

WP7 - Task 7.2: Secondary tool selection

Progress Meeting

Marielle Petit-Doche



7th of October 2013, DLR, Braunschweig

Outline

- 1 T7.2 Presentation
 - T7.2 Overview
 - T7.2 Organisation
- 2 T7.2 Means and tools for VnV
- 3 T7.2 Support of safety activities
- 4 T7.2 Model transformation and code generation
- 5 T7.2 Items and artifacts management
- 6 Conclusion

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Aim

Identify the means and tools to complete the primary toolchain to provide SIL4 software

- to support VnV
- to support safety analysis
- to support management of items and artifacts
- to support model transformation or code generation

⇒ **Proposal** : Benchmark of means and tools as for T7.1

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Main steps

- Inputs: WP2 deliverables
 - States of art: D2.1 and D2.2 (and partly D2.4)
 - OpenETCS requirements: D2.6-9
 - Primary toolchain: D7.1
 - End users requirements (WP3, WP4, SSRS,..)
- Outputs :
 - Set of models: O7.1.1, O7.1.5
 - Criteria template: O7.2.1
 - Selection: O7.2.2, O7.2.3, O7.2.4, O7.2.5, O7.2.6, O7.2.7, O7.2.8
 - **Decision : D7.2**
- Key dates for T7.2
 - April 2013: Start with benchmark candidates
 - September 2013: First Criteria templates and Telco meetings
 - November 2013: Evaluation process
 - December 2013: Decision meeting and final report

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OpenETCS criteria

- Common key criteria
 - Open Source approaches
 - Complementarity with primary toolchain
 - Integration to the primary toolchain
 - Qualification according EN50128 criteria
 - ...
- Criteria for each categories
- Heterogeneous tools for heterogeneous activities

⇒ **Proposal** : Four independent templates of criteria

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OpenETCS criteria

GitHub repository interface for **openETCS / toolchain**.

Repository details: **openETCS / toolchain** (PUBLIC). Actions: Unwatch (23), Unstar (13), Fork (10).

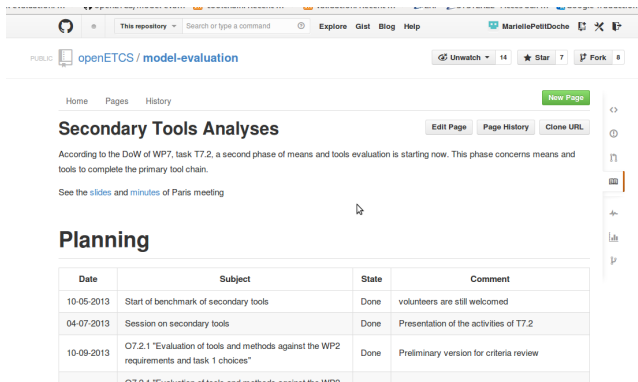
Branch: **master** | **toolchain / T7.2** | History

Commit message: **Split of O7.2.1 in several documents** by **MariePetitDoche** 2 days ago. Latest commit: **8d6374a8b2**.

File/Folder	Description	Time
..		
DataModel	First version of the Data Model	a month ago
O7.2.1	Revert to the last commit.	9 days ago
O7.2.1_Management	Split of O7.2.1 in several documents	2 days ago
O7.2.1_Safety	Split of O7.2.1 in several documents	2 days ago
O7.2.1_Transformation	Split of O7.2.1 in several documents	2 days ago
O7.2.1_VnV	Split of O7.2.1 in several documents	2 days ago
Progress_meeting_20130704	Slides from WP4 on the needs for secondary tools	3 months ago
SSRS_tools_meeting_20130...	Slides on SSRS tools	3 months ago

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T7.2 Wiki page



The screenshot shows the GitHub interface for the repository `openETCS / model-evaluation`. The page title is **Secondary Tools Analyses**. Below the title, there is a paragraph of text and a link to a meeting. Below that is a section titled **Planning** which contains a table with task details.

Home Pages History New Page

Secondary Tools Analyses

[Edit Page](#) [Page History](#) [Clone URL](#)

According to the DoW of WP7, task T7.2, a second phase of means and tools evaluation is starting now. This phase concerns means and tools to complete the primary tool chain.

