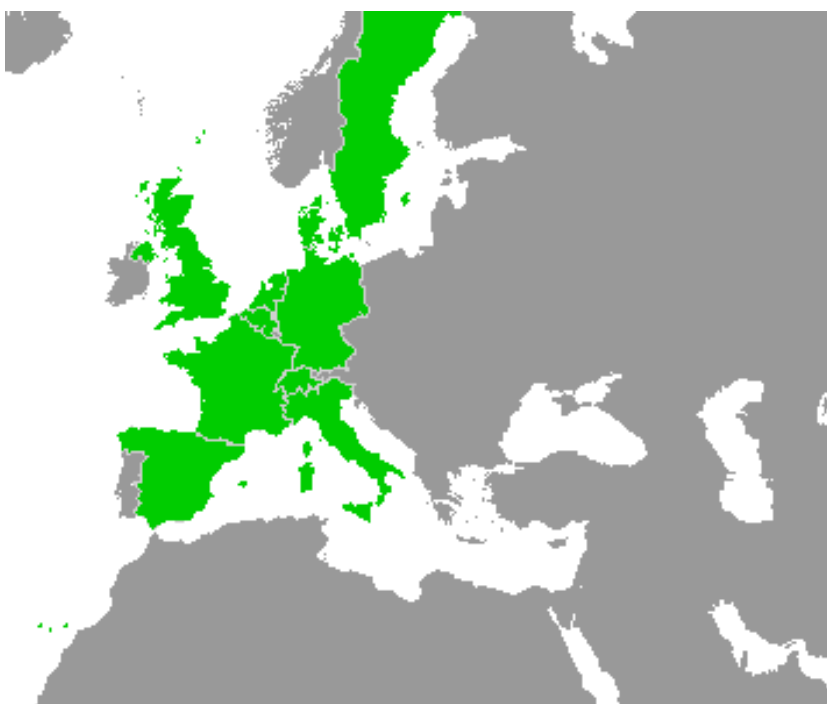Work-Package 6: "Dissemination, Exploitation and Standardization"

Dissemination Plan and Report

First version of the project Dissemination Plan (D6.1)

Dr. Michael Ditze, Dr. Frank Golatowski, Dr. Peter Mahlmann, Dr. Stefan Rieger, Hansjörg Manz, Jan Welte and @all: Add your name if you contributed

March 2013

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Work-Package 6: "Dissemination, Exploitation and Standardization"

Dissemination Plan and Report

First version of the project Dissemination Plan (D6.1)

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Deliverable

Prepared for   ITEA2 openETCS consortium
                Europa

openETCS

Abstract: This document is the first version of the openETCS dissemination plan and report. It represents a preliminary version of the project dissemination strategy and covers past and as well as planned dissemination activities. There will be two updated versions to this document (D6.3 and D6.5).

Table of Contents

Figures and Tables

Figures

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1   Introduction

This document is the first version of the openETCS dissemination plan and report. It represents a preliminary version of the project dissemination strategy and covers past and as well as planned dissemination activities.

The document is structured as follows. In the Sections 2, 3 and 4 we list past dissemination activities and publications as well as future opportunities and events. The individual items are classified by their status (past activities/publications or planned future activity) and their type (conference, exhibition, journal, etc.). For past items details like date, publisher and/or venue as well as contributors and an abstract are listed, whereas for planned events we mention the interested partners and a description together with the planned contribution and/or justification of the relevance for the project.

Section 5 lists events organised by the openETCS project that provide a significant dissemination potential. In Section 6 we present our current plans regarding standardisation of project results.

Sections 7, 8 and 9 focus on the open source activities, a central aspect of openETCS, additional dissemination activities not covered by the other sections and the means of communication within the project and with the outside world, respectively.

