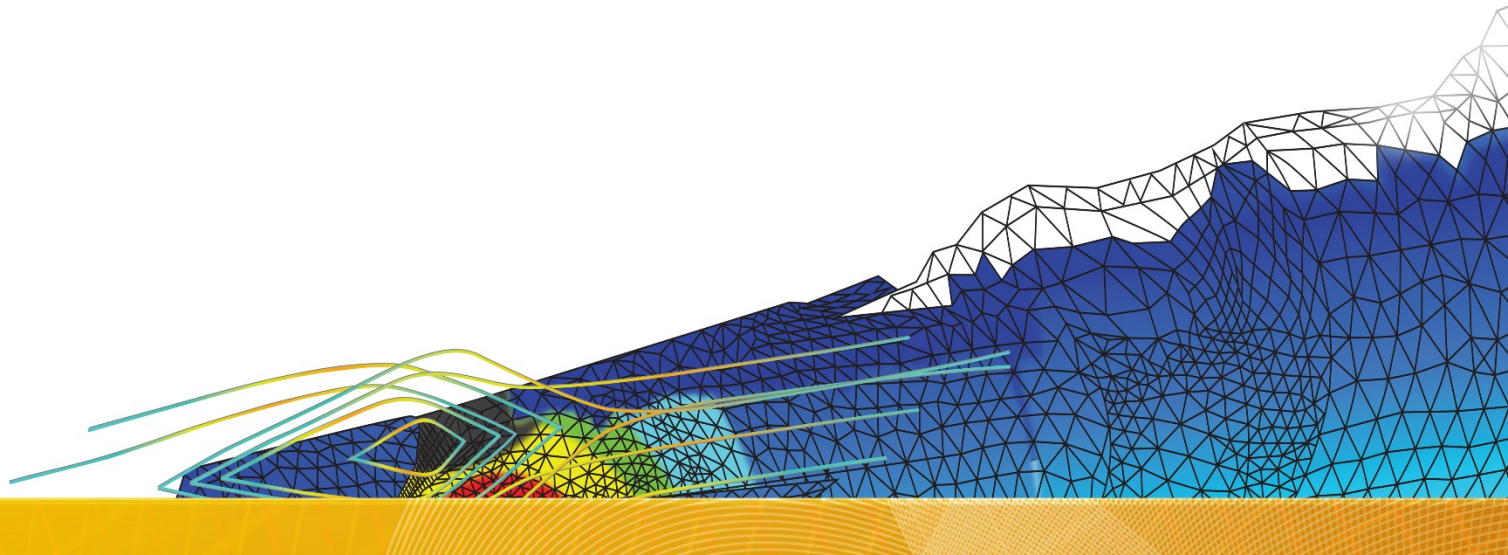




SCADE Suite Basics

Automated Documentation Generation



SCADE LifeCycle Reporter

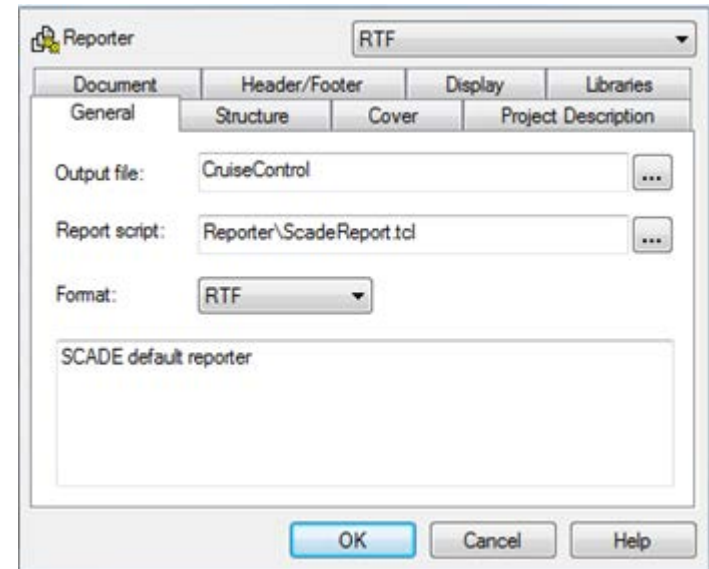
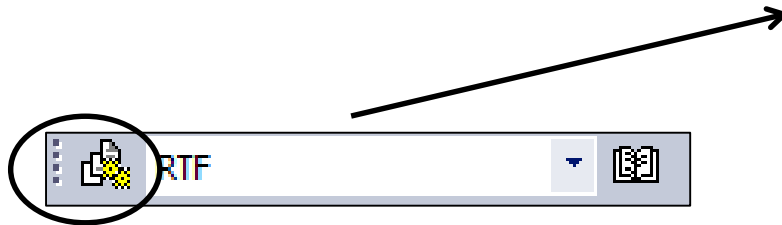
Automated documentation generation enables:

- Review of the SCADE Suite model
 - Verification that the SCADE design conforms to project standards
 - Verification that the SCADE design complies with requirements (in addition to simulation results)
- Communication to other teams
- Constitution of the dossier to be build up for certification

Reporter: General Settings

Generate project reports using predefined configurations (HTML or RTF) or user configurations

Use the toolbar to open the Settings dialog:



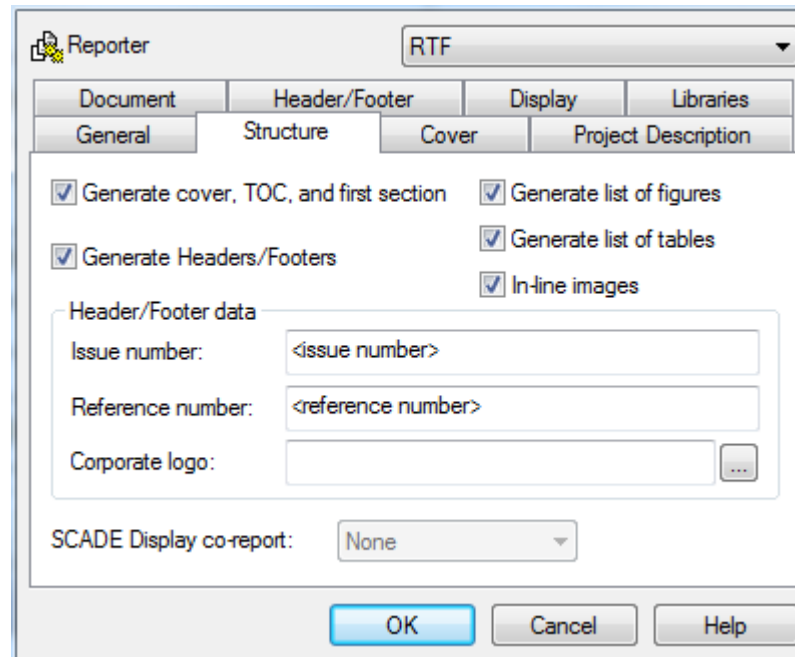
Content of the report

- Two formats : HTML or RTF
- Choose a TCL script to generate a content fully customizable
 - A default one is available: *ScadeReport.tcl*

