Collaborative Large-scale Integrating Project

Open Platform for EvolutioNary Certification Of Safety-critical Systems

Dissemination Plan
D9.2A

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TABLE OF CONTENTS

Executive Summary **6**

Abbreviations and Definitions **8**

1 Introduction **9**

2 Dissemination Rules and Organisation **11**

3 Target Communities **13**
3.1 OPENCOSS partners 13
3.2 Industrial community 13
3.3 Scientific and Research community 15
3.4 Open source communities 16
3.5 Standardisation and Regulatory Bodies 17
3.6 OMG (Object Management Group) 18
3.7 Project Beneficiaries 18

4 Dissemination Means and Strategy **19**
4.1 Dissemination material 19
4.2 Internal Communications 20
4.3 External Communications 20
4.4 Quality Indicators 20
4.5 Dissemination Strategy 22
4.5.1 First Year 22
4.5.2 Second Year 22
4.5.3 Third Year 23
4.5.4 Fourth Year 24

5 Internal dissemination **26**
5.1 Internal dissemination (collaboration) platform 26

6 External dissemination **27**
6.1 Website 27
6.2 Project Brochure 29
6.3 News and Events 30
6.4 Scientific publications, industry events, and conferences 31
6.5 Networking with Related Projects 31

7 Dissemination plans per partner **34**

Appendix A: European Commission General Requirements **41**

Appendix B: Consortium Agreement Rules **42**

Appendix C: List of dissemination events related to OPENCOSS **43**

List of Figures

Figure 1: OPENCOSS website 27
Figure 2: OPENCOSS project brochure 29
Figure 3: News and Events at the OPENCOSS web site. On the left side, LinkedIn, Twitter, and the facebook logo. 30

List of Tables

Table 1: List of terms 8
Table 2: Qualitative ranking levels of dissemination actions 21
Table 3: Example conferences and workshops in the field of safety critical systems and certification 23
Table 4: Example journals and magazines in the field of safety critical systems and certification 24
Table 5: Dissemination milestones 24
Table 6: Most relevant projects for OPENCOSS 32

Executive Summary

The main objective of WP9 is to make relevant stakeholders aware of project results and guide the exploitation strategy of the project. Besides, internal trainings and courses are held so that the consortium members will get the appropriate skills in using the platform and its components. D9.2A will provide the dissemination plan for sharing project results.

All partners will collaborate in the dissemination of the results among the OPENCOSS related communities and towards the general audience. The Dissemination Coordinator will maintain a schedule of dissemination activities, undertaken by the consortium, and will suggest, within the consortium itself, specific actions.

This dissemination plan (D9.2A) is prepared at the beginning of the project, and it describes the overall dissemination goals, target groups, dissemination channels, and also the individual approach of each partner. The dissemination plan will provide a regular flow of information, thus contributing to the project's visibility, and will increase the opportunities for public promotion. The dissemination achievements (publications, exhibitions, conferences, workshops, seminars, press releases, promotion materials, web presence, relations with local authorities, etc.) will be regularly reported in a summary.

The dissemination plan describes how we want to carry out dissemination activities. It indicates what, when, but also how, by whom, with which resources, estimation of costs, which risk areas, etc. While most of this information is of public interest, some information is kept confidential. This dissemination plan will include internal dissemination, and external dissemination, and a more specific communication plan.

Internal dissemination and external dissemination: At the beginning of the project dissemination activities will focus in presenting preliminary project results to the identified scientific community, the end-users and key market actors. In the second half of the project the focus will be instead on informing the dissemination target groups about the OPENCOSS benefits, including first results of the evaluation and case studies.

For the industrial partners this will likely mean that the OPENCOSS results will be disseminated internally (e.g. BU's, Division, Departments), also through internal workshops. At project workshops, which are held approximately each half year, technical results will be exchanged among the partners. Project partners will actively participate in the activities, organised at programme level, with the objective of providing input towards common activities and receiving feedback (e.g. from Advisory Board). This exchange of information will contribute to area and portfolio analyses, offering advice and guidance and receiving information related to standards, policy and regulatory activities, national or international initiatives, etc.

