



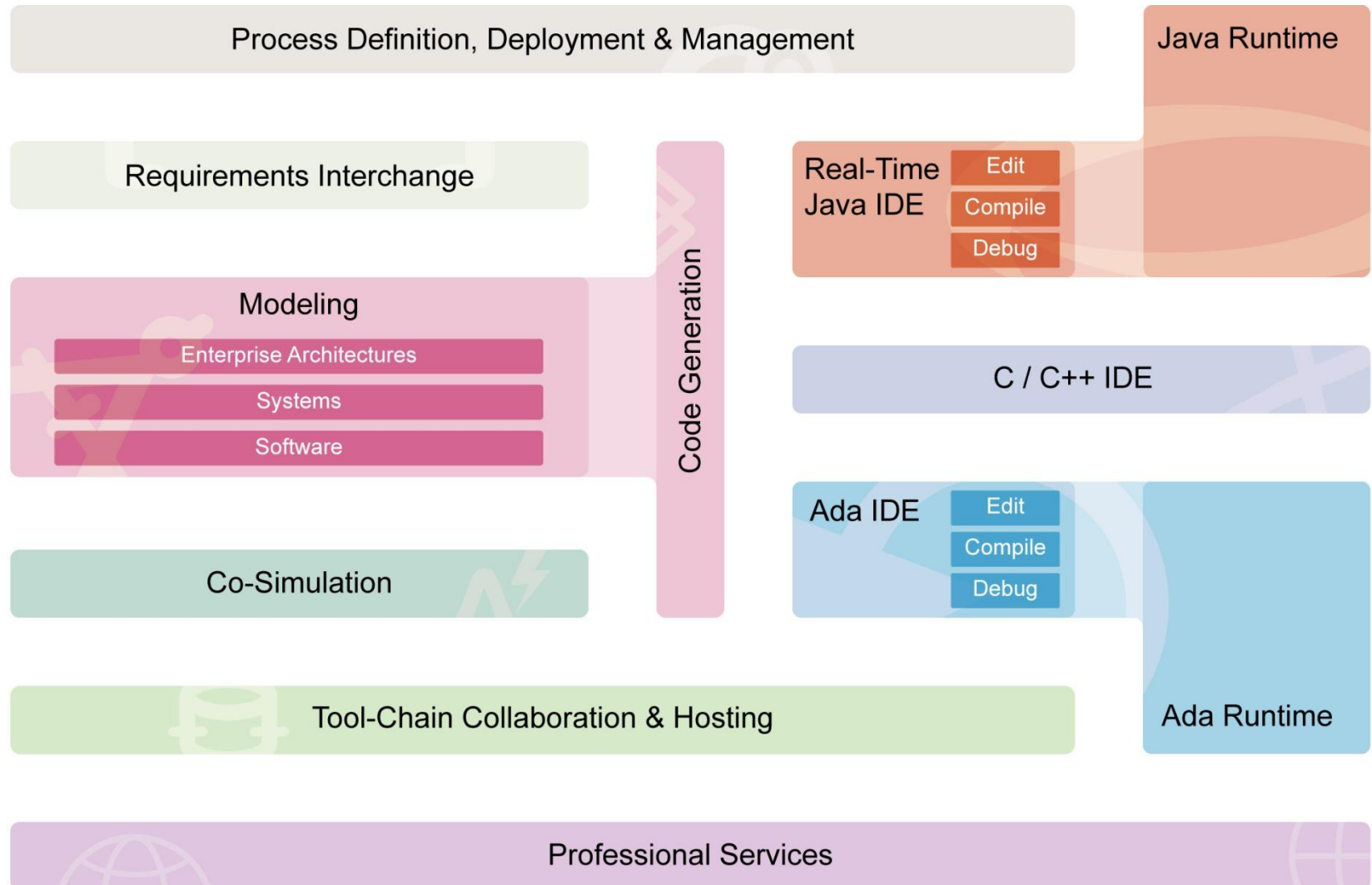
Atego MBSE Frontiers

James Hummell, Principal Engineer

Overview

- MBSE/SysML advancements and challenges
- Benefits and current issues of using MBSE/SysML
- Exciting MBSE/SysML opportunities

