Verification Report for Architecture and Design of Train Positioning Version 0.1

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Abstract

This verification report presents the verification results for the architecture, interfaces and design artifacts for the component "Train Positioning" in the overall openETCS Kernel architecture.

1 Roles

- Fausto - Design (PM)
- Jens - Verification of SW/Implementation
- Design/Implementation
- Jan Welvaarts - Design
- Vincent - Simulation/Design
- Marc - Verification
- Jan Welte - Verification
- Bernd Hekele - Verification

2 Verification Object

2.1 Identity of Verification Object

by Jan Welte and Marc Behrens
Contant:

- 2 Dokuments
- relations
- historical development
- claim of same approach

Verification object 1: ***openETCS Determine Train Location Procedure***

Verification object 2: ***Train Position and Locations***

This sections shall provide all basic information defining the *<verification object>*.
<architecture and design artifact(component)>
<designers>
<Covered Software Requirement Specifications>
<Related Systems/Components>

2.2 Configuration related Components

3 Software Architecture, Interface and Design Verification

This sections shall provide all verification results concerning the architecture and interface for the verification object.

For all verification aspects addressed in the following section the following 3 points shall be state clearly:

1. Responsible verifier
2. Use verification strategy and technique (with reference to the V&V Plan)
3. Verification results (level of conformity, detected errors or deficiencies and made assumptions)

The following aspects have to be verified (in accordance with EN 50128 7.3.4.42):

3.0.1 Internal Consistency

by Jan Welte and Marc Behrens
Contant:

- relations
- historical development
- claim of same approach
- of naming between documents consistence

Are the internal functional allocation and all related input and output consistent?

3.0.2 Adequacy to fulfill Software Requirements

by Bernd Gonska
content

- fulfilled SRS functionality
- differnces in approach to SRS

Are the listed functions and all input and outputs adequate to cover the intended Software Requirements? Therefore the following 2 aspects shall be assess:

- Consistency
- Completeness

3.0.3 Readability and Traceability

by Marc Behrens
Content

- traceability of requirements
- unique references

Are all related system and software requirements uniquely referenced and is the relationship to other documents clearly defined? Are all parts of the architecture and inputs and outputs referenced to the related requirements. Are the elements referred to in the same way in all documents?

3.0.4 Consideration of hardware and software constraints

Hardware design is out of scope of the openETCS project. No hardware assumptions have been formulated so far.
Software constraints encompass

- restrictions implied by the coding standards
- constraints by software design method
- timing/performance constraints
- memory constratints
- constraints implied by the interfacing system (e.g. decoder and encoder functions)
- the operating system

References