OETCS/WP7/07.3.2

openETCS

ITEA2 Project
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Work-Package 7: “Toolchain”

OpenETCS Roadmap

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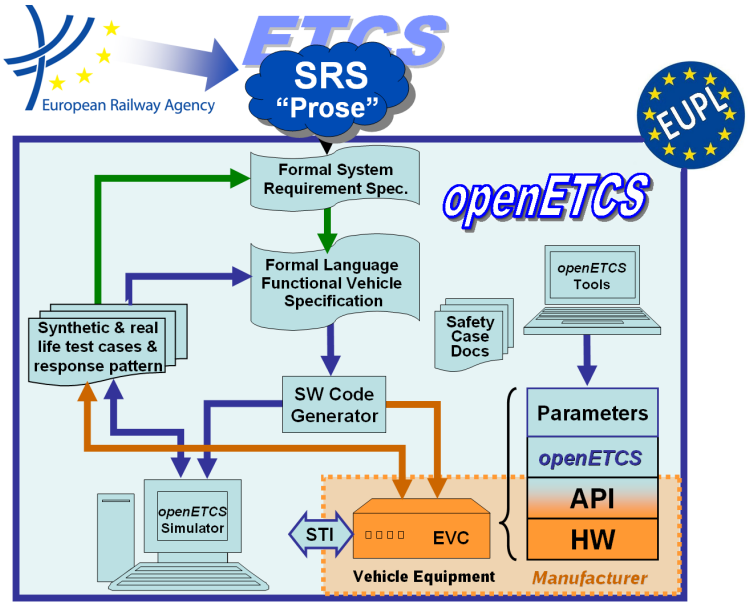
February 2014



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OpenETCS Roadmap

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OpenETCS : Tool Chain Roadmap

Prepared for ITEA2 openETCS consortium
Europa

Abstract: This document presents the OpenETCS tool chain Roadmap.

Table of Contents

Document Information

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1 OpenETCS Objectives

1.1 Goals

One of the goals of the openETCS project is to *"Provide a tool chain and process/methodologies for developing an on-board software that can fulfill the CENELEC requirements for SIL4 software"*

The openETCS tool chain is the implementation of the design process of the on board unit (OBU) according to the CENELEC EN 50128. The tool chain is the activities support for producing certifiable software such as:

- Software planning
- Requirements tracing
- Tool confidences
- Documentation/report production
- Testing
- Verification and validation

The tool chain also takes care of providing the following functioning infrastructure to allow robust distributed development within the defined life cycle.

- a continuous automated build system,
- mechanisms to upgrade tools in the platform,
- mechanisms to add tools to the chain at a later stage (without breaking compatibility),
- modification and change control manager,
- tool chain documentation system.

1.2 About this document

This Roadmap is written from the requirements of the WP2, the tools decision of WP7, and the needs of WP3 for the modeling part and WP4 for the safety, validation and verification part.

2 OpenETCS Feature Roadmap

2.1 Requirements and Traceability Activities

- Integrate requirement engineering tool **DONE**
- Import requirements from the Subset-026 **PARTIAL**
- Integrate requirement traceability tool

2.2 Modeling Activities

2.2.1 Handling data

- Import Data direct from subset-026 **PARTIAL**
- Mechanism to avoid variable, function artifacts name redundancy

2.2.2 Papyrus

- Integrate Papyrus **DONE**
- Restrict Papyrus use to openETCS requirements from D2.4
- Link Papyrus artifacts with imported data

2.3 Safety Activities

- Safety Rules import
- Safety checkers

2.4 Verification and Validation

- Model tester
- Model checker
- Model transformer
- Model simulator
- Code Simulator
- Code tester

2.5 Infrastructure Activities

2.5.1 Build System

- Build System **DONE**
- Automatic Test when new Build
- Versioning system for the tool chain **DONE**
- Versioning system for the artifacts
- Build documentation automatically

2.5.2 Documentation System

- Automatic documentation creation
- Tutorial edition

2.5.3 Tool chain Test

- Definition of the test process
- OpenETCS Test lab

