ENOLA

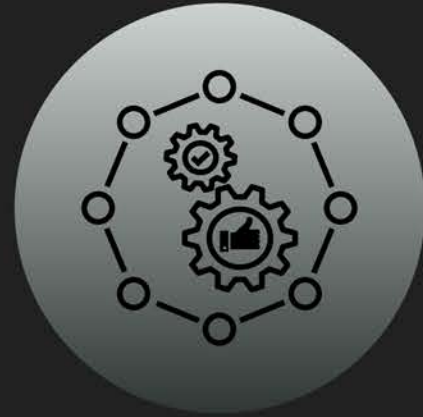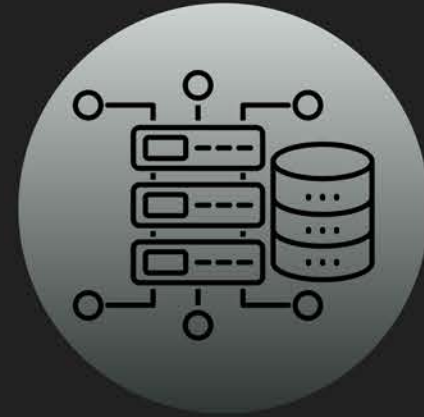## Introduction to MBSE

Date: March 13, 2024
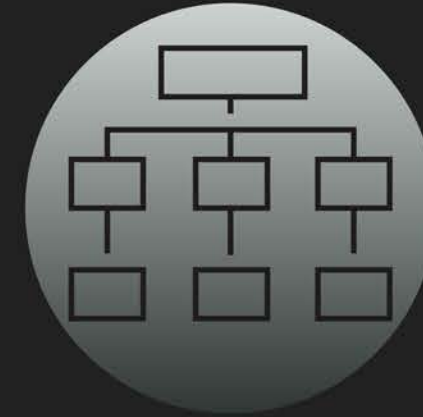Presented by: Aleczander Jackson

WHAT IS MBSE?

MODEL BASED SYSTEMS ENGINEERING (MBSE) IS THE USE OF A MODEL COMPOSED OF DATA AND DIAGRAMS TO PRODUCE SYSTEMS ENGINEERING ARTIFACTS.

