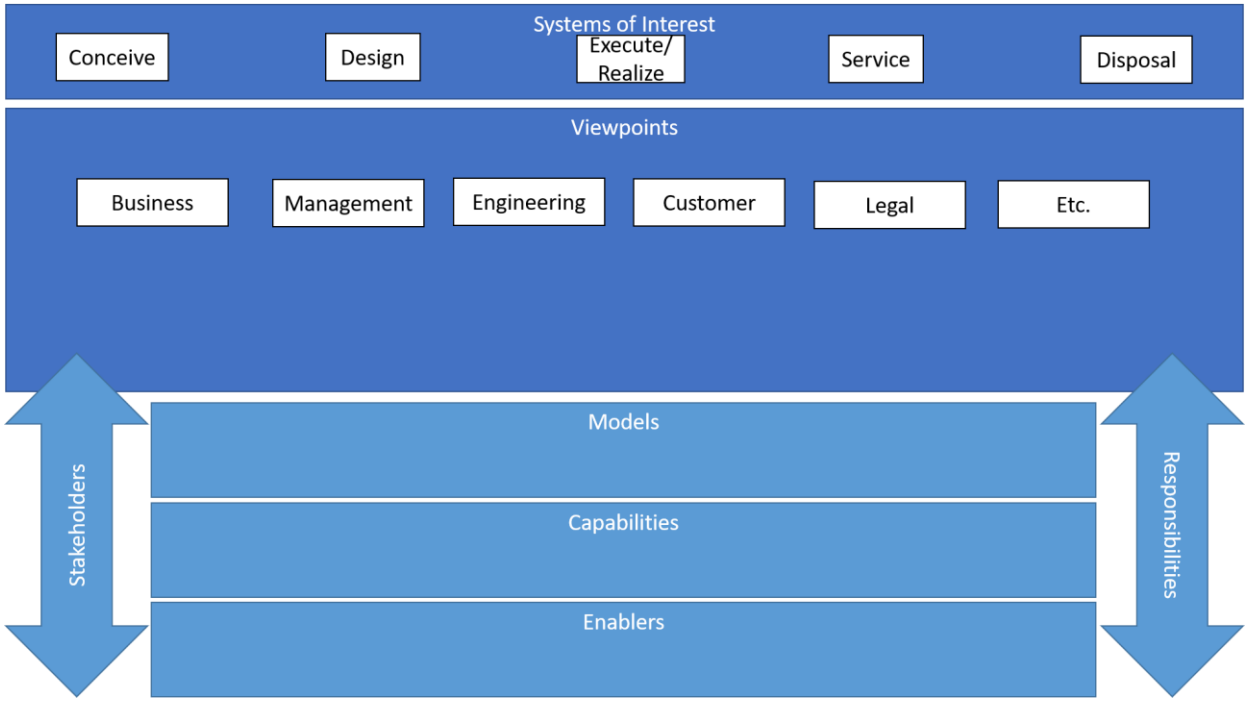
Framework Working Group

Leader: Tom Hedberg thedberg@umd.edu

Charter: Define the concept of a Model-Based Enterprise by providing a high-level structural definition

Status

- Surveyed existing Concept of Operations, Frameworks, Taxonomies, and more
- Created version 1 of a baseline framework



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Interconnectivity Working Group

Leader: Brandon Sapp brandon.us@gmail.com

Charter: The MBE Interconnectivity Working Group is to define the connections and exchange of information between enterprise domains and process activities