Atego Products



Atego Products

 **ategoProcessDirector™**

 **ategoExerpt™**

 **artisanStudio®**

 **artisanStudio™
Reviewer**

 **artisanStudioUno™**

 **ategoAce™**

 **ategoWorkbench™**

 **ategoGlobalServices®**

artisanStudio™
Automatic Code Synchronizer

 **aonixPerc®
Ultra**

 **aonixPerc®
Pico**

 **aonixPerc®
UltraSMP**

 **aonixPerc®
Raven**

 **aonixPerc®**

 **blueriverX32^{plus}**

 **aonixObjectAda®**

 **aonixObjectAda®
Real-Time**

 **aonixObjectAda®
Raven**

MBSE/SysML advancements and challenges

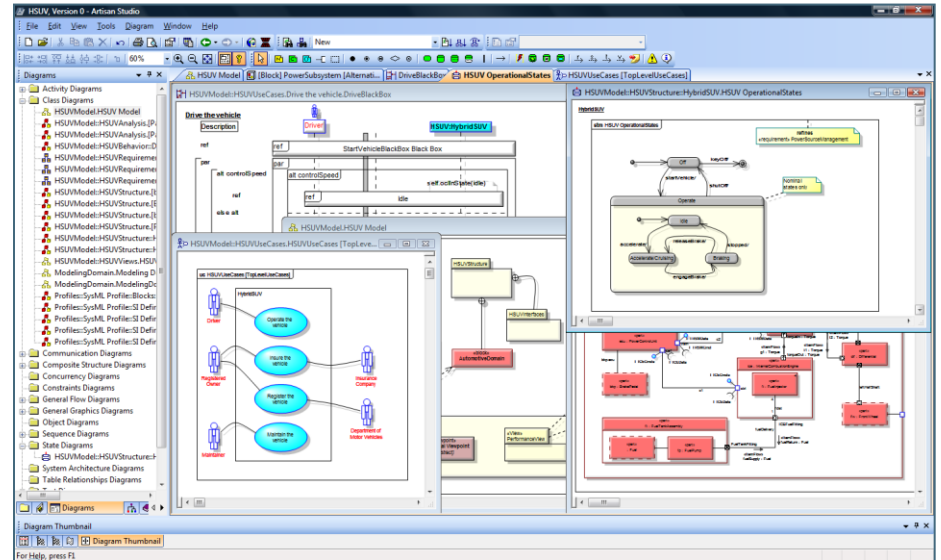
- What are:
 - a. The main MBSE/SysML advances Atego has seen?
 - SysML has a wider acceptance in industry
 - Model execution
 - b. The main MBSE/SysML challenges customers have faced?
 - Changing the minds of the current engineering staff.
 - Cost of start up.

Benefits and current issues of using MBSE/SysML

- What are the key MBSE/SysML aspects you see with Atego's customers today regarding:
- Issues the customers are having? [with today's SysML/MBSE technology base as a whole]
 - Language usage and understanding
- Benefits they are seeing?
 - Collaboration
 - Document generation
 - Automated design review