2   Exhibitions

2.1   ITEA2/Artemis Symposium

To be completed

2.2   Exhibitions and Trade Shows

PLANNED   INNOTRANS

Date:	2014
Location:	Berlin, Germany
Interested Partners:	Alstom, Deutsche Bahn, ERSA, ERTMS-Solutions, General Electric, Siemens, SNCF

INNOTRANS will provide an opportunity to present key results, e.g. modelling tools and simulators. INNOTRANS, the world's largest trade fair for railways and public transit, addressing the entire railway industry. Since several openETCS partners like Alstom, Deutsche Bahn, ERSA, ERTMS-Solutions, General Electric, Siemens, SNCF, etc. are regularly represented at that industrial fair, the openETCS subject could be featured specifically at their particular exhibition having a best possible outreach to make the approach well known.

PLANNED   BICCnet Innovation Forum Embedded Systems

Frequency:	annual
Next Event:	April 2013 (Munich, Germany)
Website:	`http://bicc-net.de/termine/termin/innovation-forum-embedded-systems/`
Interested Partners:	Fraunhofer ESK

Presentation of openETCS partner results on booth, To be completed by Fraunhofer ESK

PLANNED **Embedded World Conference**

Frequency: annual

Next Event: March 2013 (Nuremberg, Germany)

Website: `http://www.embedded-world.eu/`

Interested Partners: Fraunhofer ESK

Presentation of openETCS partner results on booth, To be completed by Fraunhofer ESK

PLANNED **Rencontre du numérique de l'ANR**

Frequency: annual

Next Event: April 2013 (Paris, France)

Interested Partners: CEA LIST

Presentation of (French) projects related to openETCS; CEA LIST plans to present the Frama-C tool.

3 External Conferences

3.1 Railway, Vehicular and Transportation

PAST **12th International SIGNAL+DRAHT-Congress 2012**

Type of Contribution: Talk

Title: openETCS: Von der Idee zur Praxis

Speaker: Klaus-Rüdiger Hase (DB)

Date: 08-09/11/2012

Location: Fulda, Germany

The openETCS project has been presented at the congress, which took place under the motto "How will signaling technology evolve over the next ten to fifteen years?". The focus was predominantly on the development of the railway networks as well as on the expected changes in the areas of automatic train control, route protection, level crossing protection and control technology. Therefore, this congress was an ideal platform to present the project to a large audience of highly distinguished experts.

PAST **APTA/UIC High-Speed Congress 2012**

Type of Contribution: Talk

Title: openETCS: Applying Open Proof's to the European Train Control System

Speaker: Klaus-Rüdiger Hase (DB)

Date: 10-13/07/2012

Location: Philadelphia, PA, USA

The Congress focuses on highspeed railway traffic. Here, the openETCS project has been presented a large audience of highly distinguished experts and has especially been presented to the non-european audience.

`PLANNED` **ERTMS World Conference**

Frequency: bi-annual

Next Event: 2014 (Istanbul, Turkey)

Website: `http://www.ertms-conference2014.com`

As the ETCS standard is one part of the European Rail Traffic Management System (ERTMS) this conference is highly recommended to present openETCS.

`PLANNED` **Moderne Schienenfahrzeuge**

Location: Graz, Austria

Organisator: TU Graz

Website: `http://www.schienenfahrzeugtagung.at/homeE.htm`

@all: Please check if this is still relevant and complete it. Otherwise this entry will be removed.

`PLANNED` **SIGNAL+DRAHT-Congress**

Frequency: annual

Website: `http://www.eurailpress.de/events/`
                              `eurailpress-events.html`

@all: Please check if this is still relevant and complete it. Otherwise this entry will be removed.

`PLANNED` **IEEE Vehicular Technology Conference**

Frequency: semi-annual

Next Events: June 2013 (Dresden, Germany), Sept. 2013 (Las Vegas, USA)

Website: `http://www.ieeevtc.org/vtc2013spring`

Interested Partners: @all: check whether this is relevant for you!

This semi-annual flagship conference of the IEEE Vehicular Technology Society will bring together individuals from academia, government, and industry to discuss and exchange ideals in the fields of wireless, mobile, and vehicular technology. The conference will feature world-class plenary speakers, tutorials, and technical as well as application sessions.

