MDSD 2.0

By Etienne Juliot
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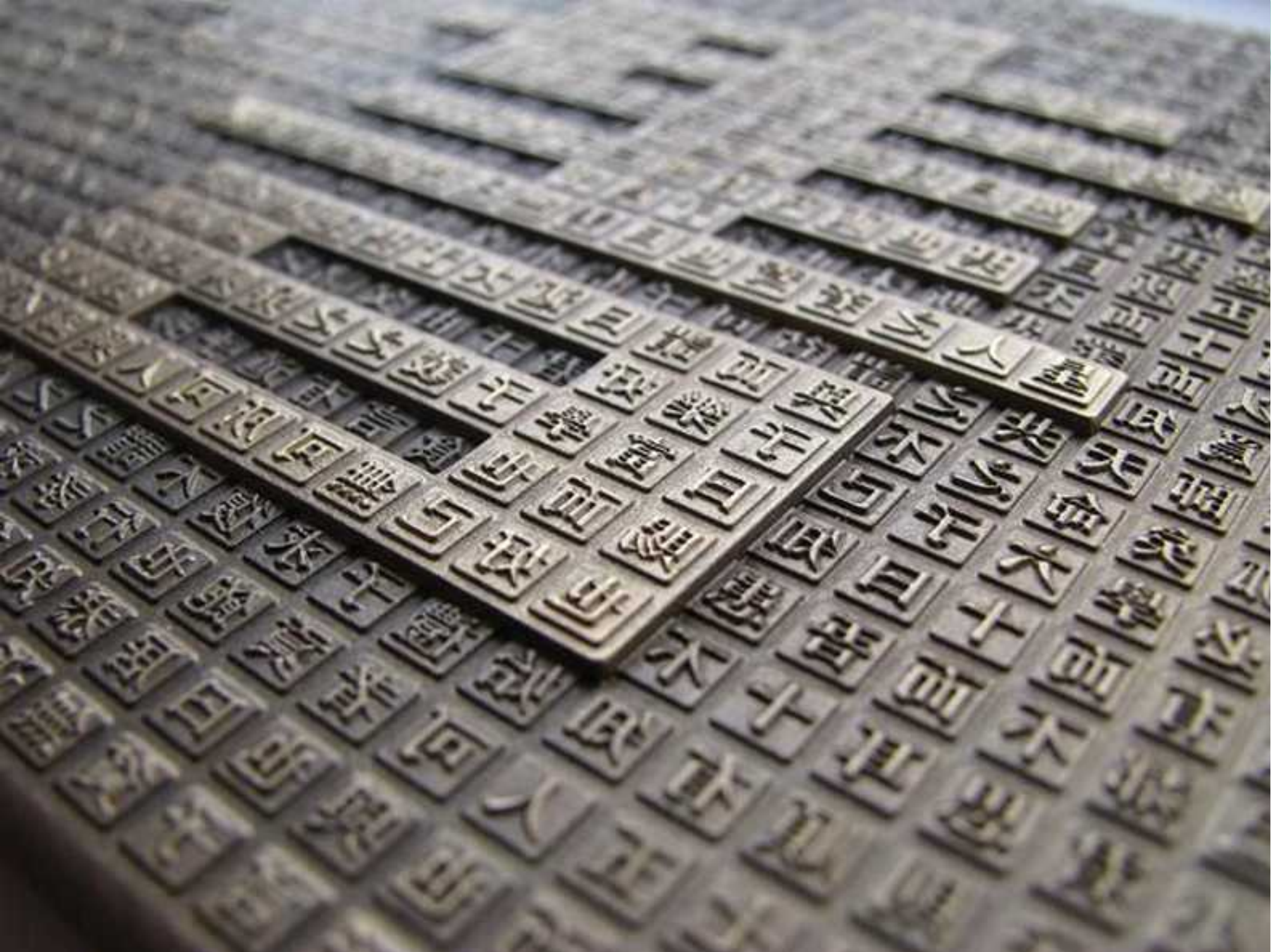
#ejuliot


