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Work-Package 3: “Modeling”

D3.6.1 openETCS Functional Model

First Iteration Functional Model: ETCS Kernel Functions

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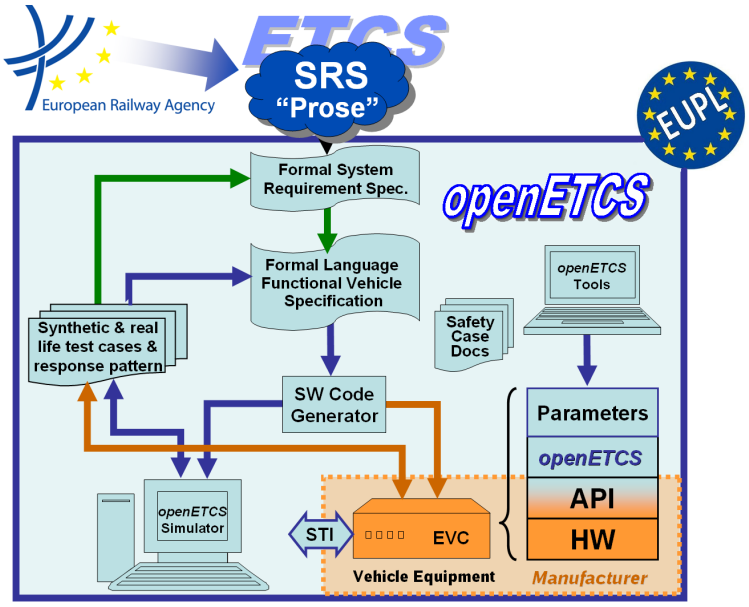

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Document approbation

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Abstract: The document is used to define the deliverable of the functional model.

Modification History

Version	Section	Modification / Description	Author
0.1	all	Initial document providing the structure	Bernd Hekele
0.2	all	added further text	Peter Mahlmann

Table of Contents

1 Introduction

This document represents deliverable D3.6.1 “First iteration of functional model” of the openETCS ITEA2 project and deploys the first iteration of the functional model of the ETCS onboard unit (OBU) as specified in subset-026 (system requirements specification of the ETCS OBU provided by the European Railway Agency (ERA)).

The functional model provides a semi-formal model of subset-026 and is directly linked with deliverable D3.5.1 “First iteration of system specification model”, which focuses on the corresponding system architecture.[1]

This deliverable covers the scope of the first iteration of modeling in the openETCS project. Here, the focus was on providing kernel functions allowing a running train to read balise telegrams and determine its position. The deliverable consists of three major parts:

- the Scade Model,
- C-code generated by Scade code generator, and
- a textual documentation of the functional model.

The latter is also directly generated from the Scade model. The Scade model itself is located in the projects public GitHub repository and can be found here:

`https://github.com/openETCS/modeling/releases/tag/v0.1-D3.6.1`.

The textual documentation of the functional model can be found in Appendix A of this deliverable.

[1] D3.5.1 is publicly available via the openETCS GitHub repository here: `https://github.com/openETCS/modeling/blob/master/deliverables/D3.5.1.pdf`

Appendix A: Textual documentation of the functional model

The textual documentation is directly generated from the functional model via Scade. Due to the sheer size of the textual documentation, i.e. more than 400 pages, it is not directly included in this document to keep D3.6.1 itself printable. The separate appendix can be found on the public openETCS GitHub repository:

`https://github.com/openETCS/modeling/blob/master/deliverables/D3.6.1.appendix.pdf`