DevSecOps for Model Based Systems Engineering

GLOBAL PRODUCT DATA
INTEROPERABILITY
SUMMIT
2021

Virtual Sessions

Digital Engineering is an integrated approach that uses authoritative sources of system data and models as a continuum across disciplines to support lifecycle activities from concept through disposal
– AFRL, https://www.wpafb.af.mil/

*And while DevSecOps software development has been a major acquisition energizer, we can go **much, much further** in radically accelerating other lifecycle functions via automation.*
– Dr. Will Roper, "Bending the Spoon"

We need to….

- Blaze the trail for bringing disciplines onto the Digital Thread

- By demonstrating automated CDRL generation from our Authoritative Sources of Truth

- Automatically maintaining the integrations between our Authoritative Sources of Truth that define the Digital Thread

- Doing all of this faster and with significantly less rework than traditional approaches

And we will by implementing

DevSecOps for MBSE with a CDRL Factory

J. Simmons, Ph.D.
Systems Engineering Manager, NGSP Launch Vehicles

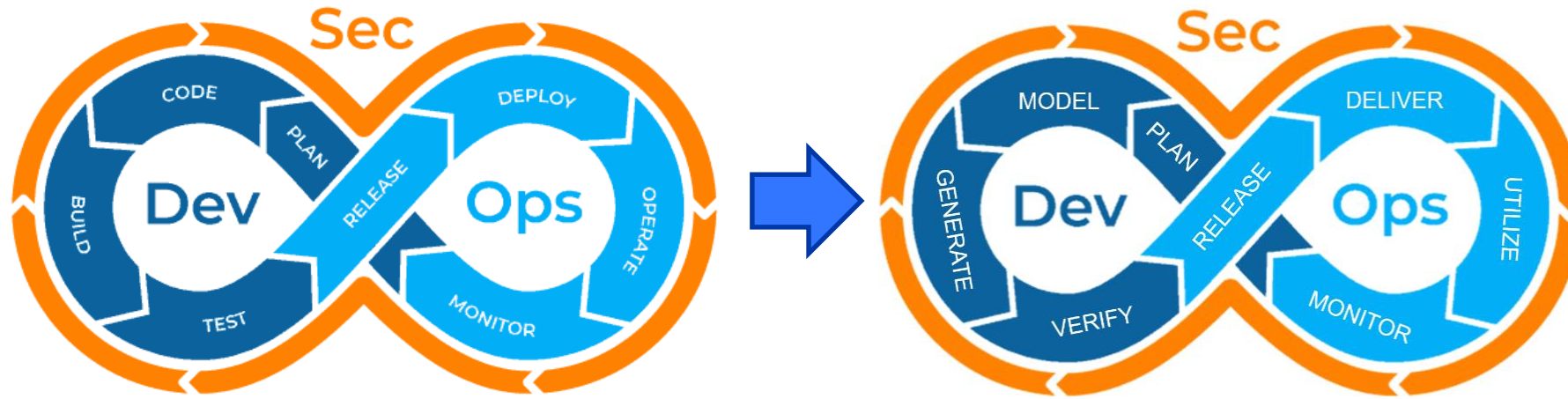### 15 years in Digital/Systems Engineering