Greatest
Innovations
CHANGES
are General Purpose
Infrastructures




Models

UML

BPMN

BPEL

SYSML

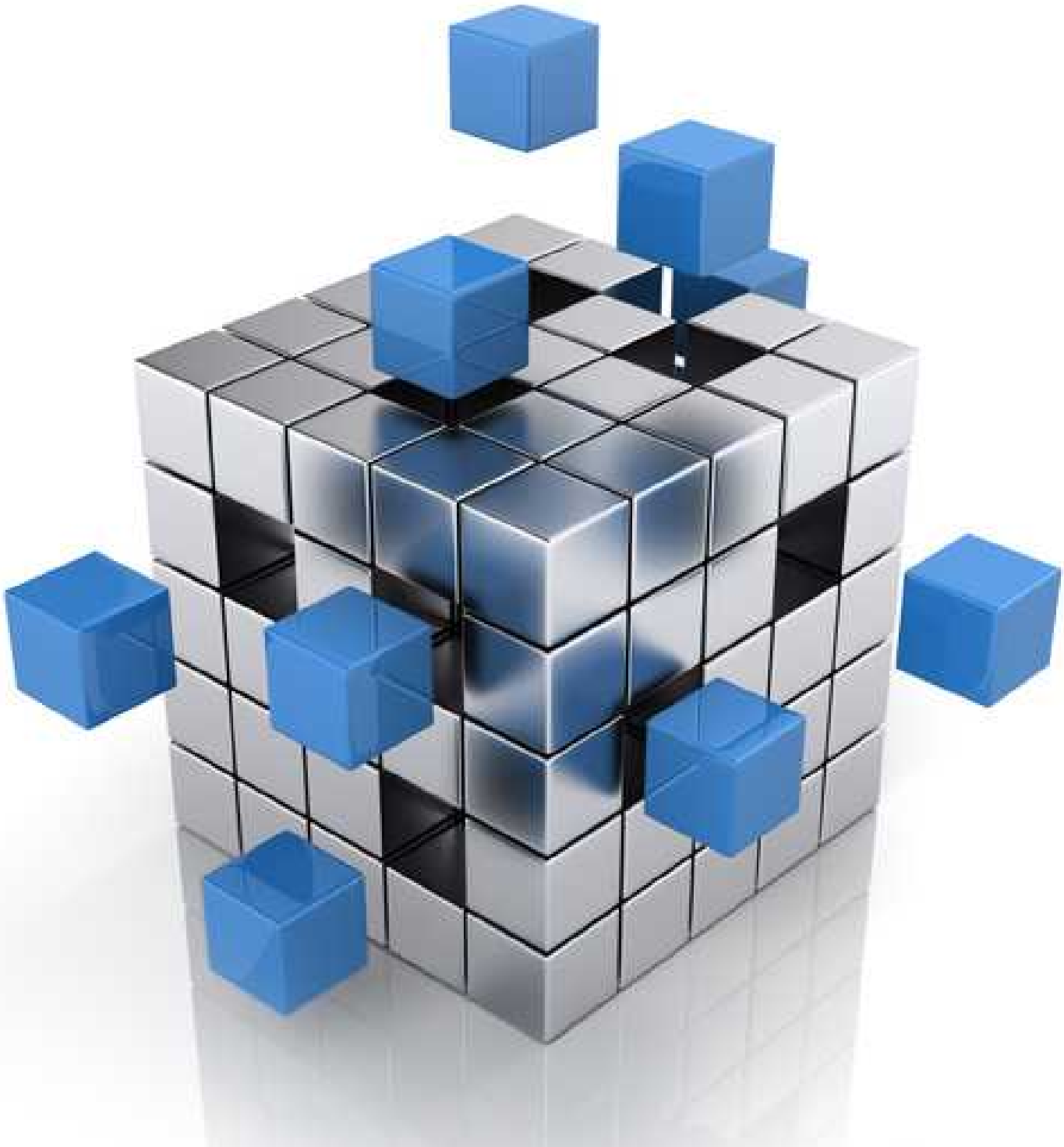
SCA

Autosar

SADT

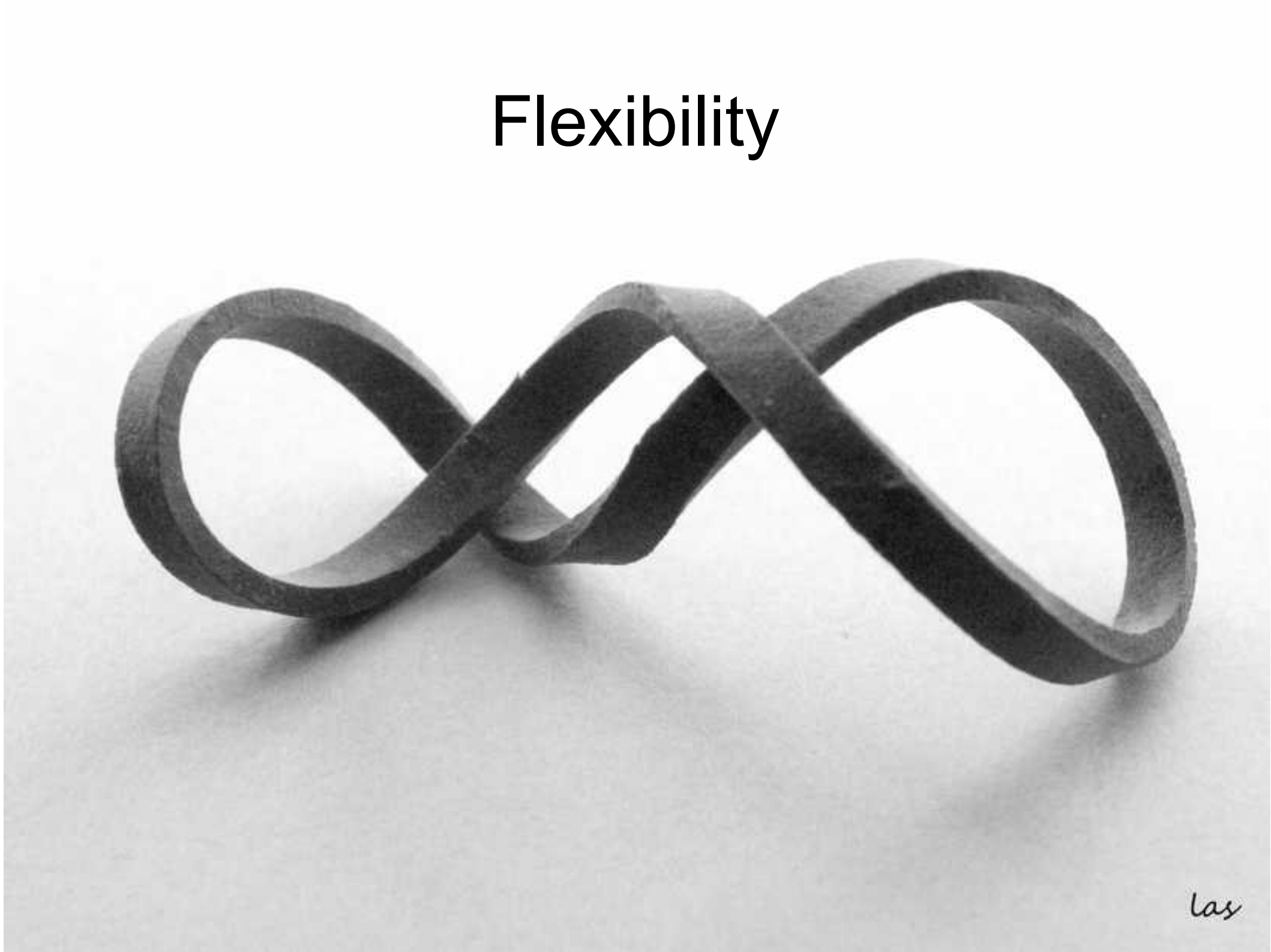
STOOD

StateChart

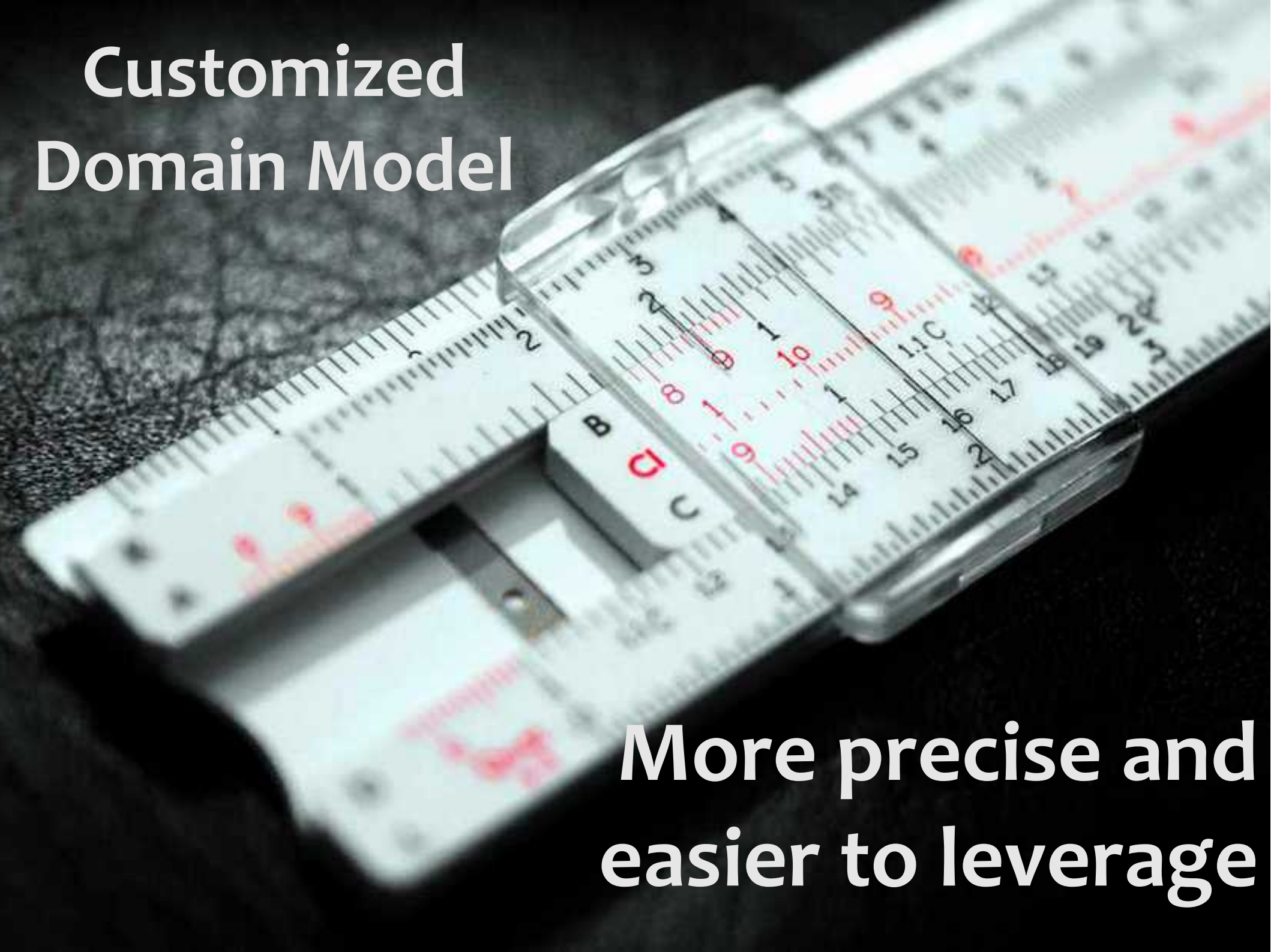


Diversity

Flexibility




Tools which create Tools


Customized
Domain Model
More precise and
easier to leverage


Customized
Code Generators
More efficient and
easier to maintain

Customized Visual Editors

More understandable

Communication Means

Commands

Situation

Tactical Command & Control System

Build Search Strategy

Search Zone

Manage Situation

Routing Data

Communicate with Ships

Interact with Ships on zone to find ship in distress

Search Request

Ship Position

Aircraft Position

Report Data

Report Data

Build Mission Report

Navigation & Avionics

Radar Tracks

Radar Image

FLIR Image

ARINC 429

Ship Position

Radar Data

Manage Sensors

Drive Navigation

Route

Nav Data

Determine Position and steer Aircraft

Search Flight Plan

Deliver Radar situation

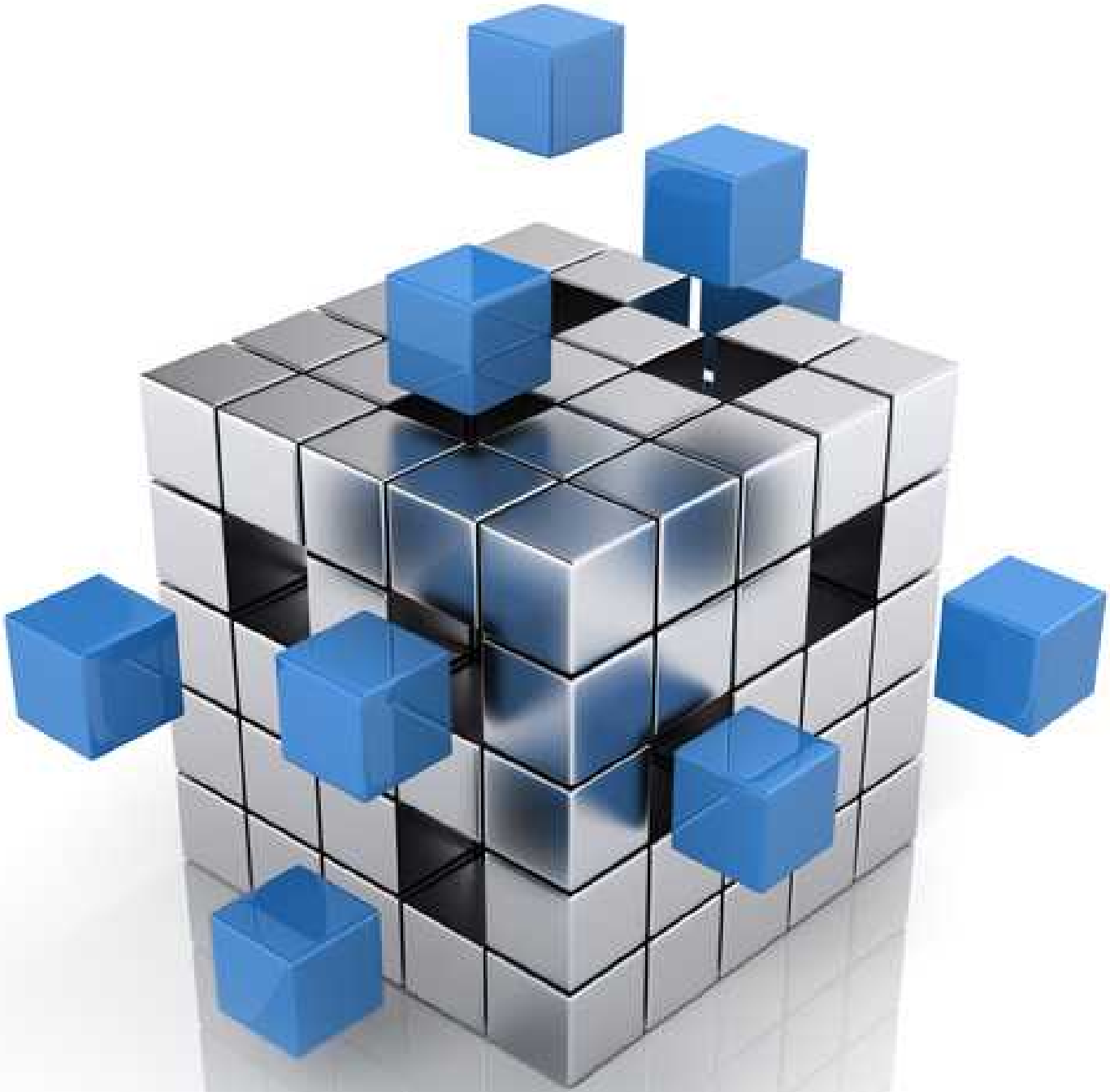
FLIR Images

Deliver FLIR images

It is a steak

It is a sausage

Viewpoint



MDSD 2.0

Diversity ?