Modeling - Analysis and Design

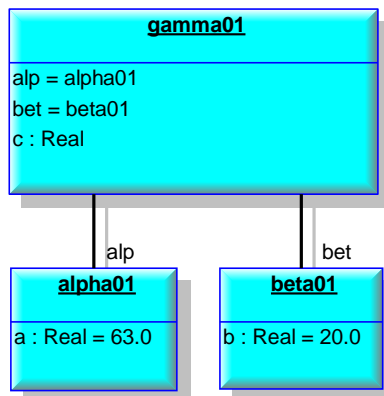
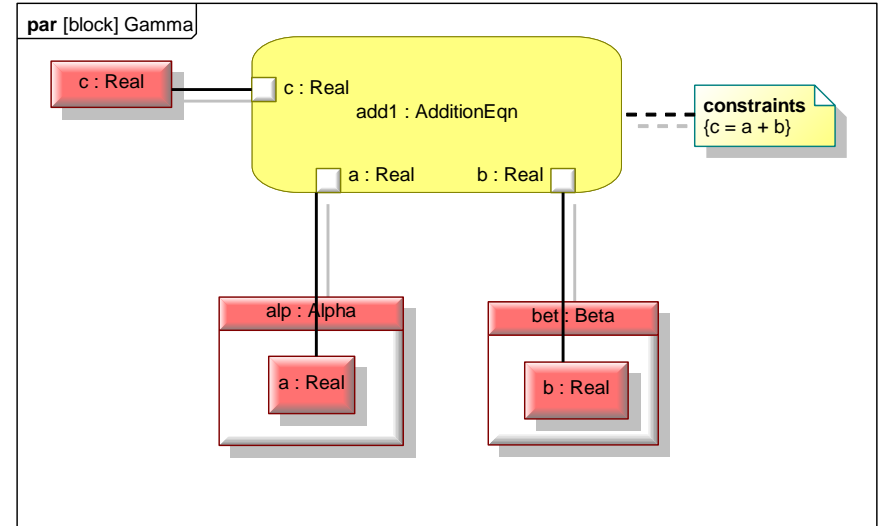
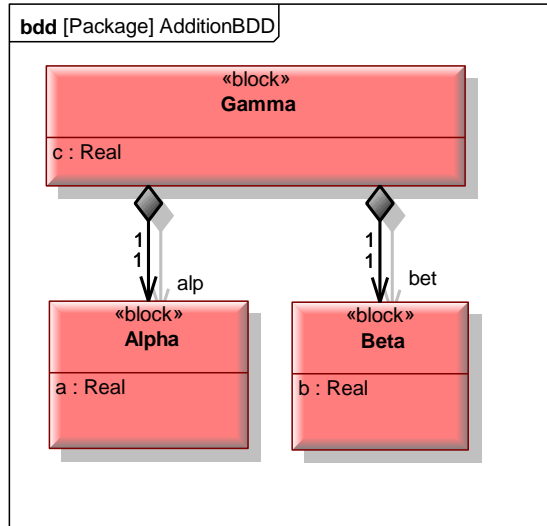
- Scalable OMG UML, SysML, UPDM (DoDAF/MODAF) Modeling
- Repository Collaboration
- Built-In Traceability
- Document Generation
- Automated Design Review
- Code Generation & Sync
C, C++, C#, Java, Ada



- Improved Quality through Early Design Review and Consistency
- Bring Systems to Market Faster with Parallel Design Effort
- Cost Reductions from Design and Development Automation

Model Execution/Analysis

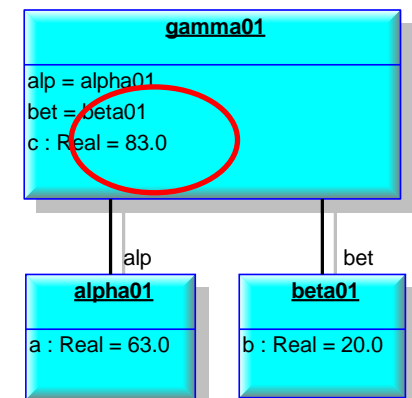
- bdd
- par
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Artisan Studio ParaSolver 7.2 R1 - gamma01

Name	Qualified Name	Type	Causality	Value
Gamma	Addition::AdditionInstance01.gamma01	Gamma		
c		REAL	target	83
alp	Addition::AdditionInstance01.gamma01.alpha01	Alpha		
a		REAL	given	63
bet	Addition::AdditionInstance01.gamma01.beta01	Beta		
b		REAL	given	20