`PLANNED` **International Conference on Design and Operation in Railway Engineering (Comprail)**

Frequency: bi-annual

Next Event: 2014

Interested Partners: Fraunhofer ESK (Session: Computer techniques and simulations)

The aim of the conference is to review the latest developments in railway engineering and update the use of advanced systems, promoting general awareness throughout the business management, design, manufacture and operation of railways.

`PLANNED` **International Railway Safety Conference (IRSC)**

Frequency: bi-annual

Next Event: 2014

@all: Please check if this is still relevant and complete it. Otherwise this entry will be removed.

`PLANNED` **Conference on Railway Engineering (CORE)**

Frequency: bi-annual

Next Event: 2014

@all: Please check if this is still relevant and complete it. Otherwise this entry will be removed.

`PLANNED` **Fachtagung Technische Zuverlässigkeit (TTZ)**

Frequency: bi-annual

Next Event: April 2013 (Leonberg, Germany)

Website: `http://www.vdi-wissensforum.de/de/nc/angebot/`
                                    `detailseite/event/02TA502013`

@all: Please check if this is still relevant and complete it. Otherwise this entry will be removed.

`PLANNED` **World Congress on Railway Research 2013 (WCRR 2013)**

Frequency: bi-annual

Next Event: Nov. 2013 (Sydney, Australia)

Website: `http://www.wcrr2013.org/`

Interested Partners: TU Braunschweig

The World Congress on Railway Research is the world's foremost international forum for the promotion, development and exchange of the latest innovations in the global rail industry.Therefore it can be used to promote openETCS and our first results to researchers, manufacturers and operators from across the global rail industry.

`PLANNED` **2013 IEEE International Conference on Intelligent Rail Transportation (IEEE ICIRT 2013)**

Next Event: Aug. 2013 (Beijing, China)

Website: `http://www.ieee-icirt.org/`

Interested Partners: TU Braunschweig

Since their is a high interest in openETCS and its results in Asia, the 2013 IEEE International Conference on Intelligent Rail Transportation provides a forum to communicated with potential partners. The theme of ICIRT 2013 is "Safe, Green & Intelligent Rail".

3.2   Verification and Validation

`PAST` **FORMS/FORMAT 2012**

Type of Contribution: Conference Paper and Talk

Title: Using ERTMSFormalSpecs to model ERTMS braking curves

Authors: L. Ferier, S. Lukicheva and S. Pinte (ERTMS Solutions)

Date: 11-13/12/2012

Location: Braunschweig, Germany

Website: `http://www.forms-format.de`

To be completed by ERTMS Solutions

PAST **10th International Conference on Software Engineering and Formal Methods (SEFM)**

Type of Contribution: Conference Paper and Talk

Title: Frama-C: a Software Analysis Perspective

Author: Virgile Prevosto (CEA LIST)

Date: 01-05/10/2012

Location: Thessaloniki (Greece)

Publisher: Springer (LNCS)

Website: `http://sefm2012.city.academic.gr/`

To be completed by CEA LIST

PAST **24th IFIP International Conference on Testing Software and Systems (ICTSS)**

Type of Contribution: Conference Paper and Talk

Title: Off-line test case generation for timed symbolic model-based conformance testing

Author: Christophe Gaston (CEA LIST)

Date: 19-21/11/2012

Location: Aalborg (Denmark)

Publisher: Springer (LNCS)

Website: `http://ictss2012.aau.dk/`

To be completed by CEA LIST

PLANNED **11th IEEE International Conference on Industrial Informatics (INDIN)**

Date: 29-31/07/2013

Location: Bochum (Germany)

Interested Partners: DB, ERTMS Solutions, TWT, University of Rostock

TWT, Deutsche Bahn, the University of Rostock, and the project-external partner Infineon will organize a special session "Ensuring Safety in Industrial Critical Systems" at this conference. The purpose of the workshop is to leverage the discussion with respect to development methods of embedded safety-critical systems in transportation, thus building the foundation for an ecosystem of stakeholders and for dissemination of project results. Several contributions from the openETCS project are expected.