- Ph.D. in Space Systems Engineering from the Air Force Institute of Technology
- M&S automation/integration for MDAO
- Implementing Digital Threads between MDAO & MBSE
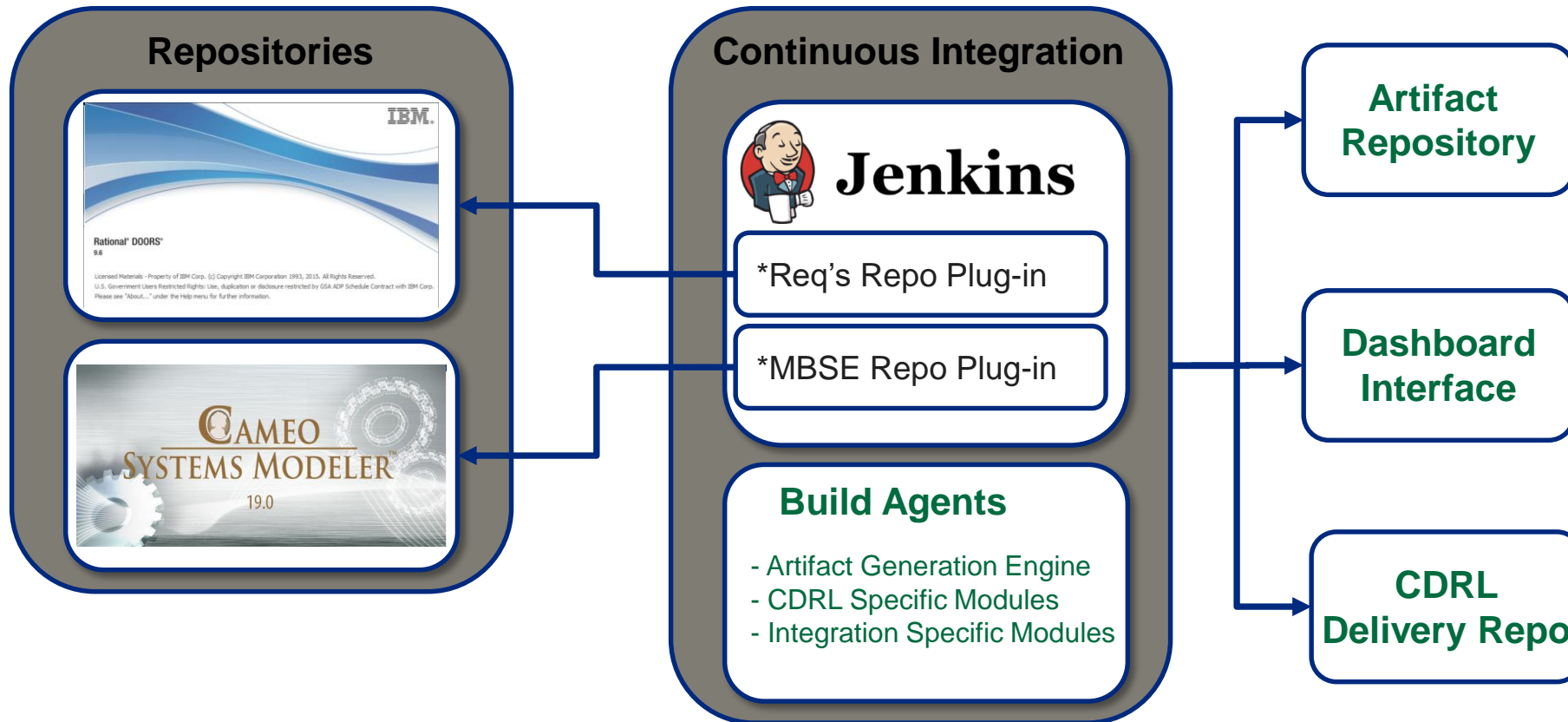
Supported all corners of the Aerospace Industry

- Govt: DoD | Air Force | Navy | Army | NASA
- Cont: NG | Lockheed | Boeing | Raytheon | SAIC
- Labs: JPL | APL | SNL

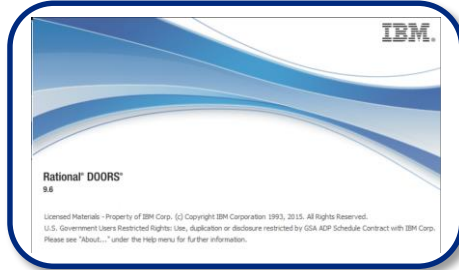# What is DevSecOps for MBSE?

A CDRL Factory

Repositories

Continuous Integration

Req's Repo Plug-in

MBSE Repo Plug-in

Build Agents

- Artifact Generation Engine
- CDRL Specific Modules
- Integration Specific Modules

Artifact Repository

Dashboard Interface

CDRL Delivery Repo

Integrations Define the Digital Thread

Current COTS Capabilities

System Spec Pushed to Cameo
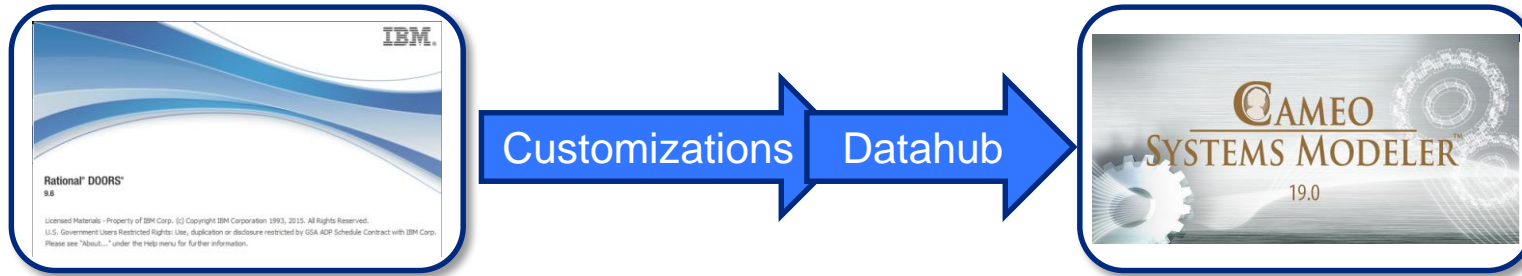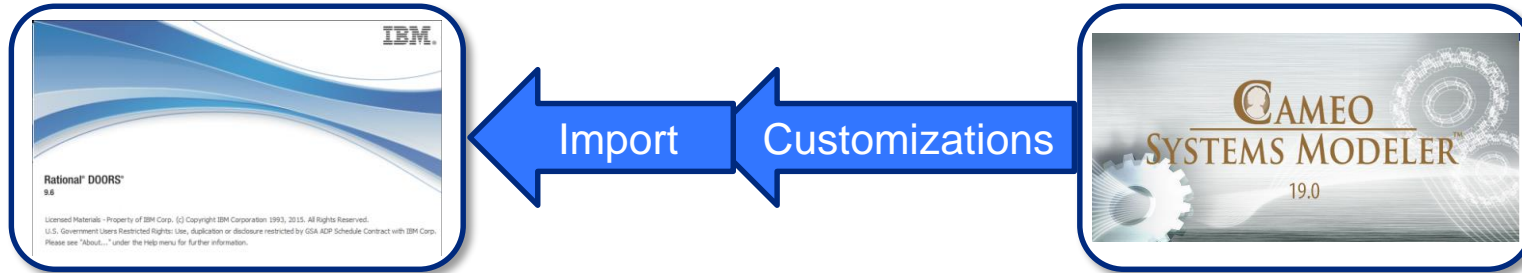