Regarding the communication plan, OPENCOSS is planning to submit press releases at the following dates:

- At project start up.
- After each plenary meeting (each half year)
- At the end of the project

The press releases will be prepared by the OPENCOSS Dissemination and Exploitation Coordinator and submitted to the project partners for release in the respective countries. Further, project results will be communicated yearly in October, starting in 2012, through a project stand at the ARTEMISIA/ITEA co-summit.

An electronic newsletter, published twice per year on the website, will present updated information about project progress and news about the latest results / enhancements achieved in the project. In addition, we will use popular channels such as Twitter, Linked-In communities and RSS feeds in order to inform interested subscribers more rapidly and directly.

Results of OPENCOSS will be promoted through the project web site and to end user communities through meetings and focused presentations. The extensive contact networks of consortium members will facilitate contacting a targeted audience.

The community networks (including open-source), built within WP8, will facilitate contacting targeted audiences.

More detailed dissemination objectives are:

- Survey the market for new products and services offering, as enabled by OPENCOSS.
- Promote and disseminate project results as they are available.
- Actively participate in exhibitions and/or organise events (workshops, special issues in magazines / journals) to disseminate the project results.
- Prepare scientific contributions to the research community, raise public awareness about the project.
- Divulge expected results and progress within defined target groups, using effective communication means and strategies.
- Create the guides, examples and other material supporting individual learning.

Abbreviations and Definitions

Table 1: List of terms

Dissemination	*Publication or presentation of project expected results and projects actual results to a target group with the intention to promote the use of project results.*
Exploitation	*Taking industrial advantage of projects results by the project partners as a whole consortium or individually. Exploitation will be addressed in Deliverable 9.3 of the OPENCOSS project.*
Network building	*Any dissemination activity (not related to a publication or a web site) that aims to involve people outside the OPENCOSS network to introduce to the OPENCOSS community, its activities, and/or its products.*
Publication	*The act of publication means any information or result disseminated to third parties in writing and/or multimedia.*
Technology transfer	*Dissemination activities to transfer specific technological knowledge from the OPENCOSS activities to people outside the OPENCOSS community.*
Target Group	*The target group concerns those who will be directly, or indirectly, positively affected by the project, its activities, and/or its results.*
Training	*Knowledge transfer of project results internally with the consortium partners and/or to a target group, as part of dissemination and/or exploitation. Training planning will be addressed in D9.2B.*
Web Site	*Dissemination activities related to publications in an electronic form at a certain URL (Uniform Resource Locator – or web address).*

1 Introduction

Safety assurance and certification are amongst the most expensive and time-consuming tasks in the development of safety-critical embedded systems. European innovation and productivity in this market is curtailed by the lack of affordable (re)certification approaches. Major problems arise when evolutions to a system entail reconstruction of the entire body of certification arguments and evidence. Further, market trends strongly suggest that many future embedded systems will be comprised of heterogeneous, dynamic coalitions of systems of systems. As such, they will have to be built and assessed according to numerous standards and regulations. Current certification practices will be prohibitively costly to apply to this kind of embedded systems.

The OPENCOSS project aims to devise a common certification framework that spans different vertical markets for railway, avionics and automotive industries, and to establish an open-source safety certification infrastructure. The infrastructure is being realised as a tightly integrated solution, supporting interoperability with existing development and assurance tools. The ultimate goal of the project is to bring about substantial reductions in recurring safety certification costs, and at the same time increase product safety through the introduction of more systematic certification practices. Both will boost innovation and system upgrades considerably.

In short, the OPENCOSS project aims at having a substantial impact on the safety critical systems community reducing costs and time for (re)certification and promoting migration of certified subsystems/components within and across multiple applications domains (e.g. avionics, railway, automotive). It also aims at supporting fast evolution. Dissemination plays a crucial role in creating awareness of projects results and its benefits, and for supporting faster and widespread adoption.