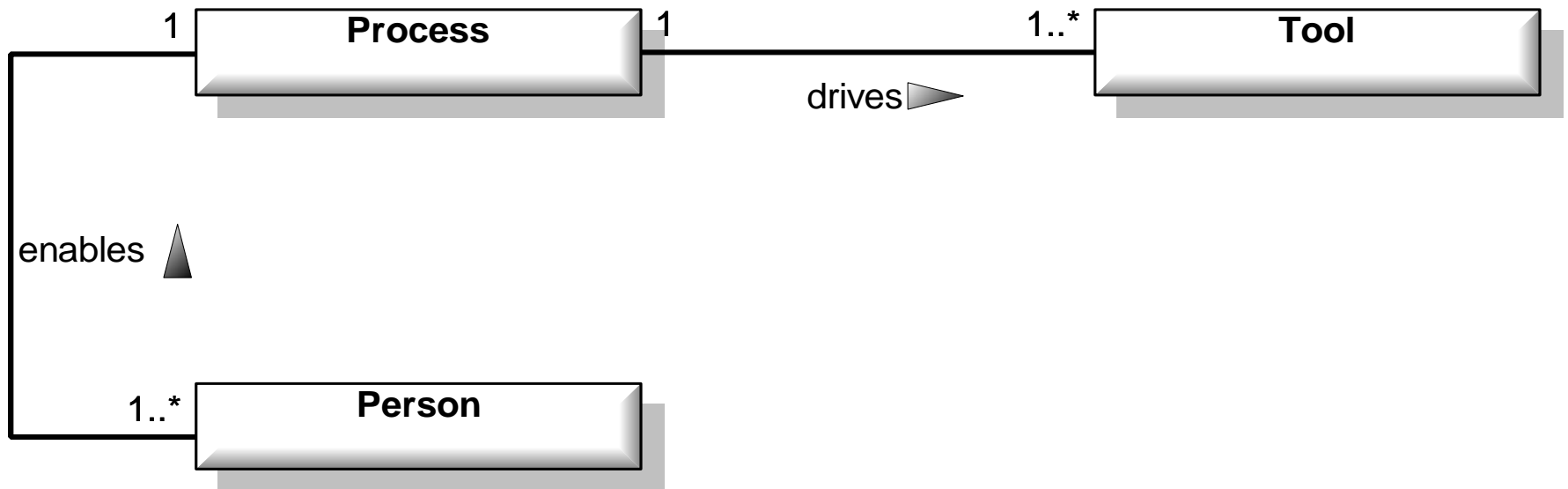
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Exciting MBSE/SysML opportunities

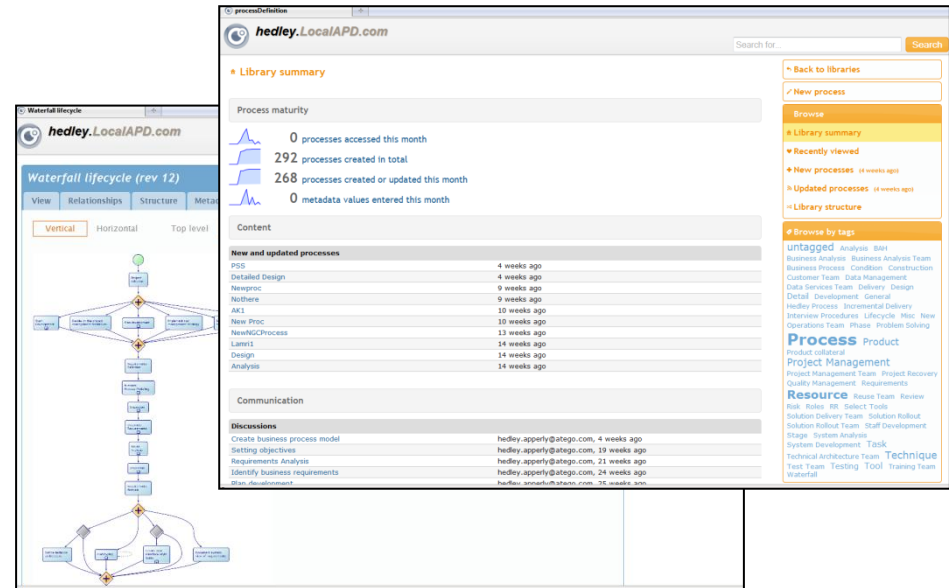
- What exciting MBSE/SysML opportunities do you foresee over the next several years?

Three fundamental concepts



Process Authoring and Rollout

- Process Inventory in the Box
- Process Design / Authoring Tool
- Agile Process Wizard
 - Project specific process instantiation / tailoring
- MS Project Plan Generation
- Process Deployment
 - To Do Home Pages
 - Automatic Email Notification



The screenshot displays the Atego Process Director web interface. On the left, a process diagram titled 'Waterfall lifecycle (rev 12)' is shown in a 'Vertical' view. The main area features a 'Library summary' with statistics: 0 processes accessed this month, 292 processes created in total, 268 processes created or updated this month, and 0 metadata values entered this month. Below this is a table of 'New and updated processes' with columns for process name and age. A 'Communication' section lists recent messages with sender and recipient information. On the right, a sidebar contains navigation options like 'Back to libraries', 'New process', and 'Browse', along with a 'Process by tags' section listing various process categories.