See the [slides](#) and [minutes](#) of Paris meeting

Planning

Date	Subject	State	Comment
10-05-2013	Start of benchmark of secondary tools	Done	volunteers are still welcomed
04-07-2013	Session on secondary tools	Done	Presentation of the activities of T7.2
10-09-2013	O7.2.1 "Evaluation of tools and methods against the WP2 requirements and task 1 choices"	Done	Preliminary version for criteria review
	O7.2.1 "Evaluation of tools and methods against the WP2		

`https://github.com/openETCS/model-evaluation/wiki/Secondary-Tools-Analyses`

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T7.2 Telco Agenda

Agenda for Telco presentation

A weekly telco session will be organized each Thursday morning at 10:30, to allow presentation of the candidates. A 20 minutes session is proposed for each candidate. (telco id :<https://global.gotomeeting.com/join/298471213>)

Please to fill the following table to choose a session (3rd of October is a German national holiday).

Ref	Date	Subject	Speaker	Categories (VnV, Safety, Management, Transformation)
a	26/09/2013 10:30	PeR (Requirements, Traceability)	Michael Jastram	Management
b	17/10/2013 10:30	CPN Toolkit	Stefan Rieger (TWT)	VnV
c	17/10/2013 10:50	Frame-C	Vigile Prevosto (CEA)	VnV
d	17/10/2013 11:10	Flare and Tina	Silvano Dal Zilio (LAAS)	VnV
e	24/10/2013 10:30	OSN Safety Case Modelling	Jan Wette (TU-BIS)	Safety
f	24/10/2013 10:50	AMtec Safety Architect	Cyril Comu (AMtec)	Safety
g	24/10/2013 11:10			
h	31/10/2013 10:30			
i	31/10/2013 10:50			
j	31/10/2013 11:10			

<https://github.com/openETCS/model-evaluation/wiki/Secondary-Tools-Analyses#agenda-for-telco-presentation>

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T7.2 Assessors table

Contact	Formalism / Tool	Categories (VnV, Safety, Management, Transformation)	Assessor 1	Assessor 2	State
Uwe Steinke (SIEMENS)	SCADE Suite	VnV, Transformation, Management			
Matthias Gödemann (Systeme)	Rodin + plugins (ProB, ProB, SMT solvers, IUM,...)	VnV, Transformation, Management, Safety			
Jan Welte (TU-BB)	CPN-Tools & SPENAT	VnV, Safety			(Stefan Rieger (TWT) as optional assessor)
Jan Welte (TU-BB)	Goal Structuring Notation (GSN)	Management, Safety			
Alexandre Givoley (AMTAC)	MaTeLo (Model Based Testing tool based on Markov Chains)	VnV, Management			
Murielle Petit Doche (Systeme)	AstéeB	VnV			
Stefan Rieger (TWT)	UPPAAL	VnV			
Stefan Rieger (TWT)	System C	VnV			
Cécile Braumstein (Univ. Bremen)	RT-Tester	VnV	Ruberio Kretschmer (TWT)		
Silvano Dal Zilio (LAIS-CNRS)	Flare and Tiso, model-checking toolbox for Time Petri Nets	VnV	Stefan Rieger (TWT)		
Virgile Prevosto (CEA LIST)	Forma-G	VnV	David Mentré (MERCÉ)		
Christophe Gaston (CEA)	Diversity	VnV			

<https://github.com/openETCS/model-evaluation/wiki/Secondary-Tools-Analyses#assessment>

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T7.2 Repository

part of WP7: collects the various activities regarding selecting a tool and formal specification for modeling

375 commits 1 branch 0 releases 18 contributors

branch: master model-evaluation

Resolving <https://github.com/openETCS/model-evaluation/issues/59#issue...>

Commit	Message	Time
Michael Jastram	latest commit 623dd170b4	8 days ago
Munich_20130415	update	5 months ago
Munich_20130416	update	5 months ago
Munich_20130416_minutes	uploaded meeting minutes	5 months ago
Telco_Secondary_slides	Update README.md	10 days ago
VnV	Repository organization for the benchmark of secondary tools	3 months ago
management	Resolving https://github.com/openETCS/model-evaluation/issues/59#issue...	8 days ago
model	SysML model for "Management of Radio Communication" with derived SC...	21 days ago
platform	Fixed typo in directory name	3 months ago
safety	Repository organization for the benchmark of secondary tools	3 months ago

Code Issues 36 Pull Requests 0 Wiki

Pulse Graphs Network

HTTPS clone URL <https://github.com>

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`https://github.com/openETCS/model-evaluation`

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Aim

Means and tools to support VnV activities:

- Step and Phases (SSRS, model, code,...)
- Kind of properties (functional, performance, safety,...)
- Methods and tools (static verification, testing, formal verification,...)