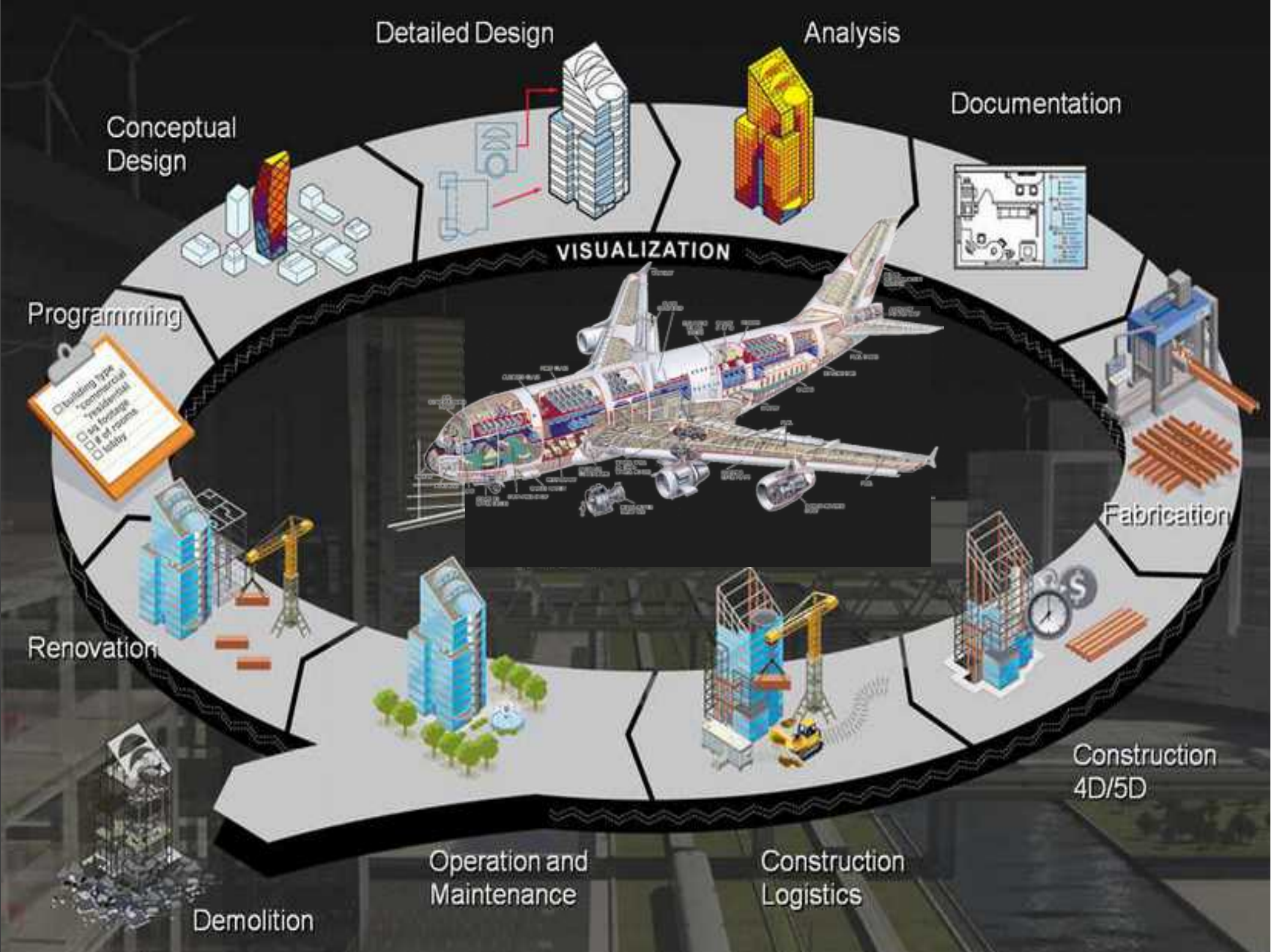

collaboration
is everything


open source
Acceleo
Sirius
CDO
emf
EMFCompare
eclipse

Sirius

System Engineering

eclipse.org/sirius

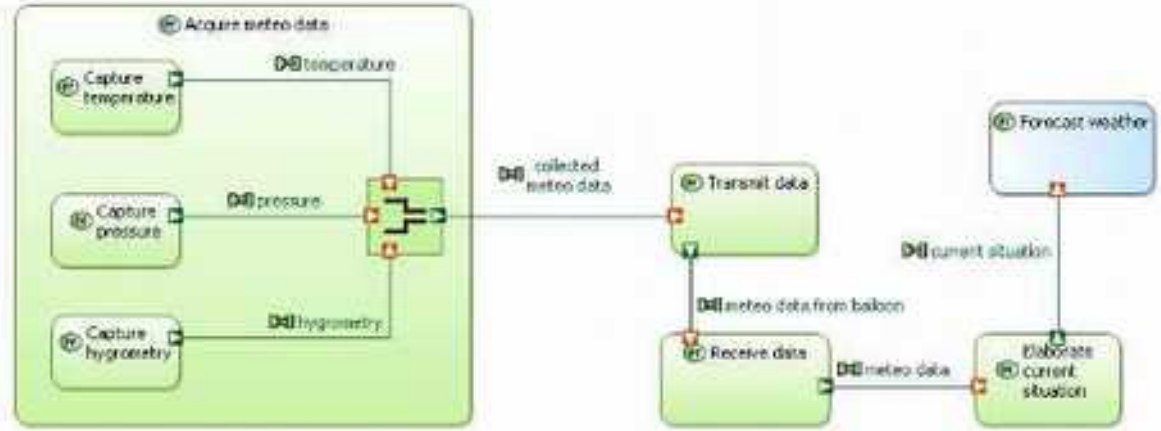

Detailed Design
Analysis
Documentation
Conceptual Design
VISUALIZATION
Programming
Fabrication
Renovation
Construction 4D/5D
Operation and Maintenance
Construction Logistics
Demolition