PLANNED **IFIP International Conference on Testing Software and Systems (ICTSS)**

Frequency: annual

Interested Partners: CEA LIST

The well-established ICTSS series of international conferences addresses the conceptual, theoretic, and practical challenges of testing software systems, including communication protocols, services, distributed platforms, middleware, embedded systems, and security infrastructures.

`PLANNED` **European Safety and Reliability Conference (ESREL)**

Frequency:	annual
Next Event:	Sept. 2013 (Amsterdam, Netherlands)
Website:	`http://www.esrel2013.org/`

Safety, reliability and risk management become more and more important in an always more challenging and competitive environment, in every industry and human activity: multidisciplinary approaches to safety and reliability engineering and risk management become more and more necessary and attractive.

This annual conference will provide a forum for presentation and discussion of scientific works covering theories and methods in the field of risk, safety and reliability, and their application to a wide range of industrial, civil and social sectors and problem areas. ESREL 2011 will also be an opportunity for researchers and practitioners, academics and engineers to meet, exchange ideas and gain insight from each other.

`PLANNED` **$\lambda\mu$ Symposium**

Frequency:	bi-annual
Next Event:	2014 (France)
Website:	`http://www.imdr.fr/en/sommaire/index.php`
Interested Partners:	ALL4TEC

French safety and reliability conference, To be completed by ALL4TEC

`PLANNED` **Nasa Formal Methods Symposium (NFM)**

Frequency:	annual
Next Event:	May 2013 (Moffet Field, USA)
Website:	`http://ti.arc.nasa.gov/events/nfm-2013/`
Interested Partners:	CEA LIST

The NASA Formal Methods Symposium is a forum for theoreticians and practitioners from academia, industry, and government, with the goals of identifying challenges and providing solutions to achieving assurance in mission- and safety-critical systems.

`PLANNED` **Integrated Formal Methods (iFM)**

Frequency:	annual
Next Event:	June 2013 (Turku, Finland)
Website:	`http://www.it.abo.fi/iFM2013/`
Interested Partners:	CEA LIST

The iFM conference series seeks to further research into hybrid approaches to formal modeling and analysis; i.e., the combination of (formal and semi-formal) methods for system development, regarding modeling and analysis, and covering all aspects from language design through verification and analysis techniques to tools and their integration into software engineering practice.

`PLANNED` **FORMS/FORMAT 2014**

Frequency: bi-annual

Next Event: Jan. 2014 (Braunschweig, Germany)

Website: `http://www.forms-format.de`

Interested Partners: TU Braunschweig

The symposium FORMS/FORMAT 2012 offers scientists facing formal techniques, practitioners and managers, developers and consultants of automotive and railway industries as well as traffic system operators with interest in formal methods an accepted platform for the exchange of scientific experience and the transfer of practical description means, methods and tools for complex automation systems. With its focus on formal methods and transportation it provides an ideal forum to present openETCS and its results.

`PLANNED` **IFIP International Conference on Formal Techniques for Distributed Systems**

Interested Partners: Institut Telecom

To be completed by Institut Telecom

`PLANNED` **International Conference on Testing Software and Systems**

Interested Partners: Institut Telecom

To be completed by Institut Telecom

`PLANNED` **International Conference on Software Engineering and Formal Methods**

Interested Partners: Institut Telecom

To be completed by Institut Telecom

`PLANNED` **IEEE International Conference on Software Testing**

Interested Partners: Institut Telecom

To be completed by Institut Telecom

3.3 Software Engineering and Methodologies

`PLANNED` **Workshop on Certification and Model-Driven Development of Safety Critical Software (ZeMoSS)**

Date: 27/02/2013

Location: Aachen, Germany

Website: `http://zemoss.in.tu-clausthal.de/`

Interested Partners: DLR

The requirements for software quality of safety critical systems are very high, especially for the aspects of functional safety and information security. This German workshop covers among others the topics of model-driven development, integration of safety and security, and certification of open source software. Thus it is highly relevant for the project.