Heterogeneous list of activities and solutions

⇒ **Difficulties to settle the criteria**

Active collaboration with WP4 partners:

- Active discussions on issue tracker (#157, #174)
- VnV user stories (on WP4)

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Active collaboration with WP4 partners:

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Candidates

Heterogeneous propositions:

- Directly linked to primary toolchain proposals: SCADE, Classical B
- Model-based testing: System C, Matelo, RT-Tester, SPENAT
- Model-Checking: UPPAAL, Fiacre and Tina
- Simulation: Diversity
- Formal Proof: Frama-C, Event-B

Agenda

Strong connected to WP4 first round activities:

- Contributions and review of the criteria until **Oct. 31**
- Final version of criteria template **Nov. 8**
- New candidate can be proposed until **Nov. 15**
- Final version of assessment for each proposal **Nov. 29**
- Final version of document **Dec. 6**
- Decision meeting **TBD** (Dec 2013-Jan 2014)

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Aim

Means and tools to support Safety activities:

- PHA, SHA,...
- Safety Requirement Specification and Allocation
- Safety Requirement VnV
- Safety Case

Heterogeneous list of activities and solutions

⇒ **Criteria based on WP4 T4 early document**

Active collaboration with WP4 partners: strong connections with VnV

Aim

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Heterogeneous list of activities and solutions

⇒ **Criteria based on WP4 T4 early document**

Active collaboration with WP4 partners: strong connections with VnV

Candidates

Heterogeneous propositions:

- Safety analysis: Safety Architect
- Requirement specification and safety Case: Goal Structuring Notation
- Formal Proof and Requirement allocation: CPN tools, Event-B and Rodin

Agenda

Strong connected to WP4 first round activities, in parallel of VnV:

- Contributions and review of the criteria until **Oct. 31**
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Aim

Means and tools to support model transformation and code generation:

- Depends on D7.1 decision
- Depends on how to use SysML
- Depends on model representation (EMF, textual, graphical,...)
- Traceability is a major items
- Reverse transformation ?

⇒ **Criteria have to be clarified**

Active collaboration from WP3, WP4 and WP7 partners is required

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Active collaboration from WP3, WP4 and WP7 partners is required

Candidates

- Directly linked to primary toolchain proposals: SCADE, Classical B
- Linked to EMF: Acceleo, ATL, QVTO, Xtend

Agenda

If active participation of End users (WP3, WP4, WP7 partners):

- Contributions and review of the criteria until Oct. 31
- Final version of criteria template Nov. 8
- Final version of assessment for each proposal Nov. 29
- Final version of document Dec. 6
- Decision meeting TBD

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Aim

Means and tools to support the management of:

- Artifacts (version, multi-users,...)
- Data: common dictionary
- Function: common dictionary and architecture
- Requirements: definition, traceability and allocation

⇒ **Criteria have to be clarified**

Active collaboration from SSRS, WP3, WP4 and WP7 partners is required

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Candidates

Heterogeneous propositions:

- Directly linked to primary toolchain proposals: SCADE, Classical B
- Linked to Eclipse: ProR, EMF client platform, EMF Store, Rodin
- Others: Matelo, GSN

Agenda

Short deadline, End-users reactivity required):

- Contributions and review of the criteria until Oct. 18
- Final version of criteria template Oct. 22
- Final version of assessment for each proposal Nov. 9
- Final version of document Nov. 15
- Decision meeting TBD

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Conclusion

- **Agenda is slipping**
- Decision on primary toolchain are needed
- **Feedbacks and active participation to End-Users (SSRS, WP3, WP4, WP7) required**
- Decision meeting to fix