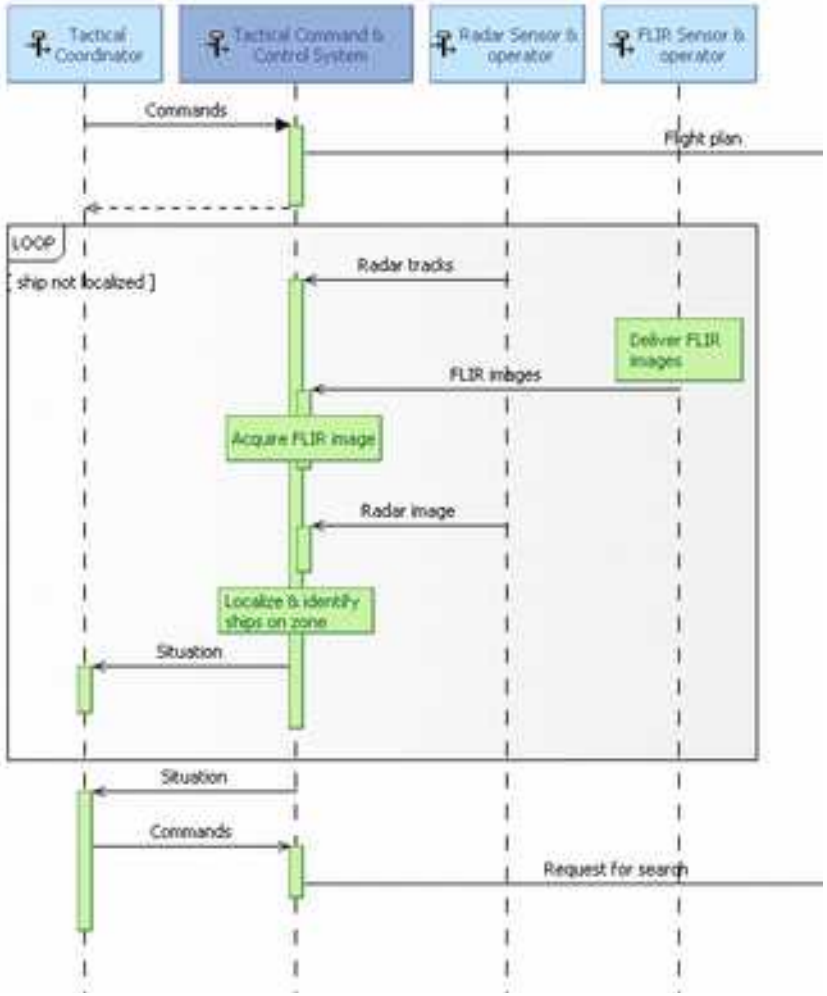

Iron Bird
AIRBU

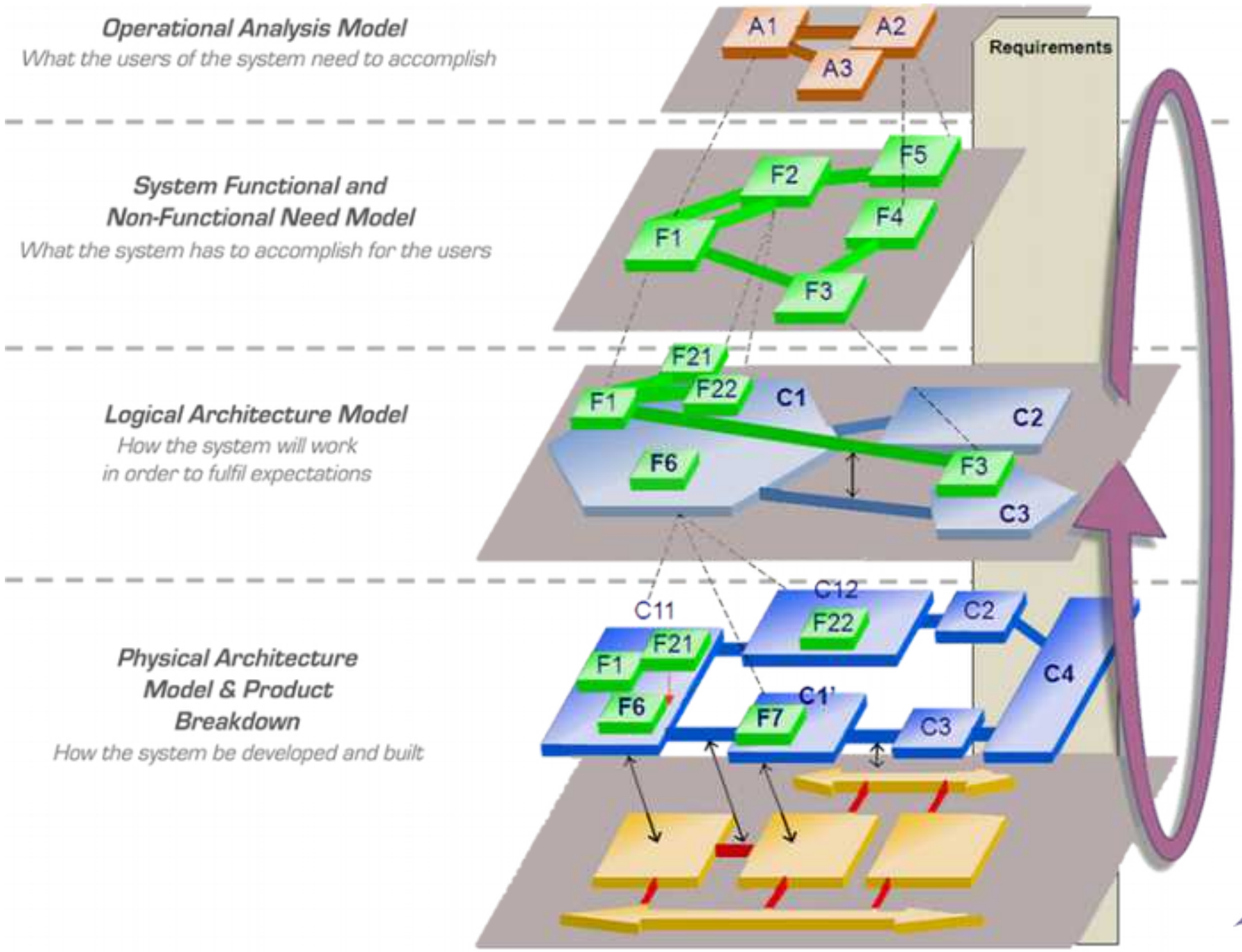

AIRBUS

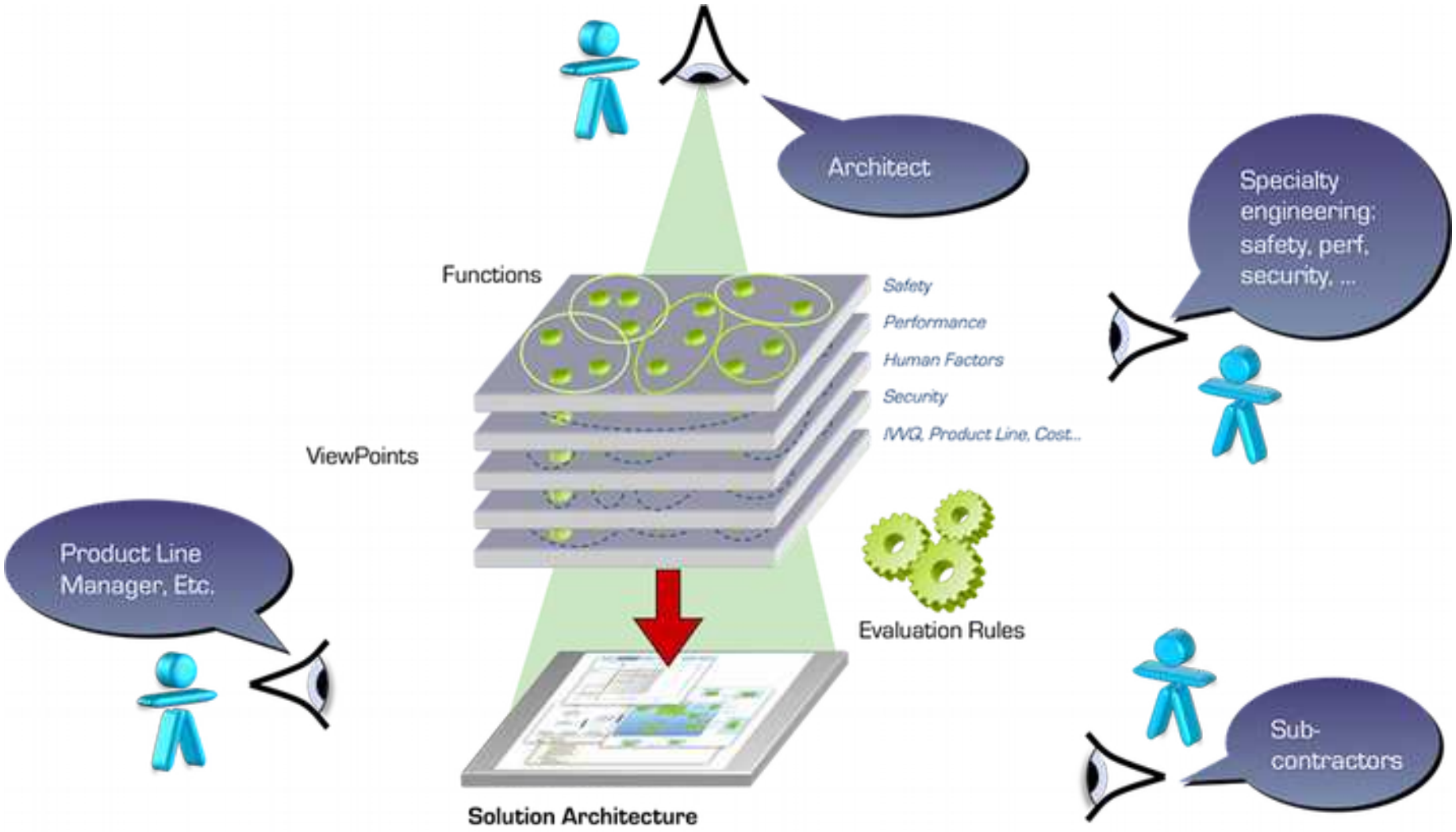
THALES

Complex Architecture Evaluation

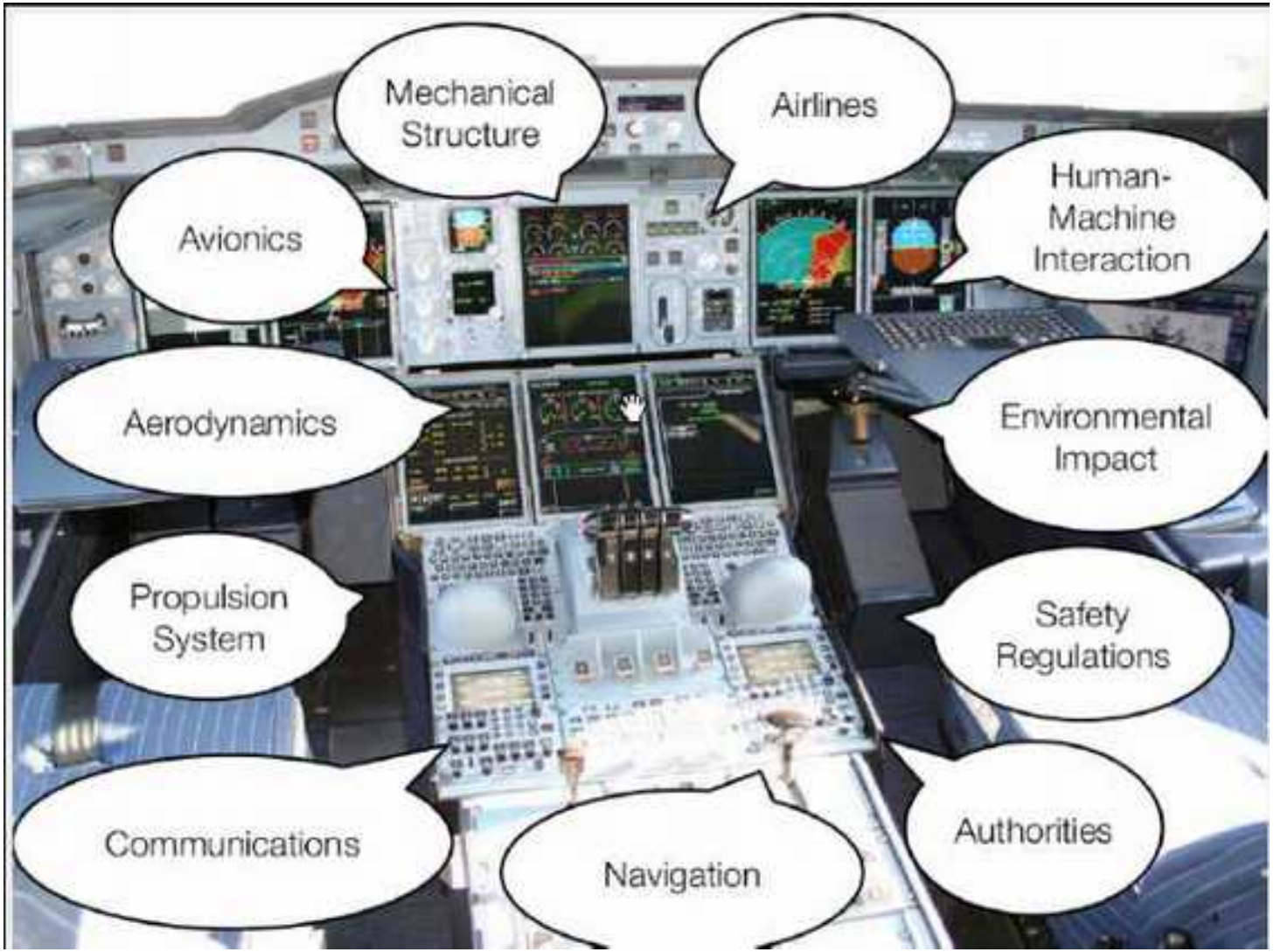






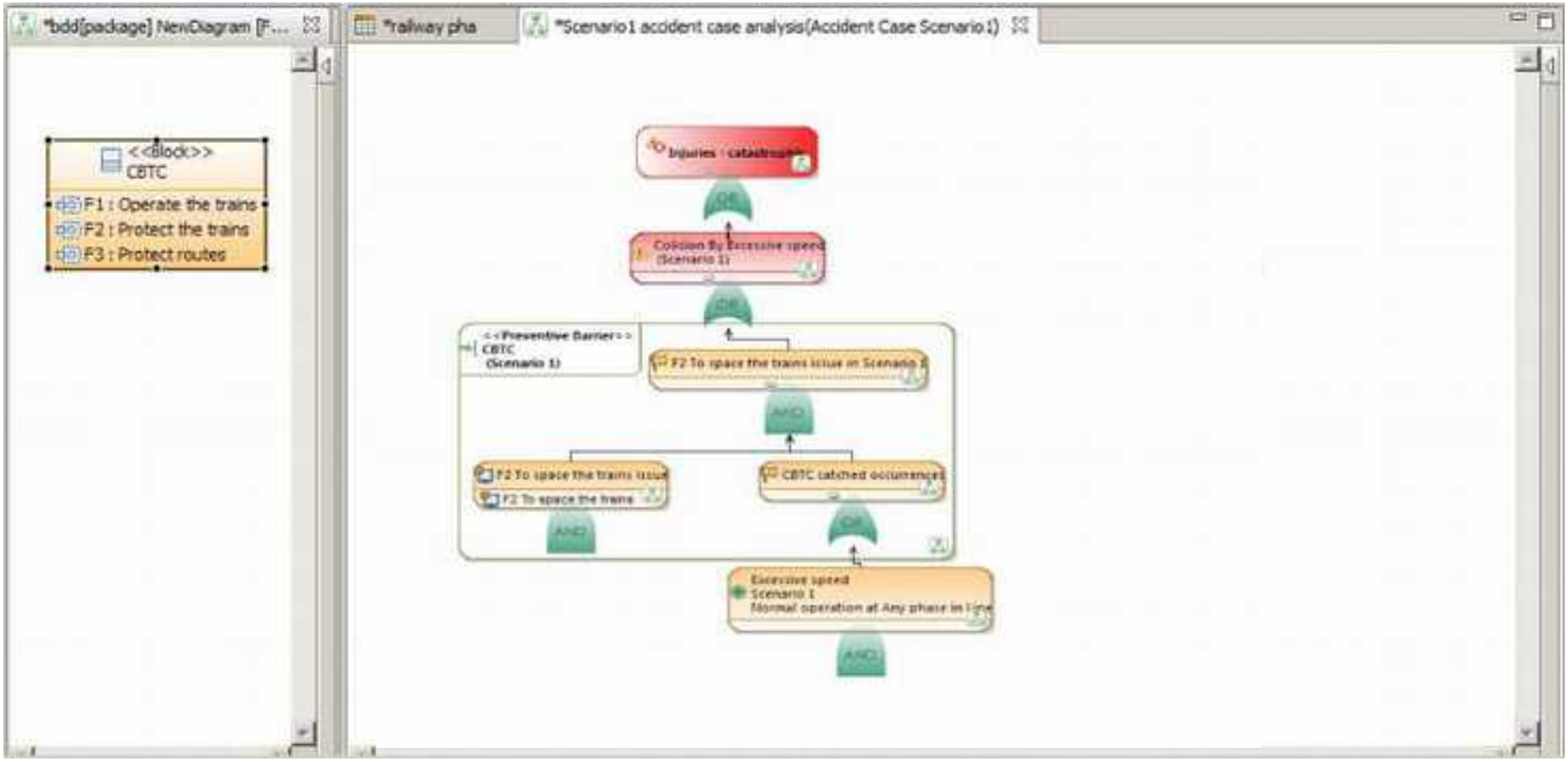


Heterogenous Parts



Capella

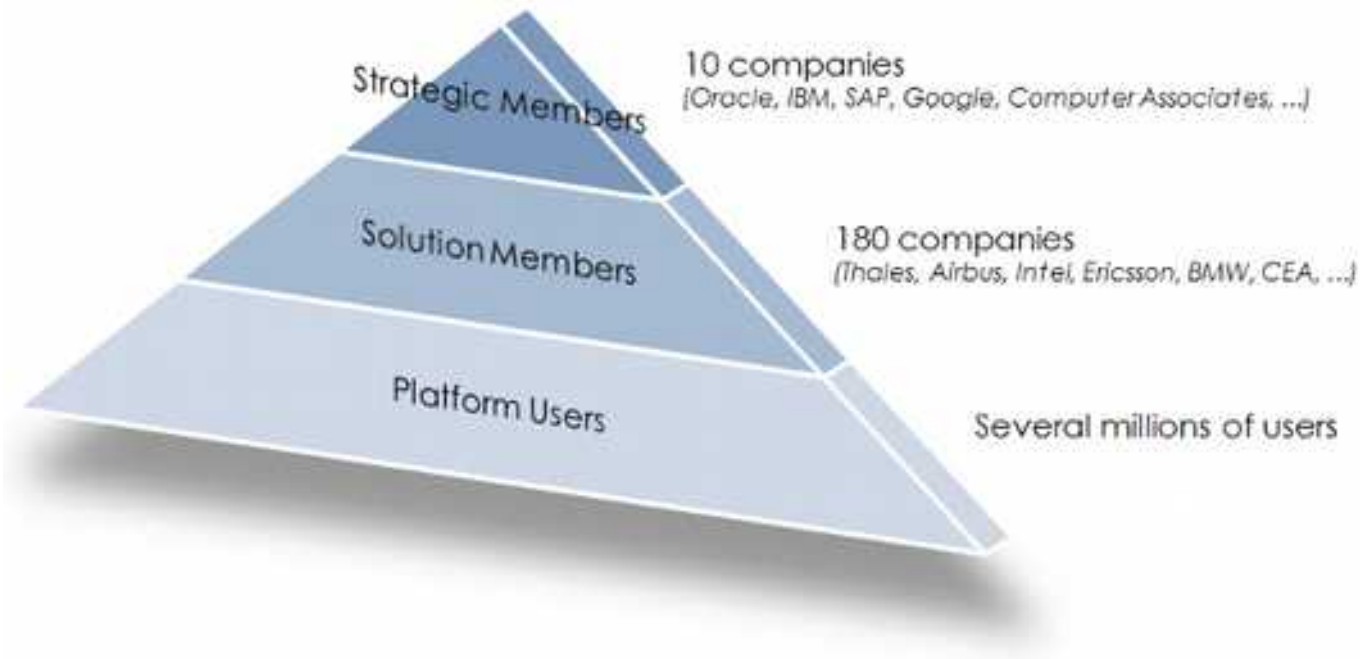
Analyse de risques



Leadership of Eclipse

eclipse
STRATEGIC MEMBERS

- Sustainability
- Dissemination
- Excellence



Sirius EMFCompare Acceleo
EcoreTools ATL eef Intent

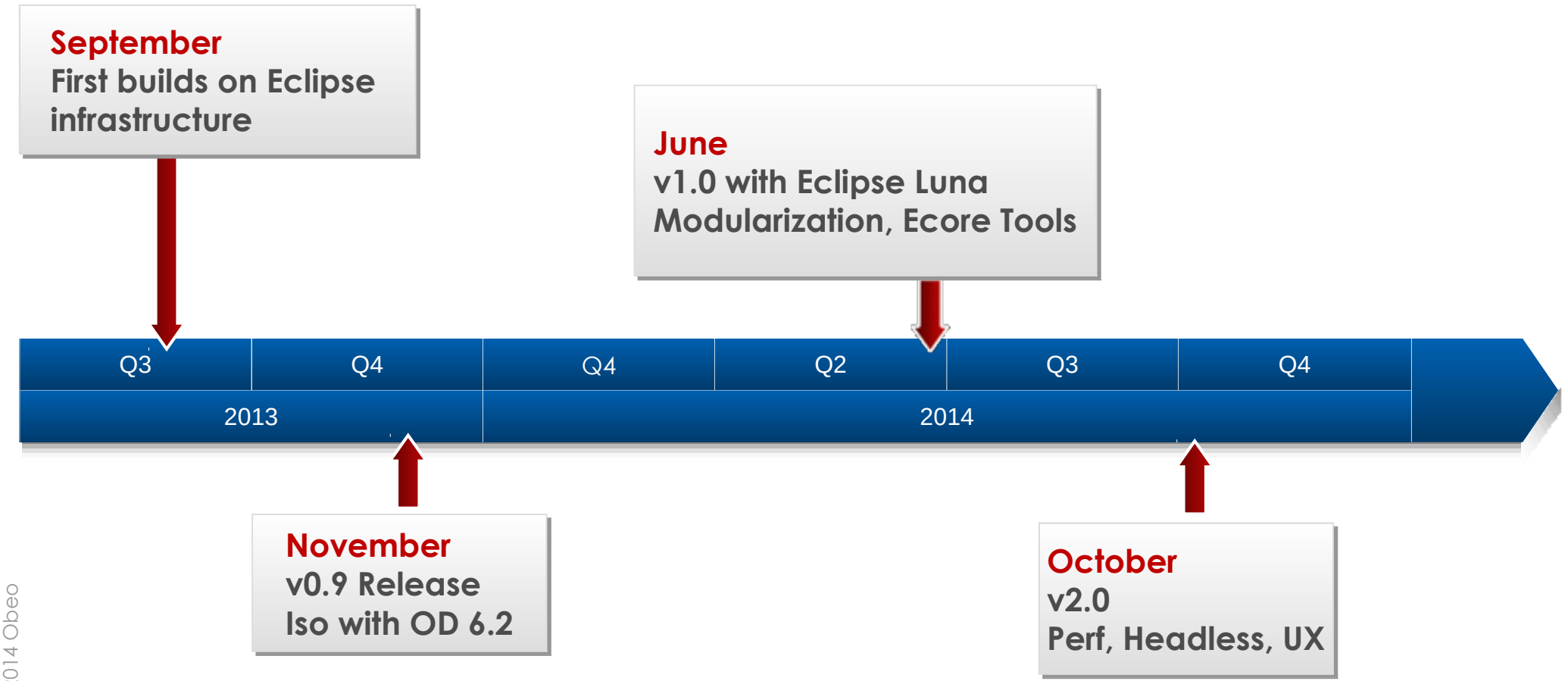
Obeo
Model Driven Company

Sirius

The OpenSource project

eclipse.org/sirius