Reporter: Structure Settings

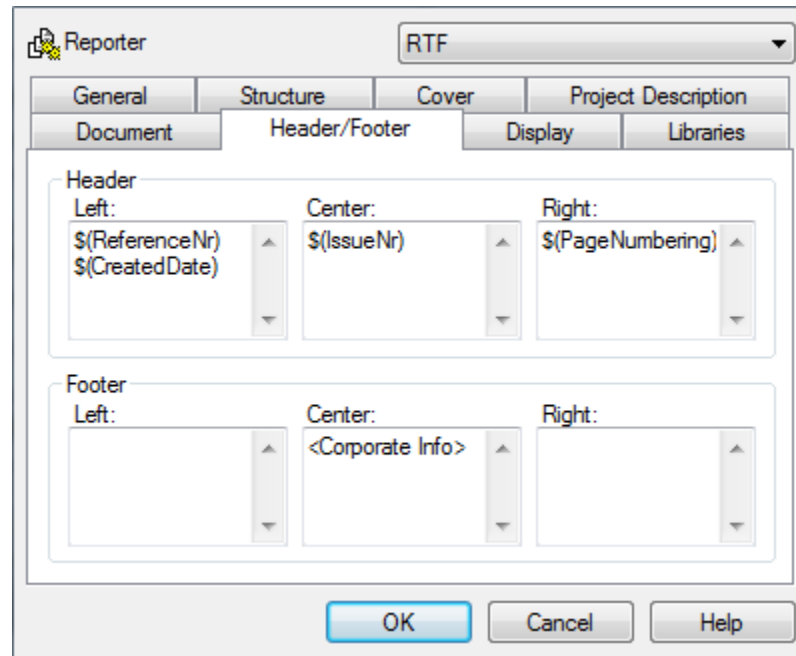
Customization of the structure:

- Call graph, Table of content, etc.



Reporter: Structure Settings

Easy management of the headers/footers



Display Options

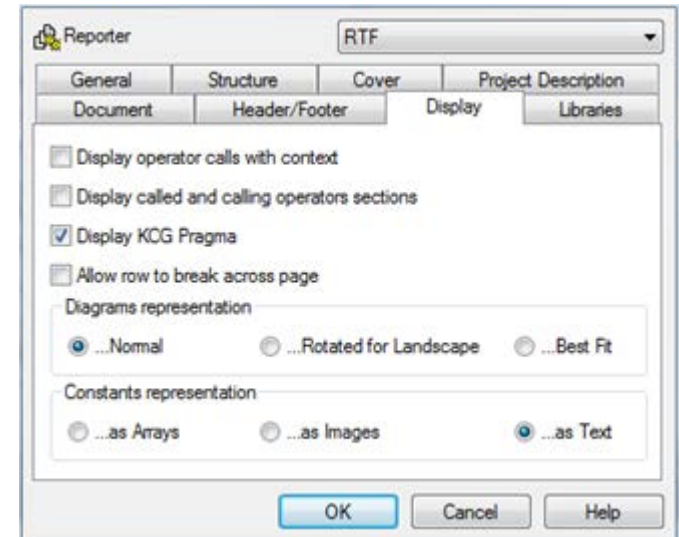
Constants:

Name	Type	Value	Comments/Annotations
Iengine	real	0.025	
KBRAKE	real	200.0	
KTRASM	Vec5	1	
		2	
		3	
		4	
		5	
		4.75	
		2.68	
		1.87	
		1.42	
		1.17	
MASSE	real	1450.0	
TCYCLE	real	0.1	
Tengine	real	-0.04	
TorqMax	real	400.0	
VehicleDynamic	real	2.5	

As Arrays

Constant	Type	Value	Comments
Iengine	real	0.025	
KBRAKE	real	200.0	
KTRASM	Vec5	1	
		2	
		3	
		4	
		5	
		4.75	
		2.68	
		1.87	
		1.42	
		1.17	
MASSE	real	1450.0	
TCYCLE	real	0.1	
Tengine	real	-0.04	
TorqMax	real	400.0	
VehicleDynamic	real	2.5	

As Images



Name	Type	Value	Comments/Annotations
Iengine	real	0.025	
KBRAKE	real	200.0	
KTRASM	Vec5	[4.75 , 2.68 , 1.87 , 1.42 , 1.17]	
MASSE	real	1450.0	
TCYCLE	real	0.1	
Tengine	real	-0.04	
TorqMax	real	400.0	
VehicleDynamic	real	2.5	