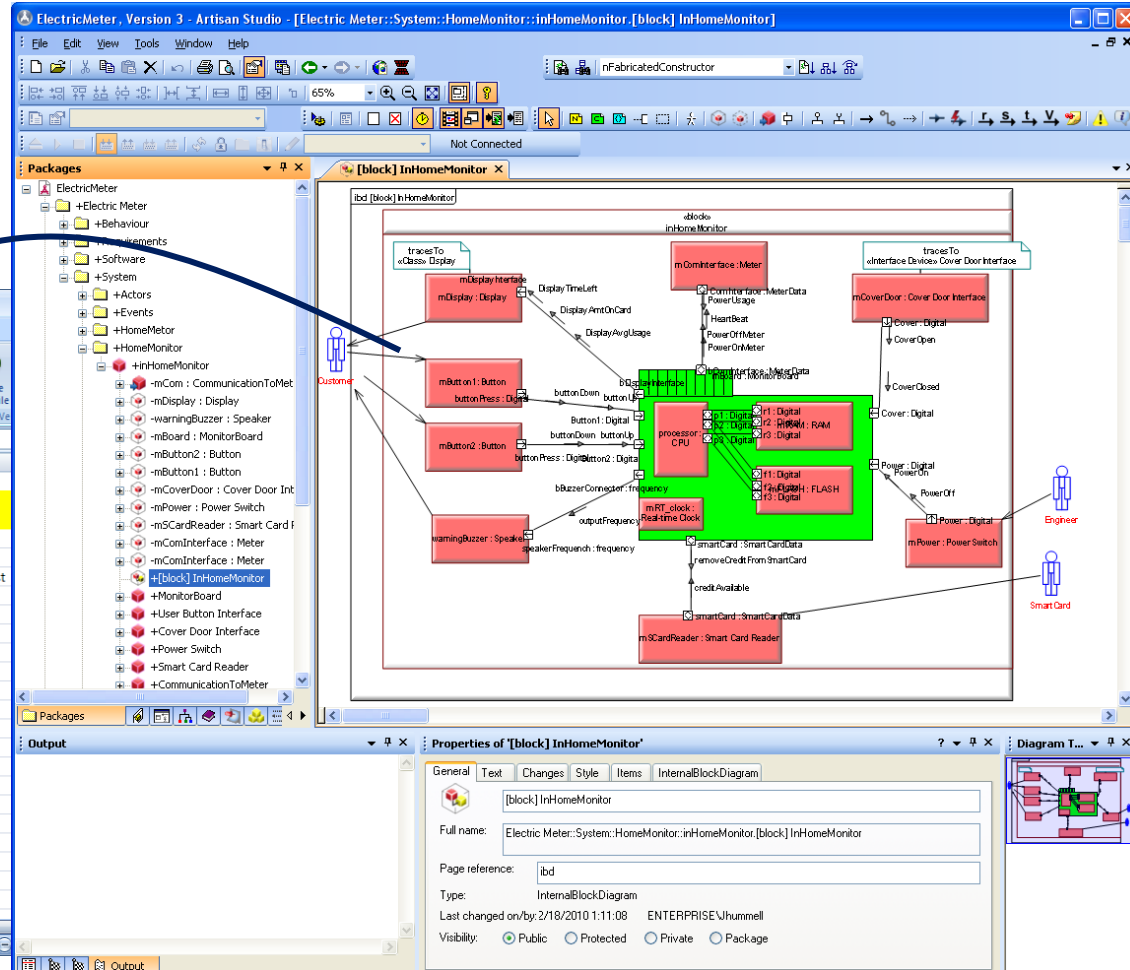
- Merge Industry Best Practices and your Experience to improve Quality
- Achieve the Promised Productivity Improvements from your Processes
- Reduce Costs of Process Definition and Rollout

