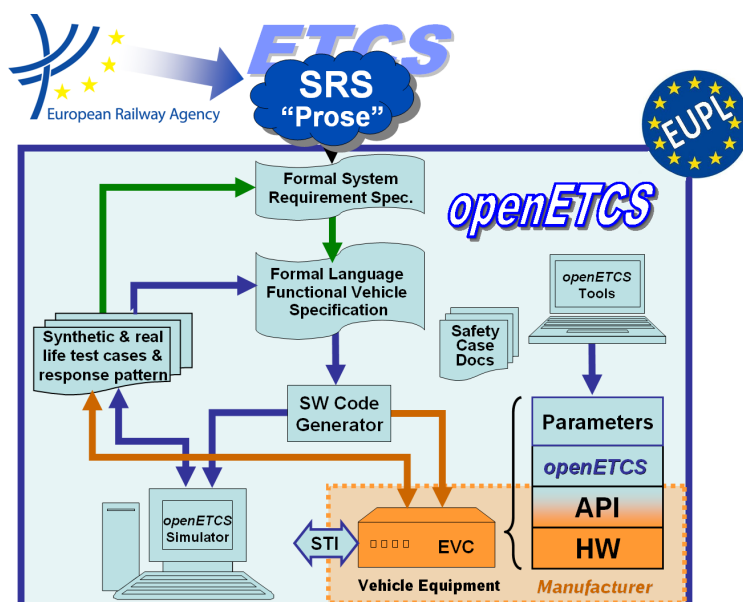


## Work-Package 7: “Toolchain”

## Toolchain Test Plan

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August 2014



## Funded by:


 Federal Ministry  
 of Education  
 and Research

 Région de  
 Bruxelles-  
 Capitale

 GOBIERNO  
 DE ESPAÑA  
 MINISTERIO  
 DE INDUSTRIA, ENERGÍA  
 Y TURISMO

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**Work-Package 7: “Toolchain”****OETCS/WP7/D7.3  
August 2014**

# Toolchain Test Plan

**Document approbation**

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Tool chain Test Plan

Prepared for openETCS@ITEA2 Project

**Abstract:** This document describes the way in which the Open ETCS tool chain will be tested in the validation stage, the test strategy covers, the OpenETCS interface and the plugins it works with.

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## Document Information

Document information	
Work Package	WP7
Deliverable ID or doc. ref.	xxx
Document title	Toolchain Test Plan
Document version	00.10
Document authors (org.)	Amaia Martija (SQS)

Review information	
Last version reviewed	
Main reviewers	

Approbation			
	Name	Role	Date
Written by	Amaia Martija	WP7 participant	14.08.2014
Approved by			

Document evolution			
Version	Date	Author(s)	Justification
00.10	14.08.2014	Amaia Martija	Document creation

# 1 Introduction to Toolchain Test Plan

## 1.1 Introduction

This document describes the way in which the Open ETCS platform will be tested in the validation stage, the test strategy covers, the OpenETCS interface and the plugins it works with.

## 1.2 Executive Summary

The main objective is to ensure the requirements of the toolchain, are properly provided, such the user functionality and the interoperability between the different plugins involved in the platform. The current document describes the strategy and objectives of the OpenETCS toolchain validation and details the validation test cases to be executed to the platform. The test cases have been design based on the functional specification and user's guides provided into github.

## 1.3 Intended Audience

The Tool chain Test Plan addresses all the stakeholders who are in the position to interact with OpenETCS tool chain.

- Project Manager
- QA Manager
- Tool chain WP Leader
- Tool chain Development Team
- Tool chain V&V team

## 1.4 Evolution

This document will be updated regularly with the evolution of the OpenETCS tool chain. The methods and tools to be applied during the development of the OpenETCS toolchain products will be decided based upon the results of the research activities carried out and the needed of the rest of WPs.