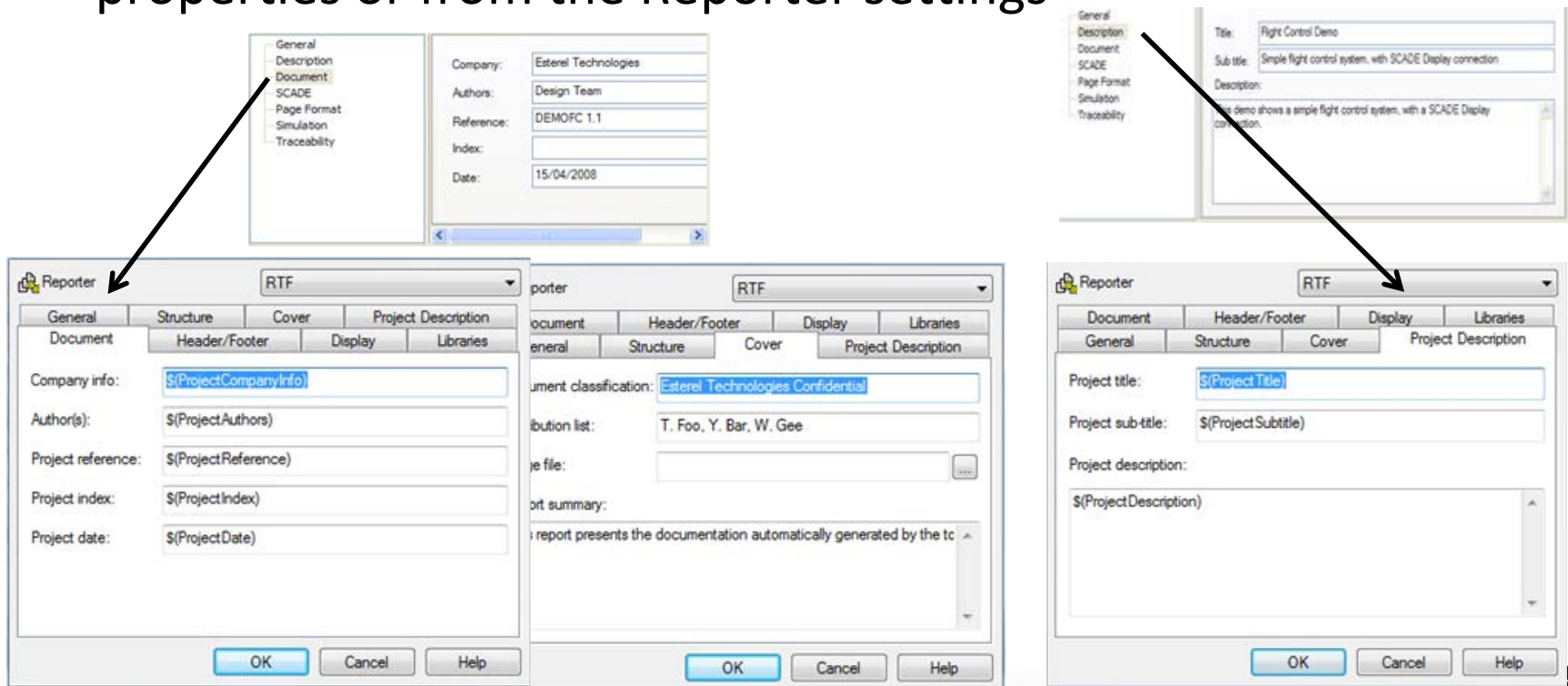
As Text

Custom Attributes

Manage document attributes:

- Classification, distribution list, etc.