The project shall set a cornerstone in the safety culture by collecting the certification best practices, from different application domains, and stressing their common conceptual framework. This will be the basis for common approaches and support tools leading to safe systems certification.

The project shall set the basis for a new safety culture, enabling the use of open source “certified” software. It will also attempt to change the culture of the open source community, in order to let them provide that additional documentation and process evidence to facilitate the open source certification.

OPENCOSS Work Package 9, Exploitation, Dissemination, and Training, led by Paolo Panaroni (Intecs), is concerned with communicating the results of the work done within the project, both within and outside the project. Within this package, Task 9.1 is Dissemination; this task, led by Martijn Klabbers (Eindhoven University of Technology), lasts from start to finish of the OPENCOSS project. The present deliverable 9.2, presents the plan for executing this task. The OPENCOSS dissemination has the following two important goals:

- Providing information of OPENCOSS results to relevant stakeholders (most notably: Partner companies, related communities) for transfer of knowledge. This also includes training.
- Stimulating interaction with relevant stakeholders, eliciting their requirements and collecting their feedback on OPENCOSS’s intermediate and final results.

Both goals will be addressed in deliverable 9.2. It consists of two main documents:

- Deliverable 9.2_A, which is devoted to the Dissemination Plan, under responsibility of Martijn Klabbers (TUE),
- Deliverable 9.2_B, which is devoted to the Training Plan, under responsibility of Daniela Cancila (Atego France).

This restructuring was requested by the work package leader, to better address the two topics, Dissemination and Training – and thus increasing the overall quality. The following focuses on the Training aspects.

This rest of this plan is organized as follows:

- Chapter 2 describes the dissemination rules and organisation,
- Chapter 3 identifies the specific target communities of the dissemination activities,
- Chapter 4 lists the different dissemination materials, activities, and the strategy to approach these target groups,
- Chapter 5 shows the internal dissemination plan,
- Chapter 6 shows the external dissemination plan,
- Chapter 7 shows the detailed dissemination plans of each partner.

In the appendices there are a number of international requirements regarding the dissemination. In addition, it includes the official dissemination activity list.

Appendix A (Appendix A: European Commission General Requirements) includes the general requirements set forth by the European Commission for the Dissemination and Exploitations of Programmes, and to which this dissemination plan is compliant. The requirements are drawn from:

http://ec.europa.eu/dgs/education_culture/valorisation/writing-dissemin_en.htm

Appendix B (Appendix B: Consortium Agreement Rules) describes the rules given by the OPENCOSS Consortium Agreement (CA). This report should be consistent with these rules as well.

Appendix C describes the current list of dissemination events, as known to the partners.

2 Dissemination Rules and Organisation

A **dissemination coordinator** is appointed for all dissemination activities. The coordinator is identified as the work package leader of WP9 - Exploitation, Dissemination, and Training coordinator, Paolo Panaroni from INTECS. He will act in strong connection with the Opencoss Project Board that takes the ultimate decisions. He will lead the **dissemination team** composed by all other task leaders participating in WP9. The team will prepare and update the **dissemination plan** (D9.2A, this document) and the training plan (D9.2B).

A central online **dissemination action** list/calendar will be prepared and maintained. A first version is included in Appendix C: List of dissemination events related to OPENCOSS. Yearly **dissemination reports** and a final dissemination report, at the end of the project, will be prepared.

All partners are welcome in advertising their participation in the OPENCOSS project. The partnership shall be highlighted using the project LOGO.

All partners have their responsibility to perform dissemination activities and will use the approved **dissemination material** (e.g. abstract, leaflet, etc.). They shall report about these activities, and they are also required to inform the OPENCOSS Project Board (PB) in advance as to better coordinate the dissemination efforts.

If other kinds of dissemination material are to be used (e.g. a new paper, a new poster, which is clearly promoting the OPENCOSS project), this must be **preventively approved (before dissemination)** by the Project Board (PB). Any participation at an event (e.g. a conference), for the purpose of disseminating the project results, should be **preventively approved** by the Project Board (PB).