Sirius Roadmap

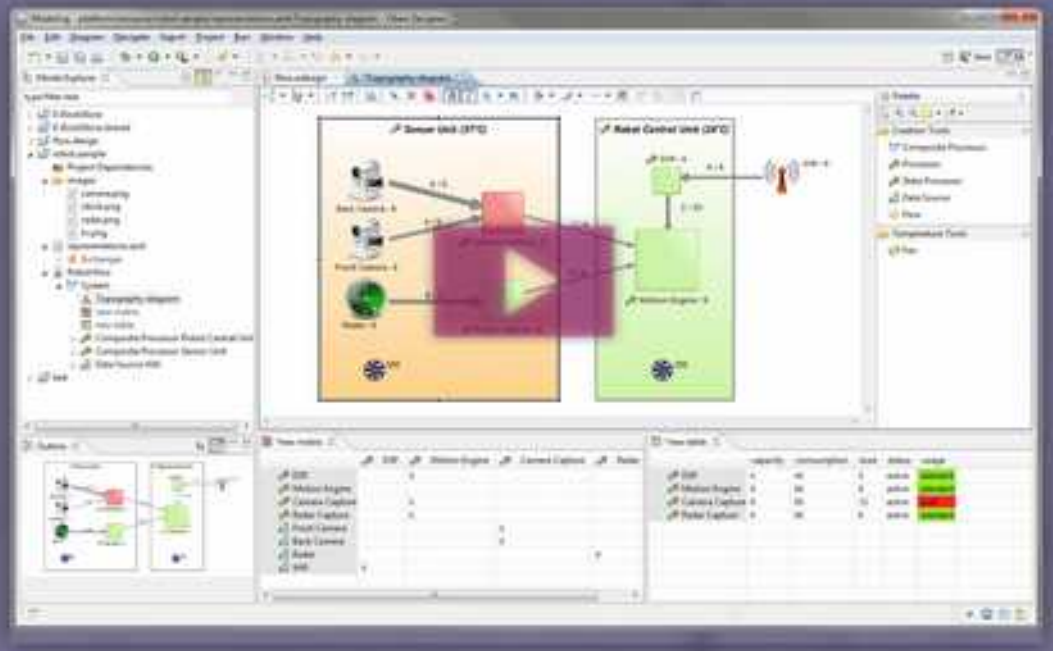


Obeo
Model Driven Company

Sirius

OVERVIEW FEATURES GET STARTED COMMUNITY DOWNLOAD

The easiest way to get your own Modeling Tool



Visual

Diagrams, tables and trees

Declarative

No code generation

Easy

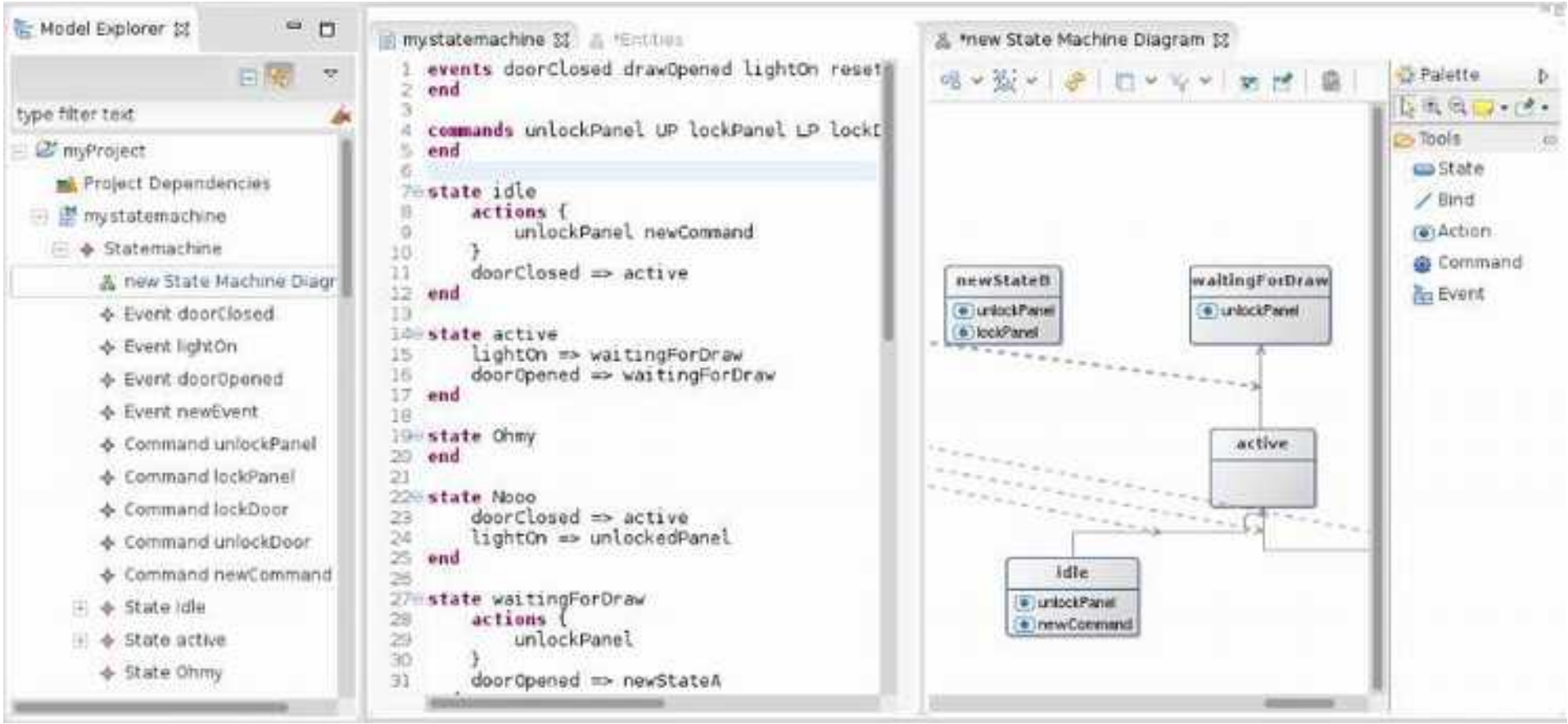
Your modeling workbench in hours

GET SIRIUS NOW DOWNLOAD

JqSaxu6SqM

Two views of the same model

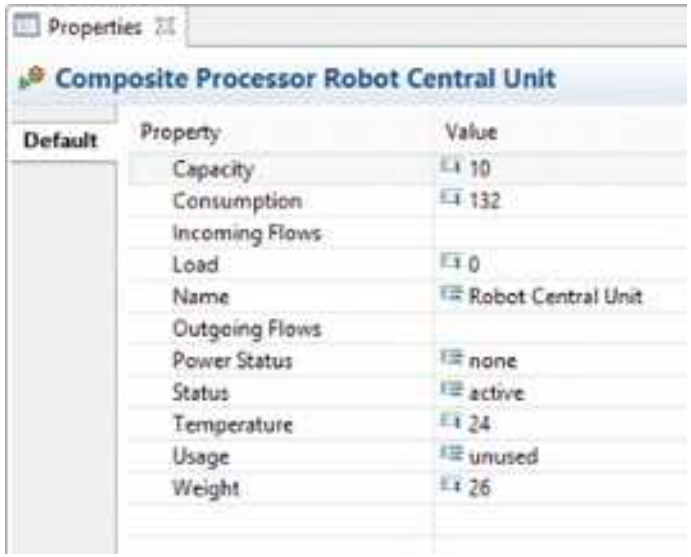
Xtext

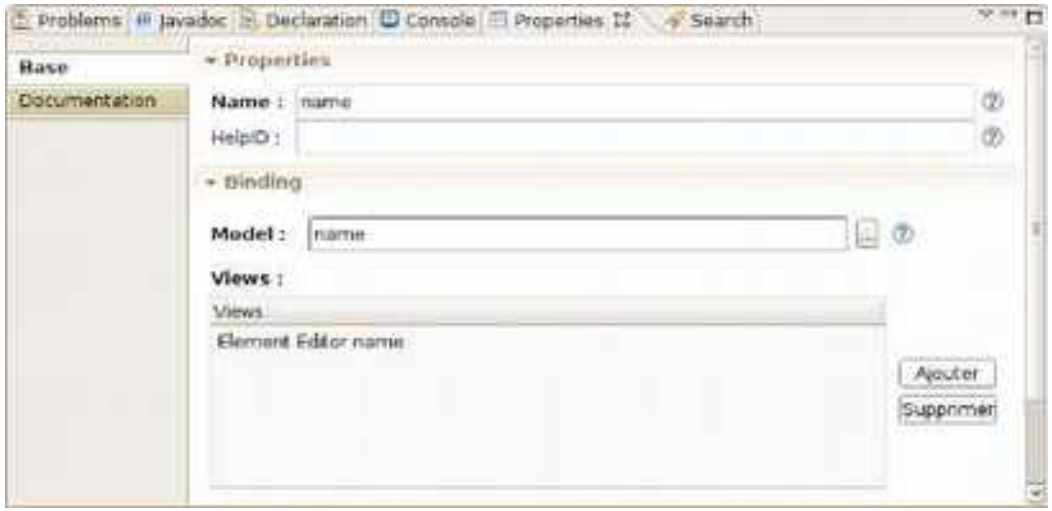


File/Workspace level integration
DSL syntax used as the serialization format
DSL AST used in the Sirius Editor

Obeo
Model Driven Company

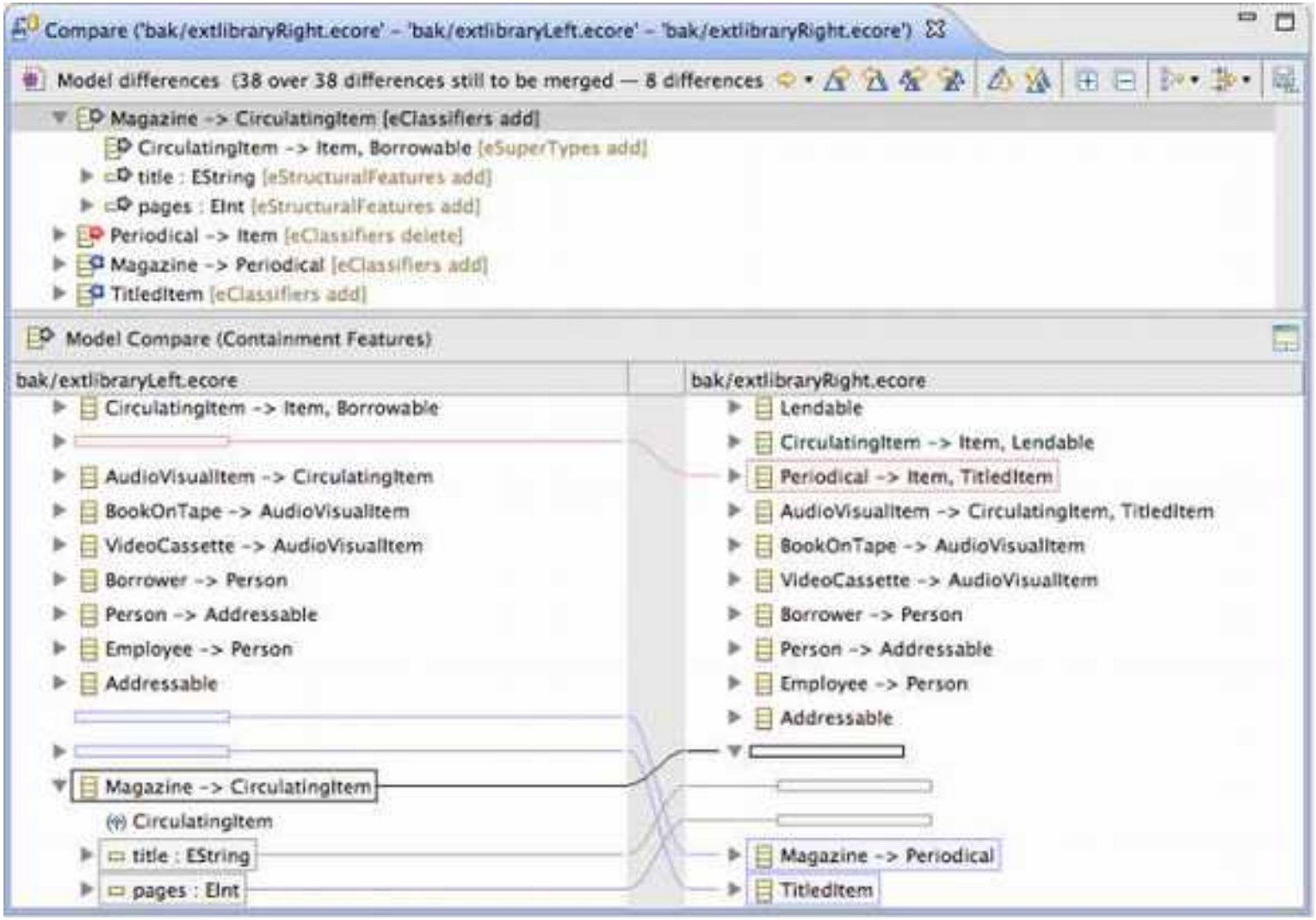