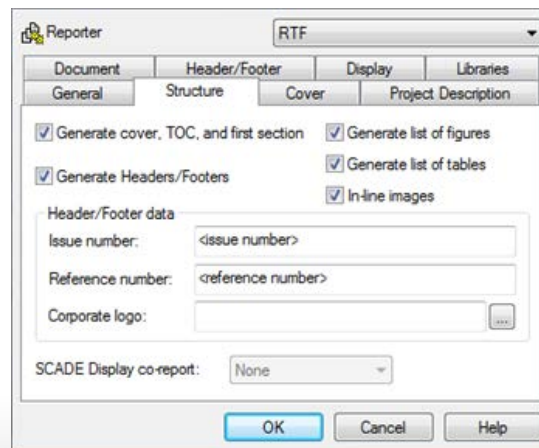
Customize cover, structure, description from project properties or from the Reporter settings



SCADE Display Integration

When there is at least one SCADE Display specification in the project or one operator connected to a specification
SCADE display co-report:

- *Complete*: generate the "SCADE Display Integration" section in the "Software Architecture" chapter, the connection table for each connected operator and SCADE Display reports
- *Connection Tables*: same as "Complete", without the generation of the SCADE Display reports
- *None*: no report of SCADE Display elements



Report generation

After having selected a configuration, to produce a report, click on:



A HTLM or RTF document is displayed, according to the selected format

- Contains the current SCADE design loaded in SCADE Suite


Report Document

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<document classification>

Pilot Example

Auto Pilot



Summary:
<summary>

Company: Esterel Technologies
Authors: S.SABATHIER
Reference: 1.4
Index: 2
Date: 19/10/2007

Distribution List: <distribution list>

<Corporate Info>

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 - 3.2.1. FlightSim Operator 3
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 - 3.3.9. Command Operator 3
 - 3.3.10. CorrectVelocityAxes Operator 3
 - 3.3.11. Derivate Operator 3
 - 3.3.12. DeterminePointPosition Operator 3
 - 3.3.13. DeterminePosition Operator 3
 - 3.3.14. DetermineVelocity Operator 3
 - 3.3.15. GetMvtMode Operator 3

<Corporate Info>

Report Document

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2. Software Architecture

2.1. Project Architecture

This section displays the package hierarchy of projects.

Project [Pilot](#)
[ExternalConditions](#)
[FlightSimulation](#)
[Pilot](#)

2.2. Call Graph

This Call Graph displays the dependency tree of model operators.

1. [FlightSimulation::FlightSim](#)
 - 1.1. [ExternalConditions::ExternalConditions](#) (L59=)
 - 1.1.1. [ExternalConditions::CalculateNewPoint](#) (L69=)
 - 1.1.1.1. [ExternalConditions::AddPointPosition](#) (L9=)
 - 1.2. [Pilot::Pilot](#) (L56=)
 - 1.2.1. [Pilot::CheckPosition](#) (L37=)
 - 1.2.1.1. [Pilot::CheckTelemetry](#) (L13=)
 - 1.2.1.1.1. [Pilot::CheckPointPosition](#) (L25=)
 - 1.2.1.1.2. [Pwlinear::ClockCounter](#) (L31=)
 - 1.2.1.2. [Pilot::DeterminePosition](#) (L47=)
 - 1.2.1.2.1. [Pilot::DeterminePointPosition](#) (L3=)
 - 1.2.1.3. [Pilot::DetermineVelocity](#) (L19=)
 - 1.2.1.3.1. [Pilot::Derivate](#) (L52=)
 - 1.2.1.3.2. [Pilot::Module](#) (L55=)
 - 1.2.1.3.2.1. [mathext::SqrtR](#) (L10=)
 - 1.2.1.3.2.2. [Pilot::SquareSum](#) (L12=)
 - 1.2.2. [Pilot::Command](#) (L24=)
 - 1.2.2.1. [Pilot::MvtCalculus](#) (TheoricVel=)
 - 1.2.2.1.1. [Pilot::Approach_FL textual](#) (L48=)
 - 1.2.2.1.2. [Pilot::Rising_FL imported](#) (L46=)
 - 1.2.2.1.3. [Pilot::Waiting_FL](#) (L45=)
 - 1.2.2.2. [Pilot::VelocityRegulation](#) (L21=)
 - 1.2.2.2.1. [Pilot::CorrectVelocityAxes](#) (L144=)
 - 1.2.3. [Pilot::GetMvtMode](#) (L30=)
 2. [Pilot::Approach_FL](#)
 3. [Pilot::Rising_FL](#)