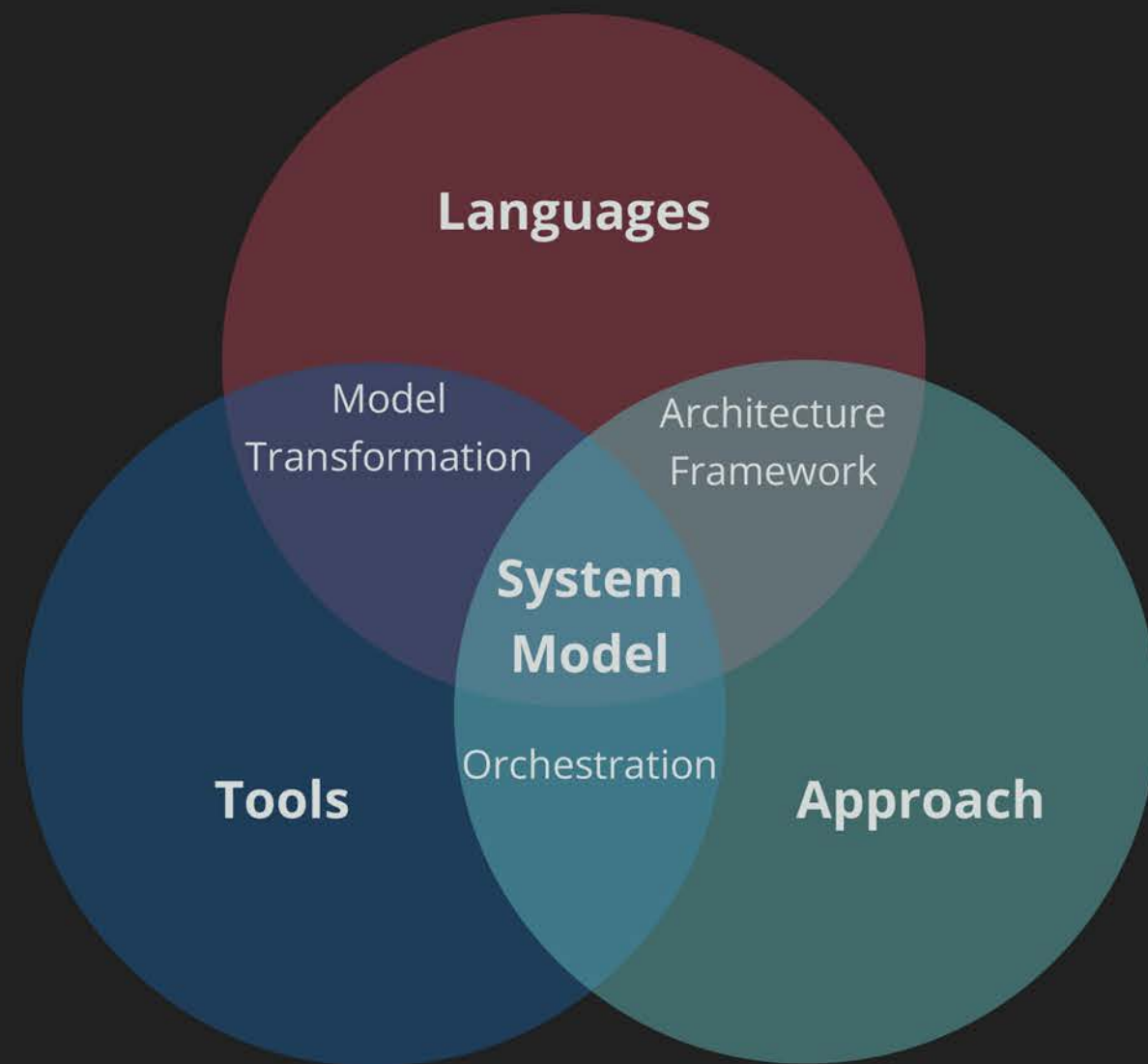A MODEL IS AN ABSTRACT REPRESENTATION OF A THING, AND IN THE WORLD OF MBSE IS SYSNONYMOUS WITH A DATABASE.

A DIAGRAM IS A VIEW INTO THE MODEL, A PERSPECTIVE OF ONE ASPECT OF A GIVEN SYSTEM.

DESIGN / ANALYSIS — APPLICATIONS — FOUNDATIONS

Pillars of MBSE

The pillars of MBSE are:

Tool

Within MBSE, one must use a tool to house the model.
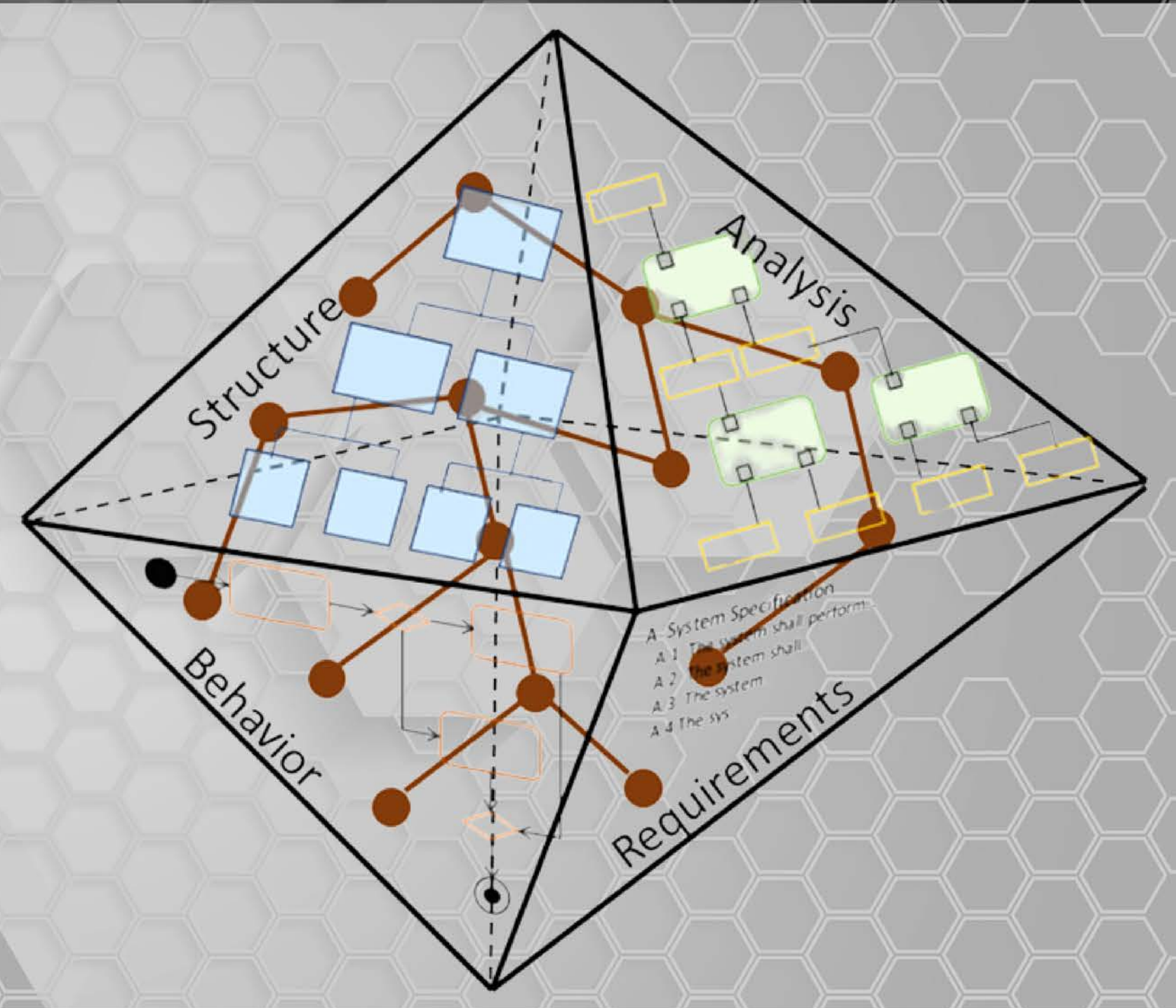
Language

One must also select a language to use to specify the system's architecture.

Approach

To provide consistency, one must select and standardize an approach that best meets the needs of the organization.

Views within MBSE

- Different languages provide different diagrams.
- Different tools support different languages.
- Some tools support certain methods over others.
- The only topic generally consistent in the definition of the system architecture.
- System architecture is generally divided into four main pillars:
  - Structure
  - Behavior
  - Requirements
  - Analysis

MBSE-DAY AGENDA

Title	Presenter	Time
Transforming AADL Models into SysML 2.0: Insights and Recommendations	Kyle Litwin (Collins Aerospace)	9:00 – 9:30
Coffee Break		9:30 – 10:00
Open Plenary & Keynotes - E220 BCDE Hangar		10:00 – 10:20
SAE Awards - E220 BCDE Hangar		
Keynote: Boeing Commercial Airplanes Product Development Update		10:20 – 11:00
Keynote: Delivering on the Promise of Autonomous Flight		11:00 – 11:45
GoAero Prize with Gwen Lighter, CEO, GoAero and GoFly		11:45 – 12:00
Networking Lunch in Exhibit Hall		12:00 – 1:00
MBSE work on the NASA High Density Vertiplex Subproject	Demetrios Katsaduros (NASA)	1:00 – 1:30
SWISS: a Model Based Approach to the Standards Ecosystem	Andrew Bank (XSB/SWISS)	1:30 – 2:00
MBSE Standard Incorporation	Paul Watson (Belcan)	2:30 - 3:00
Coffee Break		3:00 – 3:30
MBSE Panel	Jim Murphy, Kyle Litwin, Andrew Bank, Paul Watson	3:30 – 5:00
NASCAR Hall of Fame Networking Event		6:30 – 9:30

GLIMPSE AT TOMORROW

Title	Presenter	Time
Opening Plenary & Keynotes: Bethany Davis, JetZero		1000 – 1100
Interactive Panel Discussion: Modeling and Simulation for Certification		1100 – 1200
Appreciation Lunch - Recognizing Awardees, Fellows, Technical Program Participants, Committees, Volunteers. (Ticket purchase required: $10.)		1200 – 1300
Digitizing a Standard with MBSE Hands-On Workshop	Aleczander Jackson (Enola)	1300 - 1700