A field-proven modeling solution for system and software architecture engineering

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Collective intelligence for a safer world

Whenever critical decisions need to be made, Thales has a role to play. In all its markets — aerospace, space, ground transportation, defence and security — Thales solutions help customers to make the right decisions at the right time and act accordingly.

World-class technology, the combined expertise of 65,000 employees and operations in 56 countries have made Thales a key player in keeping the public safe and secure, guarding vital infrastructure and protecting the national security interests of countries around the globe.

A balanced revenue structure

Defence 55%  Civil 45%

Revenues in 2012

€14.2 billion euros

Shareholders
(at 31 May 2013)

French State 27%

Dassault Aviation 26%

Float 47%
of which employees 3%

Employees

65,000  (workforce under management at 31 Dec. 2012)

Global presence

56  countries

Research and development

2.5  billion euros (approx. 20% of revenues)
Dual markets
Military & Civil

AEROSPACE
SPACE
GROUND TRANSPORTATION
DEFENCE
SECURITY

TRUSTED PARTNER FOR A SAFER WORLD
Thales : Global leadership

N 1 worldwide
- Payloads for telecom satellites
- Air Traffic Management
- Sonars
- Security for interbank transactions

N 2 worldwide
- Rail signalling systems
- In-flight entertainment and connectivity
- Military tactical radiocommunications

N 3 worldwide
- Avionics
- Civil satellites
- Surface radars

€14 billion in revenues

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Facts

Model Driven Engineering, BUT...
- Slow & painful modeling deployment
- COTS are not well adapted to industrial needs
- Tool vendor dependencies are too constraining

Define a method & provide dedicated tooling
- Specified, designed & developed from operational needs

With the following capabilities
- Better quality of the systems
- Better productivity of engineering activities
- Ease of Use
- Early validation
- Integration, seamlessness, coherency, traceability
- Best practice & know-how capitalization
- Performance & scalability
- Configuration management
- Collaborative engineering
How to improve quality, productivity, agility and flexibility of overall engineering?
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- Eco-system wide collaboration
  - A single architecture reference
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- Complexity mastering
  - Multi-level engineering
  - Separation of concerns
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- Early validation
  - Integrated specialty engineering
  - Trade-off analysis
  - Short decision loop

ViewPoints
- Product Line
- Human Factors
- Performance
- Safety

Evaluation Rules
Solution Architecture

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Thales Global Services / Template: 83150233-DOC-TGS-EN-002
How to improve quality, productivity, agility and flexibility of overall engineering?

- **Eco-system wide collaboration**
  - A single architecture reference

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- **Mastering transition**
  - Information refinement
  - Coherency maintenance
  - Multi-level impact analysis

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Arcadia : a MDE Scalable and Adaptable Method
How to improve quality, productivity, agility and flexibility of overall engineering?

Capella
Concretely

Capella

Demonstration...
Capella Graphical charter

Functions = Green

Components = Blue

Interfaces = Pink
Demonstration Focuses

**Guidance** [Embedded methodological browser]

**Complexity management** [Abstraction via computed information]

**Productivity tools** [Automated transitions and diagram creation accelerators]

**Model Analysis & Navigation** [Model validation, semantic browser]

**Multi-criteria analysis** [Viewpoints and management framework]
Capella Demonstration

- Brush diagram layouts
- Transition System Subsystem
- Live collaboration

- Replicable elements
- Progress monitoring & model review
- IVV and Product Line viewpoints

- Automated contextual diagrams
- ... And there's more ...
- HTML output

- Unsynchronized diagrams
- Fast Linker
- Batch quickfixes

- Model Patterns
- Validation profiles
- IncQuery & Acceleo requests

- Semantic delete with preview

... And there's more ...
Critical Information Systems

- Ground Exploitation Systems
- Command & Control (air, sea, railways...)
- Large secured Communication Networks...
- Satellite Control Networked Ground Stations

Embedded Systems

- Combat Systems (Radar, Self Protection, Optronics...)
- Mission Systems (Air, Sea, Ground)
- Satellite Constellations
- Avionics Suites
- Computing Systems
- Electrical Power Systems
- Thermal Cooling Systems
- Railways signalling Systems
Phase 1: Get OSSing competence & prepare environment

Phase 2: OSSing MDE technical components & solutions

Phase 3: OSSing Capella

« Hosted by »

« Built upon »

(incld. Sirius)

Eclipse Generation Factorys
Thank you for your attention!

Any questions?