OETCS/WP2/?

openETCS

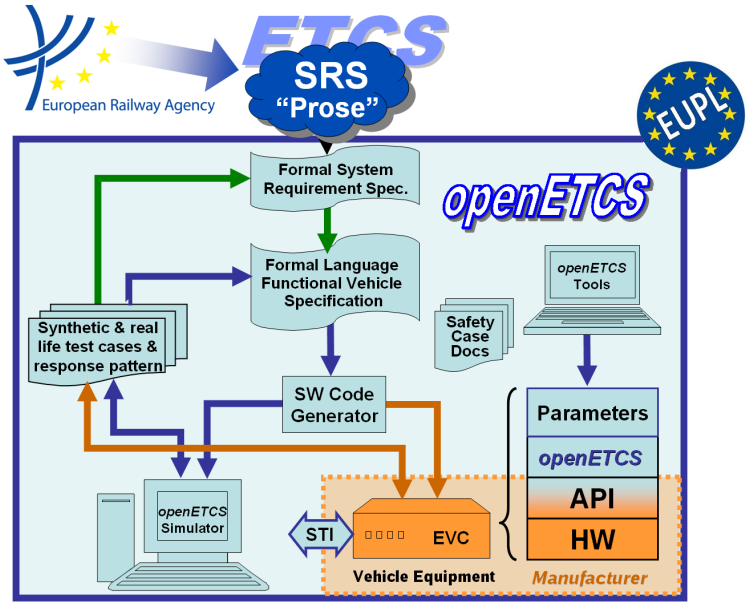
ITEA2 Project
Call 6 11025
2012 – 2015

Work-Package 2

Scrum Prozess ETCS

Abdelnasir Mohamed and Jan Welte

August 2015



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Scrum Prozess ETCS

Document approbation

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Abstract:

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Figures and Tables

Figures

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1 Introduction

Nasir

Short introduction to this document.

- extension to QA-Plan and Process Description

1.1 Purpose

Nasir

purpose of this document

- showing principals of the iterative work in openETCS development life cycle
- explaining agile principles to coordinate work and complete artifacts

1.2 Reference Documents

This document essentially refers to the following standards, ETCS specification documents and openETCS project documents.

- **ISO 9000** — 12/2005 — *Quality management*
- **ISO 9001** — 12/2008 — *Quality management systems — Requirements*
- **ISO 25010** — 03/2011 — *Systems and software engineering – Systems and software Quality Requirements and Evaluation (SQuaRE) – System and software quality models*
- **CENELEC EN 50126-1** — 01/2000 — *Railways applications — The specification and demonstration of Reliability, Availability, Maintenability and Safety (RAMS) — Part 1: Basic requirements and generic process*
- **CENELEC EN 50128** — 10/2011 — *Railway applications – Communication, signalling and processing systems – Software for railway control and protection systems*
- **CENELEC EN 50129** — 05/2003 — *Railway applications — Communication, signalling and processing systems — Safety related electronic systems for signalling*
- **CCS TSI** — *CCS TSI for HS and CR transeuropean rail has been adopted by a Commission Decision 2012/88/EU on the 25th January 2012*
- **SUBSET-026** 3.3.0 — *System Requirement Specification*
- **SUBSET-091** 3.2.0 — *Safety Requirements for the Technical Interoperability of ETCS in Levels 1 & 2*

- **SUBSET-088** 2.3.0 — *ETCS Application Levels 1 & 2 - Safety Analysis*
- **OpenETCS FPP** — *Project Outline Full Project Proposal Annex OpenETCS* – v2.2
- **OpenETCS D2.2** – Report on CENELEC standard
- **OpenETCS D2.3** – Definition of the overall process for the formal description of ETCS and the rail system it works in
- **OpenETCS D2.4** – Definition of the methods used to perform the formal description

1.3 Glossary

ACedit	Assurance Case Editor
ARM	Argumentation Metamodel
ETCS	European Train Control System
ERA	European Railway Agency
FMEA	Failure Mode Effect Analysis
GSN	Goal Structured Notation
MoRC	Management of Radio Communication
RAMS	Reliability, Availability, Maintainability and Safety
SIL	Safety Integrity Level
SRS	System Requirement Specification
THR	Tolerable Hazard Rate
V&V	Verification & Validation

1.4 Background Information

1.4.1 Agile Development

Jan

really short introduction to the concept of agile development overall

1.4.2 Scrum

Nasir

introduction to Scrum

based on text in QA-Plan as it fits

- Concept of Scrum
- Roles
- Scrum Process

2 Agile Development in OpenETCS

Jan

Basic concept of agile development in openETCS. Allocation of agile work principles to

- allocating agile work activities to the iterative work in openETCS development life cycle (phases nd artifacts)
- describe overlap between EN 50128 roles and Scrum roles

3 Scrum of Scrum

Nasir

Short introduction to principle of splitting work between different teams, as required by the EN 50128

Principles of grooming work and filling backlogs for distributed Scrum Teams by dynamic work allocation.