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3.2.1.1. Node Hierarchy

state-machine : [SelectMode](#)
 state : [Simu](#)
 state : [Flight](#)
 state-machine : [SM2](#)
 state : [Manual](#)
 state : [Auto](#)

3.2.1.2. Graphical Views

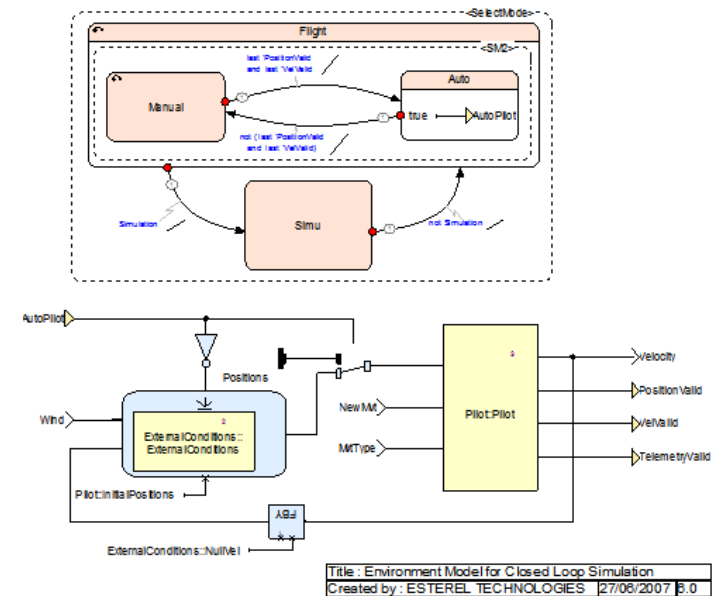


Figure 4: FlightSim

Table 13: Transitions of FlightSim

Source/Target	#	Conditions/Actions	Comments/Annotations
Source: SelectMode:Flight:SM2:Manual Target: SelectMode:Flight:SM2:Auto	1	Condition: last 'PositionValid and last 'VelValid	

<Corporate Info>

Qualified Verification Tool

SCADE LifeCycle Reporter is qualified as a verification tool, to ensure that , in any cases, what is printed represent the model:

- Certification Kit DO-178C Level A (Criteria 3 / TQL-5)
- Qualified for SCADE Suite and SCADE Display
- Qualified report generation only in batch mode
- Qualified tool for the RTF format (forced option) and a defined environment:
 - Use the required “Reporter\ScadeQualifiedReport.tcl” script
 - A dedicated reporter configuration named “Qualified Reporter” is available



Qualified Verification Tool

In the scope of the qualification, several “standard” reporter properties values are forced, as follows:

Reporter property	Forced value	Reporter GUI tab	Reporter GUI field name
ImagesInLineWithText	true (default)	Structure	In-line images
ReportHeaderAndFooter	true (default)	Structure	Generate Headers/Footers
ReportStructure	true (default)	Structure	Generate cover, TOC, and first section
AllowRowToBreak	true	Display	Allow row to break across page
cstDisplayType	Flat	Display	Constants representation/ ...as Text
DisplayCalledAndCalling	true	Display	Display called and calling operators sections
DisplayKCGPragma	true	Display	Display KCG Pragma

Batch Generation

```
SCADE -report <project> -configuration <configuration>
```

Notes:

- <project> = *“project name”.etp*
- To call the qualified reporter, the “reporter script” property must be set to *“Reporter\ScadeQualifiedReport.tcl”* in the configuration

Advanced TCL Customization

SCADE LifeCycle Reporter can be customized with TCL scripts:

- Use the Reporter-related TCL commands to set the content and display of model documentation and reports (refer to details in the User Manual document)

The customization script files must be registered in the SCADE Suite environment for a proper evaluation

Use this tool with the user customized TCL procedures (or options outside the qualification context)

Additional verification activities are required