`PLANNED` **Embedded Real Time Software and Systems (ERTS^2)**

Frequency:	annual
Next Event:	2013 (France)
Website:	`http://www.erts2012.org/`
Interested Partners:	ALL4TEC

The ERTS^2 Congress is a unique European cross sector event on Embedded Software and Systems, a platform for top-level science with representatives from universities, research centers and industries.

`PLANNED` **International Conference on Model Driven Engineering Languages & Systems (MODELS)**

Frequency:	annual
Next Event:	Sep., Oct. 2013 (Miami, USA)
Website:	`http://www.modelsconference.org/`
Interested Partners:	Fraunhofer ESK

To be completed by Fraunhofer ESK

`PLANNED` **IEEE International Conference on Software Engineering (ICSE)**

Frequency:	annual
Next Event:	May 2013 (San Francisco, USA)
Website:	`http://2013.icse-conferences.org/`
Interested Partners:	Fraunhofer ESK, Institut Telecom

The International Conference on Software Engineering (ICSE) is the premier software engineering conference, providing a forum for researchers, practitioners and educators to present and discuss the most recent innovations, trends, experiences and concerns in the field of software engineering.

`PLANNED` **Embedded World Conference**

Frequency:	annual
Next Event:	March 2013 (Nuremberg, Germany)
Website:	`http://www.embedded-world.eu/`
Interested Partners:	Fraunhofer ESK

To be completed by Fraunhofer ESK

`PLANNED` **BICCnet Innovation Forum Embedded Systems**

Frequency:	annual
Next Event:	April 2013 (Munich, Germany)
Website:	`http://bicc-net.de/termine/termin/` `innovation-forum-embedded-systems/`
Interested Partners:	Fraunhofer ESK

To be completed by Fraunhofer ESK

`PLANNED`   **IEEE/ACM International Conference on Automated Software Engineering**

Next Event: Sept. 2013 (Essen, Germany)

Website: http://ase2012.paluno.uni-due.de/

Interested Partners: Institut Telecom

To be completed Institut Telecom

`PLANNED`   **International Conference on Quality Software**

Interested Partners: Institut Telecom

To be completed Institut Telecom

`PLANNED`   **ACM Symposium on Applied Computing (SAC)**

Frequency: annual

Next Event: Feb. 2013 (Coimbra, Portugal)

Website: `http://acm.org/conferences/sac/`

Interested Partners: CEA LIST, Institut Telecom

Over the past years, the ACM Symposium on Applied Computing (SAC), the primary SIGAPP Annual Conference, has become a primary forum for applied computer scientists, computer engineers, software engineers, and application developers from around the world to interact and present their work.

`PLANNED`   **Joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering**

Interested Partners: Institut Telecom

To be completed Institut Telecom

`PLANNED`   **IEEE International Symposium on High Assurance Systems Engineering**

Interested Partners: Institut Telecom

To be completed Institut Telecom

`PLANNED`   **International Conference on Software Engineering and Knowledge Engineering**

Interested Partners: Institut Telecom

To be completed Institut Telecom

`PLANNED`   **Asia-Pacific Software Engineering Conference**

Interested Partners: Institut Telecom

To be completed Institut Telecom

3.4   Open Source

`PLANNED` **EclipseCon Europe**

Frequency:	annual
Next Event:	Oct. 2013 (Ludwigsburg, Germany)
Website:	`http://www.eclipsecon.org`
Interested Partners:	EclipseSource

EclipseCon is one of the largest open source conferences of the world. Several consortia such as the Automotive Group and the OPEES group are presenting their results and are looking for potential collaboration partners.
@EclipseSource: Please check, whether these data are correct.