Important: advance notice of any planned publication must be made to the Project Board (PB) twenty-one (21) calendar days before the publication, providing a copy of the candidate publication. Any objection to the planned publication must comply with the GA, and must be submitted, in writing, to the Coordinator and to any concerned Party within fourteen (14) calendar days after the receipt of the publication. If no objection is made within said time limit, the publication is allowed.

This also includes:

1. Conducting any form of survey/questionnaire, be that an internal, external (or public) survey.
2. Holding interviews that involves members external to the project.
3. Holding seminars to present OPENCOSS results to external parties.

For all the above, an agreement needs to be obtained from the PB before proceeding.

Note that for surveys/questionnaires, internal surveys are treated just like external surveys. That is, they need an agreement from the PB before they can be conducted. This is because internal surveys concern all project partners, with a very significant time and cost impact. Therefore, they need to be carefully designed and reviewed.

In addition, for internal interviews and seminars that have a broad scope (i.e., when more than 3-4 partners are involved), we would ask that the agenda be made available ahead of the interviews and seminars, so that other interested partners can be informed.

Objections may be raised either based on the low level of quality of the proposed material, the information not consistent with the project strategy, or infringements of partners' own Intellectual Proprietary Rights (IPR).

All publications shall include the following statement to indicate that it was generated with the financial support of the European Community, and the FP7 programme:

"The research leading to these results has received funding from the FP7 programme under grant agreement n° 289011 and from the [partner-specific funding sources]."

Note: *The FP7 logo shall always be included for any (internal or external) deliverable, report and dissemination material.*

3 Target Communities

This section of the Plan identifies the key stakeholders that will be targeted by the OPENCOSS dissemination activities. For each group of stakeholders we also identify the most relevant projects aspects they are interested in. All partners need to take this in consideration for their dissemination activities to ensure that (only) relevant information is presented in relation to the target audience. Whilst the section also comments on the most appropriate forms of dissemination, this is done for reader's convenience only, and the subject is treated in detail in Section 4.

The stakeholders for dissemination of OPENCOSS intermediate and final results can be organised in five categories:

1. OPENCOSS partners themselves,
2. Industrial community
3. Scientific and Research community,
4. Open source communities,
5. Standardisation and regulatory bodies,
6. OMG (Objects Management Group)
7. Beneficiaries

Each category is explored in a dedicated sub-section below.

Of course the EC itself will be target of dissemination actions such as press releases, newsletter, and announcements for public events.

3.1 OPENCOSS partners

The OPENCOSS partners represent the first stepping stone, in order to reach the other stakeholders. From their responsibility and enthusiasm, new activities arise and dissemination will take its first step to maturity. The internal dissemination is the starting point of the external dissemination.

3.2 Industrial community

The ultimate goal of OPENCOSS is to improve the effectiveness of industrial safety-critical systems engineering practices. This is a general issue, with particular focus on harmonisation and reduction of certification costs. Consequently, the industrial community represents the key stakeholder to be targeted by the project's dissemination activities. However, it is important to recognise that the industrial community in turn consists of heterogeneous communities that often operate in relative isolation, and they need to be targeted individually. In particular, different communities of "practices" are likely to be interested in different aspects of OPENCOSS. This depends on their role in the supply chain and certification of the products on the one hand, and details of the challenges currently faced by individual industrial sectors on the other. These varying interests (explored below) will influence the project dissemination activities, and the consortium will ensure that the content of different dissemination actions is appropriate for the target audience.

The composition of the consortium naturally addresses "vertical" communities of practice (i.e. those associated with the different industrial sectors): automotive, aviation and railway. Furthermore, partners will utilise both their contact networks and the External Advisory Board to reach the other industrial communities not represented directly in the project: maritime, space, military, process industries (including nuclear power), and medical devices.