Datahub

Derived Spec Pushed to DOORS

Datahub
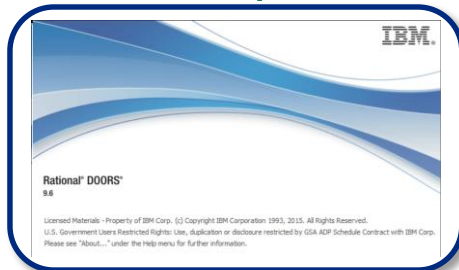
Integrations Define the Digital Thread

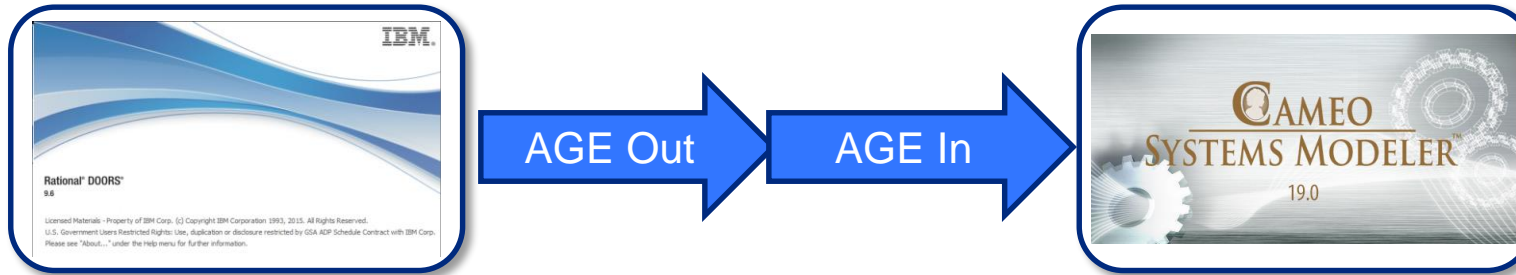Traditional Program Capabilities

System Spec Pushed to Cameo

Customizations   Datahub

Derived Spec Pushed to DOORS
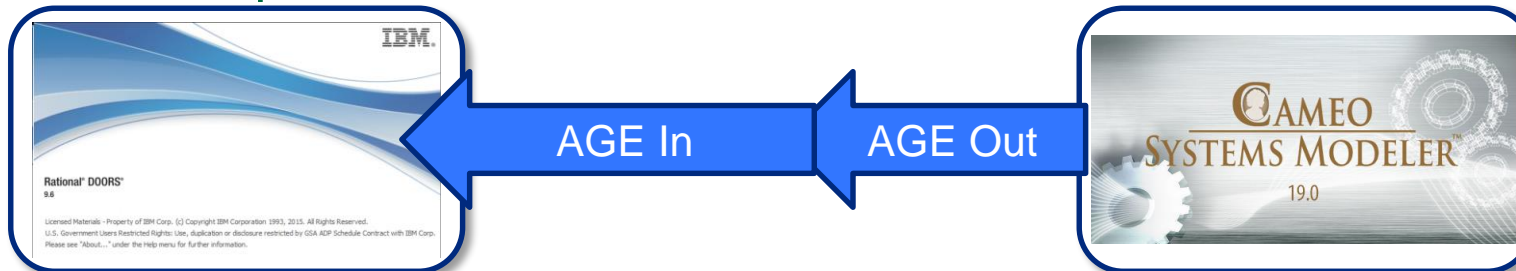

Import   Customizations

Integrations Define the Digital Thread

Automating Digital Thread Integration

System Spec Pushed to Cameo

AGE Out → AGE In

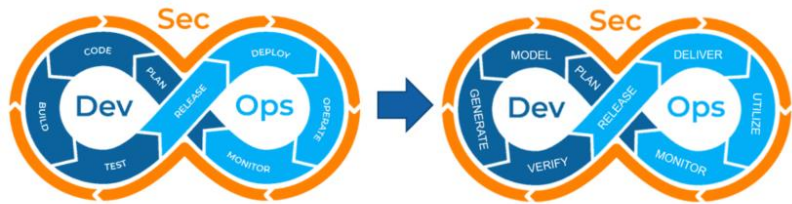Derived Spec Pushed to DOORS

AGE In ← AGE Out
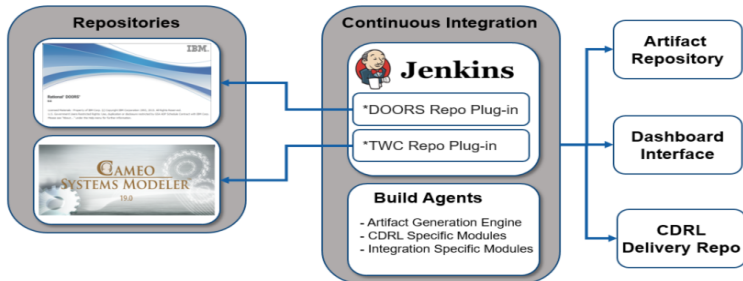