3.5 General Computer Engineering and Computer Science

`PLANNED` **International Conference on Information Systems Security**

Interested Partners:	Institut Telecom

To be completed Institut Telecom

4 Journals and Magazines

`PAST` **European Railway Review, Volume 18, Issue 3, 2012**

Type of Contribution:	Article
Title:	openETCS: Applying 'Open Proofs' to European Train Control
Pages:	30–34
Author:	Klaus-Rüdiger Hase (DB)
Publischer:	Russell Publishing Ltd., Kent, UK
Website:	`http://europeanrailwayreview.com/tag/openetcs`

European Railway Review is the leading bi-monthly technical journal for the European rail industry. Featuring articles and news about the latest technologies and developments, the magazine is essential reading for people involved in the railway business. Here, an overview article of the openETCS project, covering the technical background and the project goals, has been published by DB Netz AG.

`PLANNED` **Networking Sciences**

Interested Partners:	Institut Telecom

To be completed by Institut Telecom

`PLANNED` **Annals of Telecommunications**

Interested Partners:	Institut Telecom

To be completed by Institut Telecom

`PLANNED` **Computer Networks**

Interested Partners:	Institut Telecom

To be completed by Institut Telecom

`PLANNED` **Journal of Statistical Software**

Website: http://www.jstatsoft.org/

Interested Partners: Institut Telecom

To be completed by Institut Telecom

`PLANNED` **Software Tools for Technology Transfer (STTT)**

Website: http://sttt.cs.uni-dortmund.de/

Interested Partners: CEA LIST

To be completed by CEA LIST

`PLANNED` **SIGNAL+DRAHT**

Website: http://www.eurailpress.de/verlag/zeitschriften/
signal-draht/profil.html

@all, especially DB: Check whether this is still relevant, then please complete it. Otherwise it will be removed.

`PLANNED` **International Railway Journal (IRJ)**

Website: http://www.railjournal.com

@all, especially DB: Check whether this is still relevant, then please complete it. Otherwise it will be removed.

`PLANNED` **Eisenbahntechnische Rundschau (ETR)**

Website: http://www.eurailpress.de/verlag/zeitschriften/
eisenbahntechnische-rundschau/profil.html

@all, especially DB: Check whether this is still relevant, then please complete it. Otherwise it will be removed.

`PLANNED` **ZEV Rail**

Website: http://www.zevrail.de

@all, especially DB: Check whether this is still relevant, then please complete it. Otherwise it will be removed.

-

5 Events Organised by openETCS Project Partners

`PAST` **CENELEC Course**

Date: 10/12/2012

Location: Paris, France

Organisator: ALL4TEC

Participants: openETCS consortium

Introduction to the CENELEC standard (EN 50128) which is highly relevant to openETCS. @ALL4TEC: Was this workshop open for external people to attend or just an internal event?

`PAST` **ERTMSFormalSpecs Workshop**

Date: 17-18/12/2012

Location: Brussels, Belgium

Organisator: ERTMS Solutions

Participants: openETCS consortium, ERA, RFF, DVIS

WP3a/b tasks contributions, @ERTMS Solutions: Was this workshop open for external people to attend or just an internal event?

`PLANNED` **Workshop on Advances in Model Based Testing**

Organisator: Institut Telecom

To be completed by Institut Telecom

`PLANNED` **International Summer School on Training And Research On Testing**

Date: July 2013

Location: Volterra, Italy

Organisator: Institut Telecom

To be completed by Institut Telecom

`PLANNED` **Workshop on Formal Methods in the Development of Software**

Organisator: Institut Telecom

To be completed by Institut Telecom

`PLANNED` **International Workshop on Security Testing**

Organisator: Institut Telecom

To be completed by Institut Telecom

`PLANNED` **Test4Rail Symposium**

Date: Q4/2013

Location: Braunschweig

Organisator: DLR

To be completed by DLR

`PLANNED` **openETCS Conference 2013**

Date: Q4 2013

Participants: openETCS consortium

Approximately by the End of 2013 a mid-term conference under the patronage of the UIC (Union Internationale des Chemins de Fer, engl.: International Union of Railways) in Paris is planned. It will be attracting potential users, which are railway companies world wide.