Orthogonal to the industrial sectors are a number of 'horizontal' groups of industrial stakeholders. These include:

- **Integrators of safety critical platforms**[1]. Within the industrial setting, platform integrators are ultimately responsible for the safety of the products delivered to the consumer market. They typically take primary responsibility for the assessment of the safety of the platform, integration of the overall safety case and certification. This group of stakeholders will be particularly interested in those OPENCOSS results concerning the composition of the safety case from individual modules, and that ensure the integrity of the evidence passed through the supply chain. (For details see the D9.3 Exploitation plan). The dissemination activities, for this group of stakeholders, will comprise presentations at conferences and workshops attended by industry as well as targeted OPENCOSS workshops (wherever possible – co-located with major industrial events and conventions), with the invitations issued specifically to the key identified stakeholders (i.e. airframers / aircraft integrators, car manufacturers and railway infrastructure integrators). The OPENCOSS consortium will also utilise its own network of contacts to seek out the opportunities for presenting the work (e.g. at integrators' suppliers conferences and internal training events).
- **Safety-Critical Equipment**[2] **Suppliers**. Within the supply chain / extended enterprise, key equipment suppliers are responsible for assuring the critical properties of their products. Whilst in some jurisdictions it may be possible to certify key equipment, equipment suppliers need to support higher level integrators, in their certification processes, by provision of appropriate evidence and rationale on how the evidence supports the specific claims about the product. Therefore equipment manufacturers will be particularly interested in specification of safety case modules in a form that can be integrated into the overarching safety case. They will also be interested in transferring certification artefacts (e.g. safety case modules) across certification jurisdictions and, thus, in the Common Certification Language that is a key enabling technology for this. Finally, Equipment Suppliers will have to preserve the integrity of the evidence they provide to platform integrators, and to ensure the integrity of the evidence both up- and down- stream of the supply chain. Similarly to the platform integrators, the dissemination activities targeted at suppliers will take form of presentations of relevant OPENCOSS work in industrially-focussed international conferences as well as dedicated workshops co-located with such conferences and major events. However, internal dissemination activities within OPENCOSS beneficiaries (see section 3.4), many of whom are themselves equipment suppliers or have strong links with such organisations, will also contribute to dissemination to suppliers. Finally, training and continuous professional development programmes, run by the project partners, will be adapted to take into account key OPENCOSS achievements, thus, further contributing to the dissemination to industrial stakeholders (see also the OPENCOSS Training Plan [D9.2B]).
- **Tool Vendors**. Tool vendors support both platform integrators and equipment suppliers, and they facilitate the exchange of relevant information between all supply chain and certification stakeholders. Consequently, support and buy-in from tool vendors is critical for the medium- to long- term success of the certification framework, as developed in OPENCOSS. Ultimately, the vendors buy-in has two aspects. Firstly, the project must promote the adaptation of the existing tools (e.g. RAMS tools, modelling environments, etc.) to the OPENCOSS architecture and working philosophy, in order to ensure that certification evidence can be supplemented by all necessary information and it is presented in the formats appropriate for the framework developed by the

[1] We define a "platform" here as the largest engineered artifact. Example of platforms are aircraft, car, railway line, entire chemical or power plant, ship, etc. The platform can be contrasted with a single constituent system (e.g. aircraft fuel system, wheel braking system, IMA or railway signalling system, interlocking system, etc) and key equipment (e.g. CPIOM or Zone Controller in aviation and railway sectors respectively)

[2] In this document we use the term "equipment" loosely to denote all intermediate stages of the safety-critical platform design from major components up to individual systems. Similarly, by "equipment suppliers" we refer to all intermediate stakeholders within the supply chain excluding only the platform integrators discussed earlier.

project. Secondly, it is necessary to generate sufficient interest in a tool vendor community for supporting the framework itself and, thus, to promote development of tools that will implement and enhance the OPENCOSS architecture (and prototype tools). Whilst tool vendor's buy-in is largely determined by the demand and interest from vendor's clients (i.e. platform integrators and equipment suppliers above), OPENCOSS will facilitate the up-take of the concepts and the framework developed in OPENCOSS by ensuring that all the information relevant for the tool development is available through the project website. This will range from introductory ("entry-level") materials to detailed specifications necessary for development. It needs to be added that vendors are also interested in exploitation of the OPENCOSS methodology and technology (a common conceptual framework for specifying certification assets, for example) to improve certification specification in order to serve their clients better.