With or Without EEF





Model Driven Company

EMF Compare



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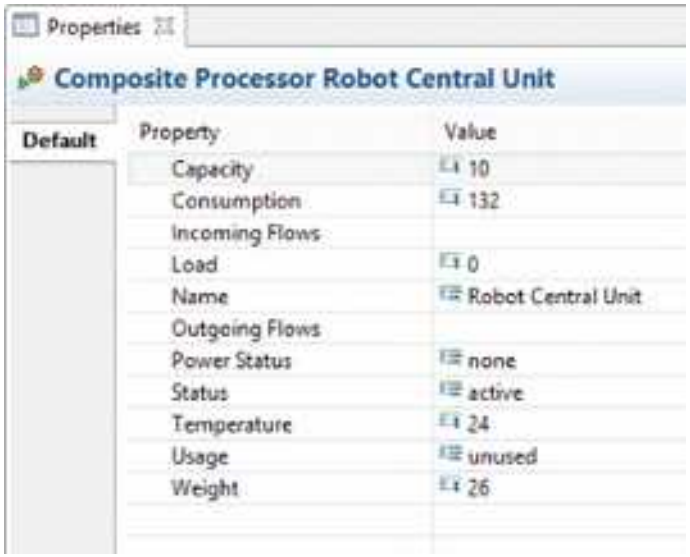
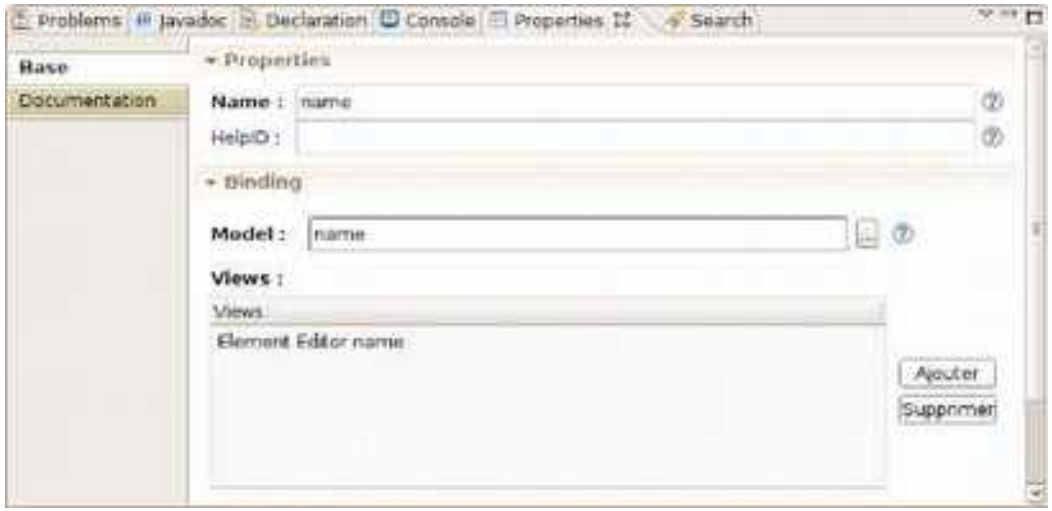
Acceleo


[template public generateEntity(entity : Entity)]
[comment @main /]
[file (getFullPathFile()
package [
[protected (c.name)]
import java.util.List;
[/protected]
implements Serializable {
[comment Generate code for attribut
Outline
model ecore
import declaration
template generate(EClass)
query publicQuery
query protectedQuery
query privateQuery
template publicTemplate(EClass)
template protectedTemplate(EClass)
template privateTemplate(EClass)
New Extension
Extension Point Selection
Create a new org.eclipse.acceleo.engine.dynamic.templates extension.
Extension Points
Extension Wizards
Extension Point filter:
org.eclipse.acceleo.engine.creator
org.eclipse.acceleo.engine.dynamic.templates
org.eclipse.core.contenttype.contentTypes
org.eclipse.core.runtime.adapters
org.eclipse.core.runtime.applications
org.eclipse.core.runtime.contentTypes
org.eclipse.core.runtime.preferences
org.eclipse.core.runtime.products
org.eclipse.emf.codegen.ecore.generatorAdapters
org.eclipse.emf.codegen.facadeHelpers
Show only extension points from the required plug-ins
Extension Point Description:

With or Without EEF





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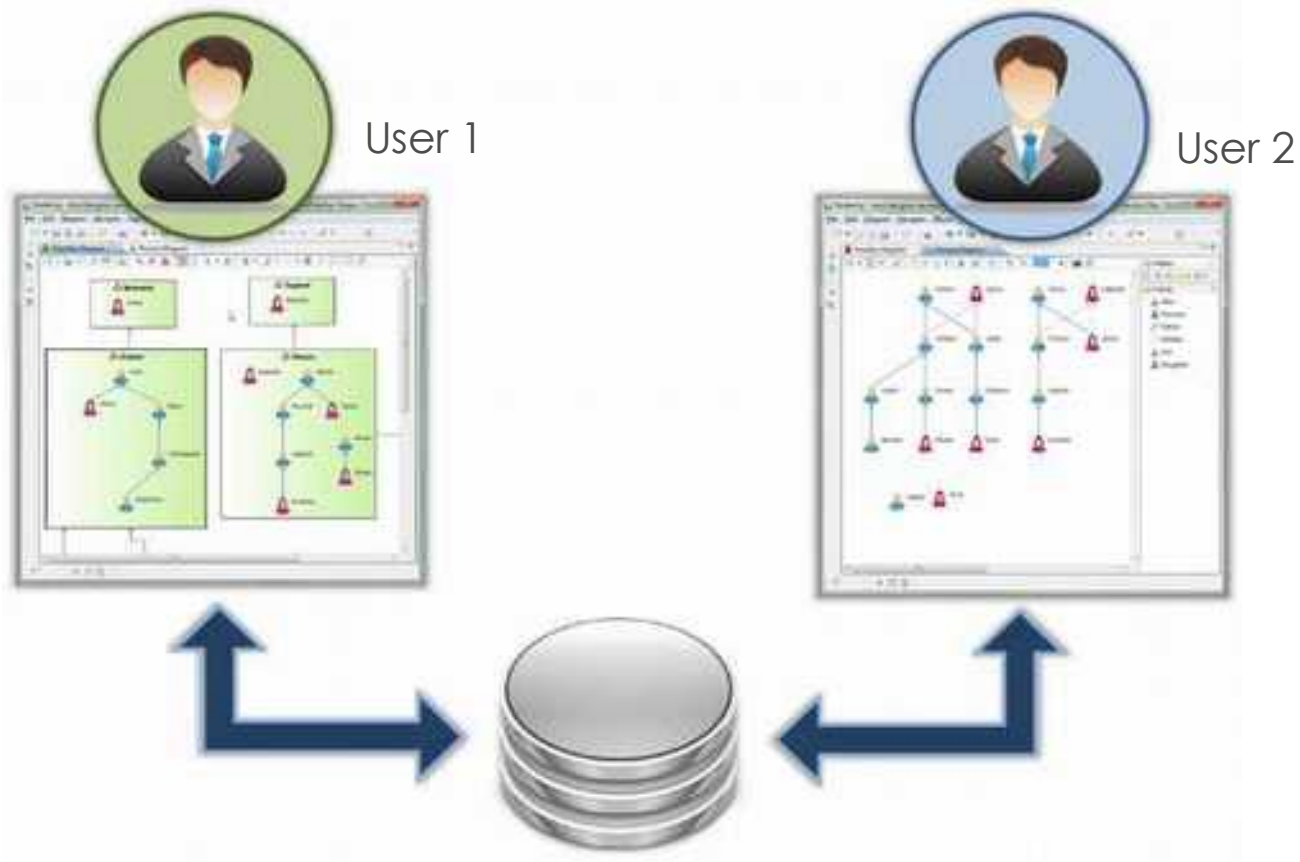
Live Collaboration

- **Shared Repository and collaborative features**



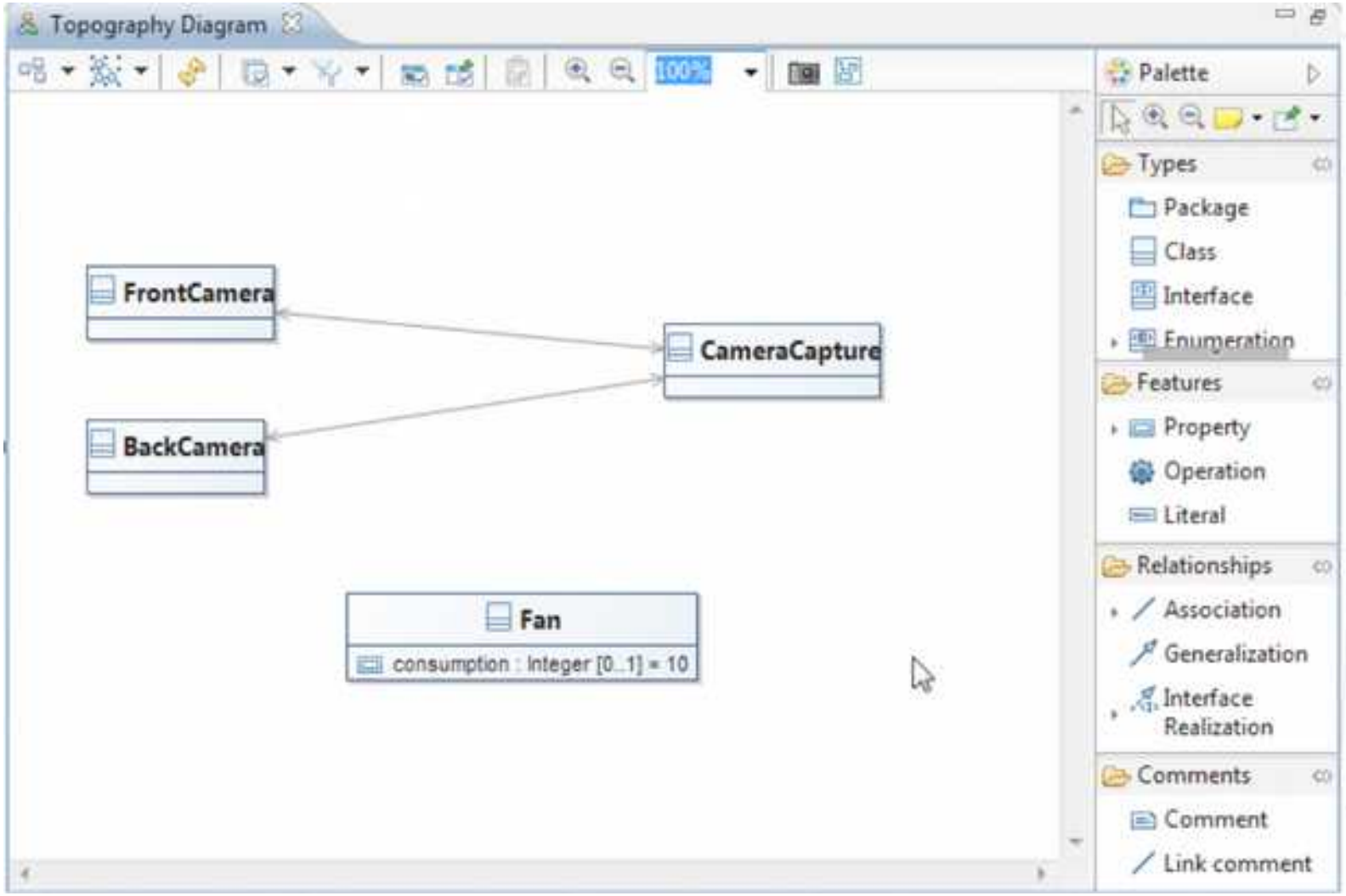
Obeo Designer Team Server
(based on CDO)

DSL vs Standards (UML) ?

- **DSL = x industrialized standards**
  - Analysis to find the best of bread of each standard
  - Fork, Combine, Extend, Adapt to the business vocabulary
  - Create and reuse Designers
  - Bridge to engines (generators, simulators, validators, ...) and partners

UML : Utopian Markup Language ?

UML, yes, but be carefull about Profils



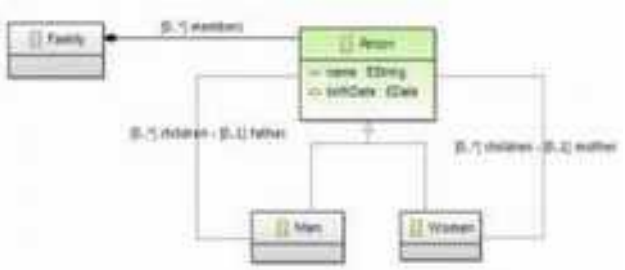
UML, yes, but be carefull about Profils

Principle

Define the Domain Model

1

Business Vocabulary
- Concepts
- Relations
- Properties

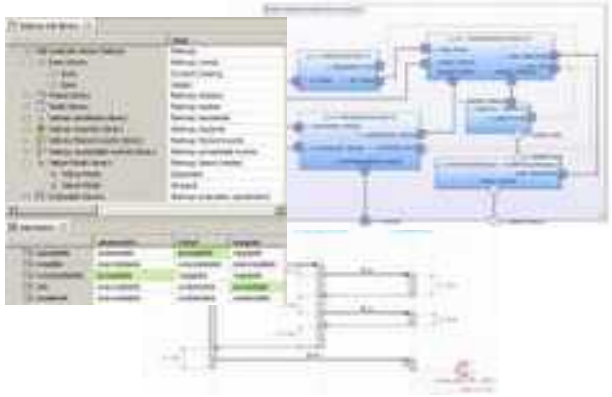


Describe the Graphical Designer

2

Representations
- Displayed elements
- Shapes
- Colors
- Fonts

Edition tools
- Palettes
- Drag & Drop



Leverage the Models

3

Model-Driven Tools
- Generation
- Validation
- Comparison
- Transformation

Is MDSD growing or slow down?

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Next challenges

- Documentation ↔ Model synchronisation
- DSL for non IT
- MDSD for dev
- Viewpoints
- Graphical / Textual Expressivness

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