<div style="text-align:center">PLANNED **openETCS Conference 2015**</div>

Date: 2015

Participants: openETCS consortium

After finishing the project in 2015 a second conference on the openETCS subject is planned to present the final results and most likely first marketable products at an adjacent product exhibition.

6 Standardisation

To be completed by DB

Standardisation activities will ensure that the project results will feedback to the relevant standardisation bodies such as ERA, CENELEC, thus ensuring that the project results are aligned with recent advancements in the standardisation committees and that standardisation benefits from public funded knowledge and experience.

As the open source software and open proof philosophy is very innovative in railway control and protection applications, a significant impact from the openETCS project on the existing standards is expected. By providing impact analyses, the project results will be embedded in the CENELEC standards setting process as well as in the development of the ETCS specifications by the ERA, in particular of the system requirements specification. Several partners of this ITEA2 Project (railway operators as well as manufacturers) are actively working in related standardisation committees.

6.1 ETCS

The system requirements specification (SRS) of ETCS has been published as an official document by the European Railway Agency (ERA), a governmental organization implemented by the European Commission. The purpose of the SRS is to specify the future unified standard European Train Control System ETCS from a technical point of view.

6.2 CENELEC

The European Standard EN 50128 from the "European Committee for Electrotechnical Standardization" (CENELEC) specifies procedures and technical requirements for the development of programmable electronic systems for use in railway control and protection applications. It is aimed for use in any area where there are safety implications.

7 Open Source Activities

To be completed by EclipseSource

7.1 Establishing the Infrastructure

7.1.1 Github

7.2 Toolchain

7.3 Ecosystem

7.4 Methodologies

8 Further Activities

8.1 Registered association (eingetragener Verein)

To be completed by DB

8.2 Press Releases

To be completed by DB

9 Communication

In the openETCS project we use a variety of different means of communication to enable the exchange of information between the project partners and external entities, to facilitate collaboration and to leverage the industrial, academic and societal awareness of the project, support the establishment of ecosystems of stakeholders and encourage the exchange of research results, thus contributing to the paradigm of open innovation.

9.1 Internal Communication

Internal communication enables the collaboration between the project partners. Internal communication takes place at different levels: global, work package-based and task-based. Thus, there is no information overflow and the project remains well-organised.

9.1.1 Regular Teleconferences

There are regular teleconferences for each work package which usually take place on a weekly basis in fixed time slots. The aim is to align the different partners with respect to the current goings-on in each work package. The organisation is Scrum-based, that is, each meeting is timeboxed and the participants are asked the following questions:

- What has been done in the last week?

- What will be done next week?

- Where there any impediments?

In addition, organisatorial issues are clarified and the alignment of the work package's tasks is ensured. For work packages with low activity, meetings take place at a lower frequency. The work package leaders organise the teleconferences and provide an agenda.

9.1.2 Mailing Lists and Google Groups

There are several mailing lists for the project, among them one for each work package, for global announcements, for the openETCS help desk, and for legal issues. While some (e.g., the project office mailing list) are restricted to certain members, most can be joined by any individual involved in the project. As they are hosted with Google Groups the whole communication is archived and can be accessed online.

9.1.3 SharePoint

The University of Rostock provides a SharePoint server that can be used to share documents within the project. The server is only accessible by project members and thus it is possible to provide restricted material for internal purposes.

9.1.4 GitHub

The public GitHub platform is used for management and publication of project results. It provides a wide variety of functions, including versioning, team collaboration support, public and private repositories and a wiki. It is especially useful if individuals are working on the same artifact simultaneously as it allows the tracking and merging of changes. The GitHub wiki is heavily used to provide organisatorial information as well as task-specific entries.

9.2 External Communication

Could this be filled by DB?

9.2.1 openETCS Website

References