Delivery of CDRL Artifacts from ASoTs
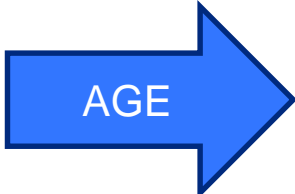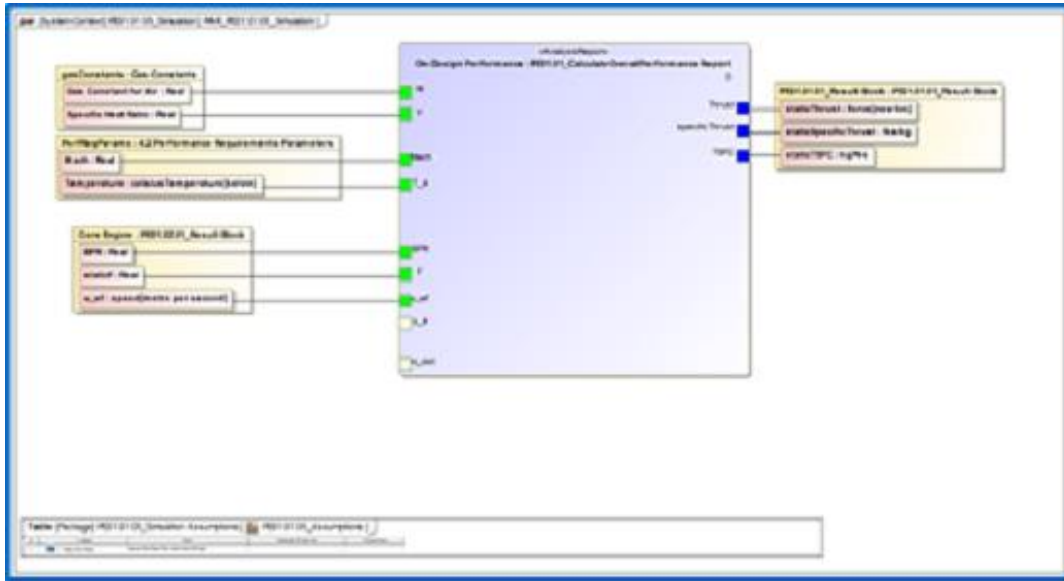
Blazing the Trail for Other Disciplines

1. Identify how to apply DevSecOps to discipline

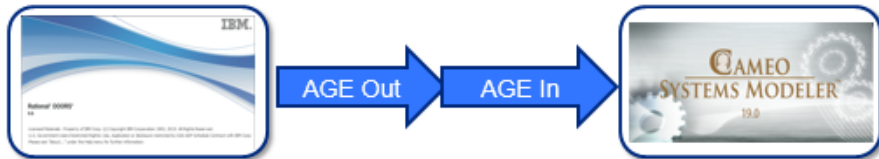2. Develop Discipline-Factory MVP to enable DevSecOps lifecycle

3. Extend capabilities to support discipline needs on program

We are laying the ground work to repeat this process with Modeling & Simulation.

What do you think?

Going much, much further in Digital Engineering…

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