The Tool Chain Test Plan document shall be updated whenever:

- tests or the approach for conducting them are changed
- strategies or methodologies used in the Verification and Validation processes are modified
- a new tool is added to the toolchain
- a new tool or technique is incorporated in any of the tasks

## 1.5 References, Guidelines and Standards

References	
Name	Version/ Edition/ Date
Tool chain Development Plan	
Tool chain Qualification Process	

**Table 1. References**



## 2 OpenETCS Toolchain Test Plan

### 2.1 Test Strategy

The validation has to demonstrate that the openETCS tool chain covers all the functionality. This test strategy will be divided in four sides, the building test, installation test, functional test and performance test:

- Building testing: The main objective is to check the correct building of the toolchain.
- Installation test objective: The main objective will be to validate that the OpenETCS platform and the plugins, are correctly installed, and their interoperability is correctly working.
- Functional test objective: The main objective will be validating that the user's workflows are correctly created and to provide clear evidence that the platform performs as it should in every possible environment.
- Performance testing: The main objective is to verify the performance of the tool chain.

### 2.2 Test Items

IT: Brief introduction to the figure. Explanation about how it will grow -according to new feature requests and the needs of openETCS participants-

The features may be implemented by one or more tools and may also be implemented as plugins.

Currently, openETCS tool chain consists of the following components:

- Eclipse Kepler
- Eclipse Modeling Tools
- Eclipse Papyrus
- Eclipse RMF
- Eclipse EGit
- openETCS documentation
- openETCS DataDictionary
- openETCS tracing

The plugins that are going to be part of the first release of the test plan will be:

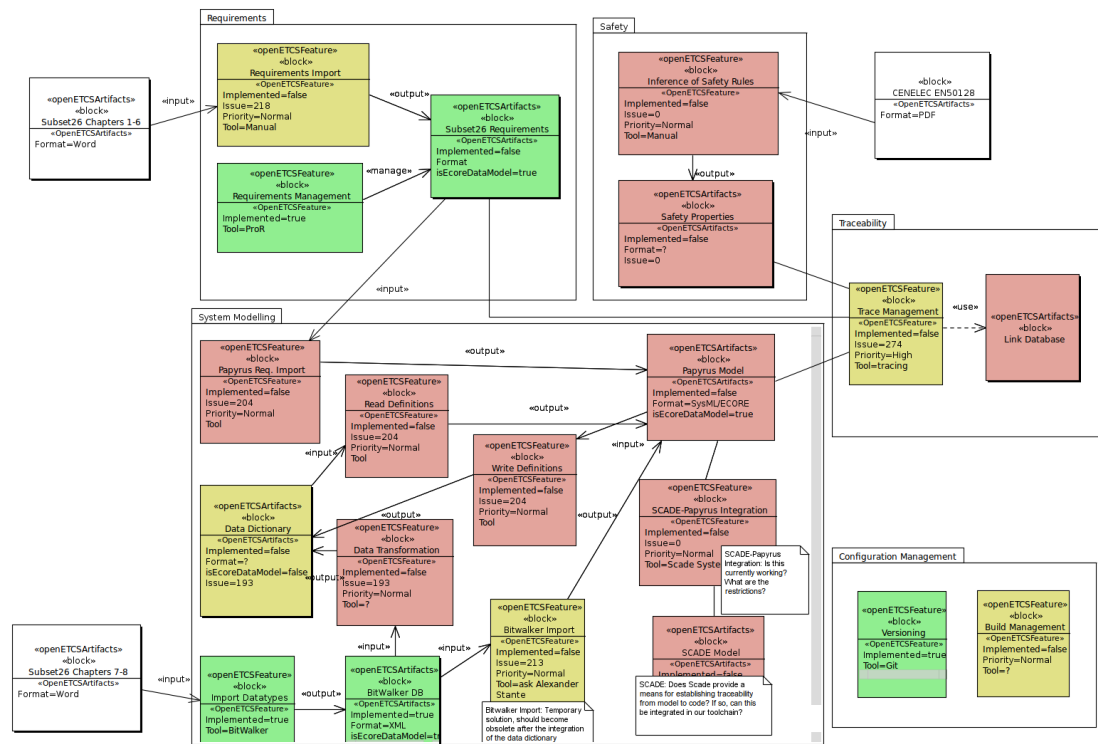


Figure 1. Tool Chain overview (20.02.14) –

Green Block: Implemented  
 Yellow Block: Work in Progress  
 Red Block: Not started  
 White Block: External Artifacts