Whilst the project will focus on cross-domain dissemination opportunities (by targeting conferences and workshops that attract significant industrial participation across the sectors), these core dissemination activities will be supplemented by those targeted at major international events of specific industrial sectors. Examples are SAE World Congress and AeroTech event for Automotive and Aviation respectively, and International Rail Safety Conference for railway industry. Events organised by key national and European industrial groups and technology platforms will also be considered (e.g. events organised or sponsored by RSSB, ERA and ERRAC for the railway domain as well as MISRA and EUCAR for automotive); however, in order to maximise outreach whilst optimising dissemination expenditure, the project will normally seek to utilise pre-planned consortium partner's participation in those events, rather that aiming at attending events solely for the purpose of OPENCOSS dissemination.

3.3 Scientific and Research community

Dissemination of OPENCOSS work to the scientific and research community is seen by the Consortium as one of the key aspects of the overall dissemination activities. This will not only contribute to the peer-review of the project outcomes and will provide early feedback to the project (enabling the project to make necessary adjustments to its work in a timely fashion), but will also allow to extend the outreach of the project by galvanising research community and, potentially, reaching out to the industrial contacts of other research organisations that are not currently covered by OPENCOSS partners' contact networks.

Within the general scientific and research community the project will target specifically two disciplines: System Safety Engineering and System Engineering. The dissemination activities will be centred on publications at reputable peer-reviewed conferences and journals in these disciplines (see Appendix C: List of dissemination events related to OPENCOSS). Impact factors and rankings will be used to select dissemination opportunities that are likely to reach widest possible audiences[3]. In the later stages of the project, OPENCOSS consortium will also seek out opportunities for organising a small number of dedicated satellite workshops at key relevant conferences (e.g. Embedded Real Time Software and Systems Congress, IET Systems Safety Conferences and INCOSE conferences). These events will be advertised through partners contact networks as well as through conference organisers and various international mailing lists and notice boards (e.g. Safety-Critical Mailing List, Risks forum, SEWORLD, open discussion workshops like the International Workshop on Next Generation of System Assurance Approaches for Safety-Critical Systems – SASSUR, etc).

[3] Note, however, that impact factors/rankings will only be used for selecting publication venues where target audience is scientific and research community. For industrial dissemination, discussed in the previous section, other criteria (e.g. proportion of attendees from industry and industrial prominence of the conference/event) may take precedence over those metrics.

In addition to dissemination activities targeted at the scientific and research community at large, OPENCOSS will identify a number of relevant active research projects with the view of establishing regular meetings and exchanges. The objective of this will be to seek exchange of relevant experiences and results and utilise likely synergies between various projects. Whilst the project will seek to establish contacts with all relevant ongoing projects, regardless of their funding source (industrial, national, or European / International), our primary focus will be on the EU-funded projects. OPENCOSS partners' participation in various projects will be utilised to identify those where collaboration with OPENCOSS is likely to yield most benefits for both sides. The project will also seek advice by the European Commission Services (and, in particular, the Project Officer) in this matter on the regular basis. Furthermore, OPENCOSS will participate in any inter-project networkin g event organised, promoted or sponsored by the Commission, in order to continue reviewing and enhancing its network of research contacts. Overall, cross-dissemination research activities with other projects will be punctuated by series of regular (at least – annual) multi-party workshops[4].

3.4 Open source communities

OPENCOSS is aiming to support the open source philosophy. The open source philosophy promotes free redistribution and access to an end product's design and implementation details. Opening the source code enables a self-enhancing diversity of production models, communication paths, and interactive communities. The open-source software movement has created a new environment for which new copyright, licensing, domain, and consumer issues were created. The open-source model includes the concept of concurrent and different agendas and various approaches in production, in contrast with the closed source and centralized models of development such as those typically used in commercial software companies. A main principle and practice of open-source software development is peer production by bartering and collaboration, with the end-product, source-material, "blueprints", and documentation available at no cost to the public.