Status

- Working group formed in JAN 2021
- Kick-off meeting held 4 FEB 2021

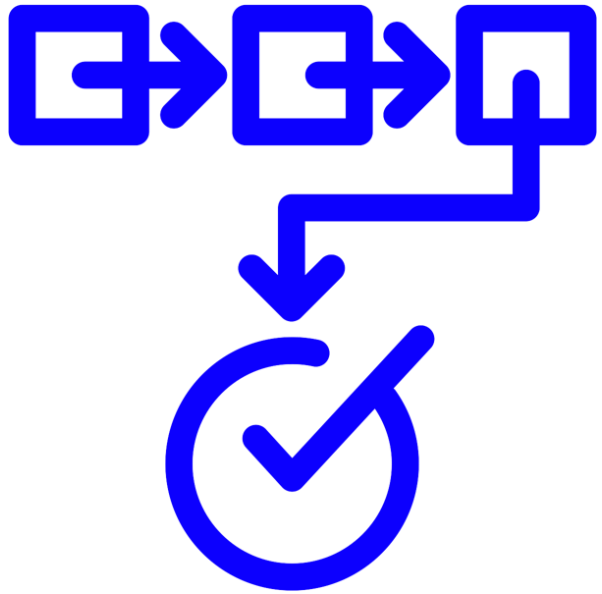
Near Term Strategy Working Group

Leader: Jennifer Herron jennifer@action-engineering.com

Charter: Identifies challenges, gaps, and problems inhibiting understanding and adoption of model-based methods.

Status

- Focused on two-year timeframe
- Meeting during the fall meetings to establish tactical plans to address strategic needs



UCMBSD Working Group

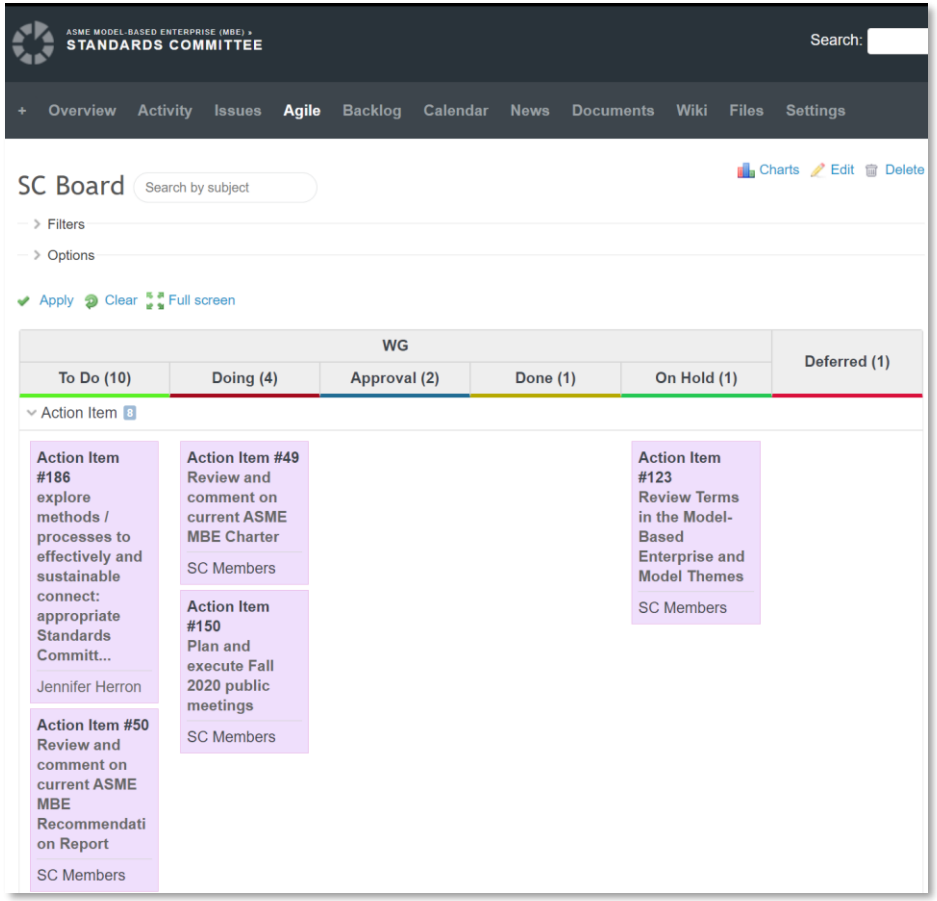
Use Cases and Model-Based Standards Development (MBSD) Methodology

Leader: Will Sobel, will@govimana.com

Charter: Define methods that the MBE Standards Committee will use to develop use cases and model-based standards

Status

- Developed, Sent, Analyzed a Request for Information (RFI) survey to solicit stakeholder input
- Baseline trained working group in ontology theory
- Rolled out an Agile process with-in Redming to release standards
- Defined initial ways to collaborate on those standards
- Created a draft of a reference modeling methodology



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