- **Data Dictionary:** This plugin contains the data dictionary plugin which contains data structures, variables, messages, etc. from the ETCS System Requirements Specification (SRS). The plugin registers a UML model, which contains the information from the SRS. After registration, the UML model is available as a UML library.
- **Tracing:** The Tracing Features allow the linking of \*ProR Requirements\* and \*SysML Model Elements\*. This is realized within the requirements model by using the internal links (SpecRelations) and requirements that act as proxies to the SysML Model element. Note that both, links and proxies, can be extended with additional attributes.
- **Documentation:** The documentation plug-in generates Eclipse Help documentation (a hierarchy of HTML files) and PDF documentation from toolchain wiki pages saved as mediawiki.

## 2.3 Features to be tested

ProR	
1	Check if the RMF documentation is on Eclipse Help
2	Check if it is possible to import a ProR requirements model
3	Check if it is possible to import a SysML requirements model
4	Check if it is possible to create a link between ProR and SysML

5	Check if it is possible to add extended attributes to the created links
6	Check how are created the required type of data.
7	Check if it is possible to delete required type of data
8	Check the plugin configuration
9	...
Documentation	
1	Check if the documentation is on the eclipse help
2	Check if the links are correct in Eclipse Help
3	Check if the links are correct in the github wiki pages
4	Check if the links are correct in the PDF file
5	...
Data Dictionary	
1	

## 2.4 Item Pass / Fail Criteria

A test is considered passed when the results obtained are the expected results shown in the Test Case. If any of the expected results are not met, the test is considered failed.

## 2.5 Test Environment

The environments where is going to be tested the toolchain are based on different operating systems:

- Windows 64
- Windows 32
- Linux 64
- Linux 32
- MacOS 64
- MacOS 32

## 2.6 Test Deliverables

- Test Specifications
- Test Results Reports
- Test Data

## 2.7 Schedule

The plan of tasks related to the activities of the toolchain tests is detailed below:

Activity	Start Date	End Date
Test Plan Elaboration		
Test Plan Review		
Test Cases Specifications		
Test Cases Review		
Test Cases Execution		
Test Results Report		

### 3 OpenETCS Toolchain Test Specifications

#### 3.1 Tests Specifications

##### Interface

Ref.	Description	Expected Result
G1	Click on Open ETCS Eclipse execute file	The Open ETCS application is opened with the Welcome page
G2	Close Welcome page	OpenETCS main page open
G3	Check if project explorer menu is displayed	The Project explorer menu appear and the projects created are displayed

##### Papyrus

Ref.	Description	Expected Result
P.P.1	Go to Profile, select File > New > Papyrus Project	New papyrus project window is displayed
P.P.2	Enter project name	Project name was added
P.P.3	Select allocation for the project	If default location is selected, the default location is displayed If default location check box is not selected click
P.P.4	Select profile option and click next	The option was selected
P.P.5	Select a diagram name on "Initialization information window" Check "Select diagram kind" and "You can load a template" check box are working	The diagram name is correctly created and both options are working properly

##### Data dictionary

Ref.	Description	Expected Result
D.D.P.1	Click on the SysML model from papyrus model explorer and click import-> import registered package	The libraries to import window will open

D.D.P.2	Select OpenETCS Data Directory and click ok	The window is closed correctly
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## Documentation

Ref.	Description	Expected Result
D.P.1	In OpenETCS main page click on the top menu the help option	Help menu is displayed
D.P.2	Select help contents from the menu	Help-openETCS Extended Tool Construction Set will be displayed