Data Mining/Data Analysis

- Generate traditional Systems documentation from modeling information

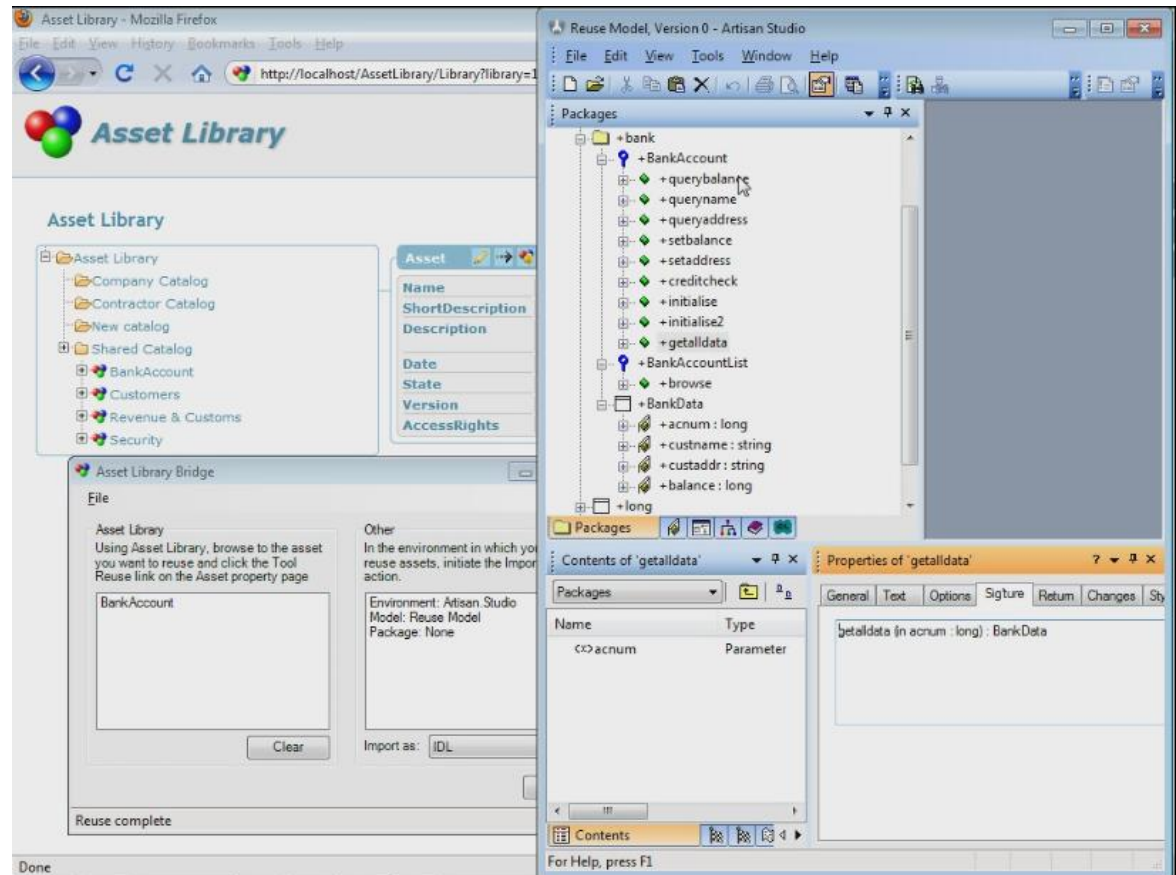
Book1 - Microsoft Excel

Interface Name	Source	Destination	Interface Type
PowerOutput	APU	Controller	24
PowerOutput	APU	Controller	testFlow
PowerOutput	Controller	APU	wrongDirectionTest
FlowPort1	AirFrameWiring	Controller	testV
PowerOutput	APU	AvonicsDisplay	24
ARINC	Controller	AvonicsDisplay	FADEC1Status
VoltageAngle	PLA	Controller	0-24
MissionData	C&DH	Comms	DownlinkData
C2	C&DH	ElectricalPowerSystem	PSCmd
C2	ElectricalPowerSystem	C&DH	PSTIm
C2	C&DH	Comms	CommsCmd
C2	Comms	C&DH	CommsTIm
TT&C_Internal	Comms	C&DH	CmdInternal
TT&C_Internal	C&DH	Comms	TImInternal
C2	C&DH	Sensor	SensorCmd
C2	Sensor	C&DH	SensorTIm
TT&C_Internal	C&DH	ThermalControl	ItemFlow1
TT&C_External	Spacecraft11	Comms	CmdExternal
TT&C_External	Comms	Spacecraft11	TImExternal
C2	C&DH	GNC	GNCCmd
C2	C&DH	C&DH	CmdTIm



Asset Library

- Asset Library is an essential tool for enabling reuse
- Ability to build a reusable library of components to keep all systems data for future systems development.



Further Information

- To contact the presenter:

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- For more on training, webinars, tools and professional services:

www.Atego.com

- To download an evaluation of Artisan Studio:

www.atego.com/download-center/product/artisan-studio

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