Text based on wiki page by Marc Behrens

Objective: Ongoing verification and validation of openETCS development artifacts are performed within the framework of openETCS scrum process. This page describes the interface of agile verification and validation to the top level customer as well as the scrum process within the verification and validation itself.

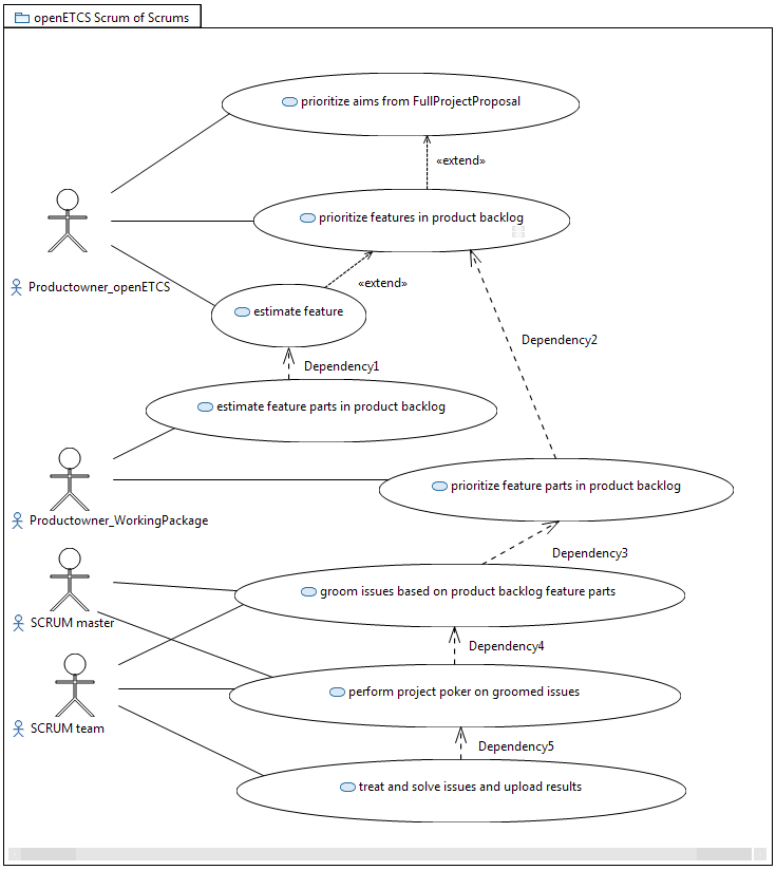

Figure 1. openETCS scrum of scrums

Within the agile scrum process of openETCS different backlogs are used to synchronise the top level project goals with the tasks performed within the project:

- Each backlog itself consists of items which are represented within the github issue tracker.

- For each backlog a Product Owner is assigned to coordinate and prioritize the items.
- Each Story Point (SP) is estimated to be worth one person day.

The Product Backlog (Product Owner: Klaus-Rüdiger Hase) The Product Backlog consists of top level *Features* by which the product is described.

- Each Feature itself is estimated by the product owner on how many Story Points this Feature is worth.
- A Feature itself is divided into **Feature Parts**.
- A Feature Part is related directly to a working package and the repository the work is documented in.
- Each Feature Part itself is estimated and prioritized by the product owner on how many Story Points this Feature Part is worth.

By estimating the feature the feature becomes accepted on product Level. The Product Backlog is maintained during a regular meeting.

Transferring the Features from the *Product Backlog* to the Verification and Validation Sprint Backlog During regular grooming sessions the scrum team extracts the items with highest priority out of the Product Backlog and refines them to issues within the repository mentioned within the Feature Part. On these issues Project Poker is performed on and by this Story Points are assigned. The decision on which items enter the Sprint Backlog is based on the maximum benefit analysis taking into account the priority as well as the story points.

Sprint Backlog The *Sprint Backlog* consists of issues which are processed during the sprint. During the sprint the success is tracked against the Sprint Backlog. The Story Points are earned once the complete result of what has been groomed is uploaded to the github.

4 Release Principals

Jan

principles of artifact releases (specially models) and their verification and validation configuration management of design artifacts, test specifications and test reports change management via issues, status of documents, criteria for releases and assessment

5 Conclusion

can be left open for now

final conclusion of content