The open source communities, however, form a very generic group of participants, from companies as IBM to university based contributors. It is rather seen as an exploitation strategy than a stakeholder representative. For OPENCOSS a specific number of open source communities is relevant and can be seen as special stakeholders:

- **Eclipse** is an open-source community that develops open platforms and products. The main product is the Eclipse Software Development Kit, consisting of the Eclipse Platform, Java development tools and the Plug-in Development Environment. The Eclipse community's projects are focused on building an open development platform consisting of extensible frameworks, tools and runtimes for building, deploying and managing software across the lifecycle.
- **Polarsys**, hosted at the Eclipse Foundation, is a new industry collaboration which aims to build open source tools for safety-critical software development. Polarsys is the result of the work of the existing OPEES (Open Platform for the Engineering of Critical Embedded Systems) group, an ITEA2 (Information Technology for European Advancement 2) funded consortium. The industry collaboration wants to meet the strong requirements in demanding engineering domains of safety-critical and embedded system development sach as the aerospace domain, defense and security, transportation, energy, healthcare, or telecommunications domain. Requirements in those domains involve the need for innovation, ensuring the highest levels of safety, reliability, service, and performance, compliance with standards and certification demands, high level of development and certification automation, very long term support going from 30 to 70 years. Polarsys aims at

[4] The first such workshop has taken place in Toulouse (France) on 31 January 2012 and included representatives from five projects: CESAR, pSafeCer, MBAT, SAFE, and OPENCOSS

answering these requirements by providing a set of industry-friendly open source tools & components, collaborative means to make open innovation easier, organizes sustainable commercial services & ecosystem around the components, etc. Polarsys will build on the technology and innovation created in the very successful **TopCased** open source project of the French cluster Aerospace Valley. Topcased is an open source system development environment, implementing an integrated model-based development process, from the system specification down to the final product.

- **OPEN-DO** (derived from "Open" as for example in *open source* and “DO” from for example "DO-178C" the forthcoming revision of the avionics standard for airborne software) OPEN-DO is an innovative open source initiative which, amongst others, strives to stimulate innovation despite the certification efforts of safety-critical software and aims to ensure wide and long-term availability of qualified open-source tools and certifiable components for the main aspects of safety-critical software development. (See also http://www.open-do.org/)
- **OSLC**, Open Service for Lifecycle Collaboration, is an open, industry-wide community that is dedicated to reducing the barriers between lifecycle tools. Originally proposed in 2008, it is there to define a set of specifications that enable integration of software development and more broadly Application Lifecycle Management (ALM) and Product lifecycle Management (PLM) products and services. The intention is to make life easier for software and product developers and tools vendors, by making it easier for tools to work together. The **Eclipse Lyo**, is one of the projects that focuses on providing an SDK to help the Eclipse community to adopt OSLC specifications and build OSLC-compliant tools.

3.5 Standardisation and Regulatory Bodies

Since development, analysis and assurance of safety-critical platforms is highly regulated and standardised in most jurisdictions, standardisation and regulatory bodies are key stakeholders in the certification process and, consequently, they represent a key audience that must be targeted by OPENCOSS dissemination activities. However, effective dissemination to those bodies is also most challenging and requires a careful and balanced approach. Consequently, these dissemination activities will be coordinated jointly by Work Packages 8 and 9. WP 8 will on the one hand focus on dissemination actions targeted specifically at standardisation groups, actions which are detailed in Deliverable 8.1 that will include a standardization plan. WP 9, on the other hand, will seek to maximise the outreach of other dissemination activities to include, as far as practicable, raising awareness among the relevant regulators.

Firstly, it should be noted that majority of organisations that publish safety-related standards – such as ISO, BSI, EUROCAE, RTCA and CENELEC – act merely as publishing houses and provide little substantive input to the contents of the standards. Consequently, OPENCOSS project will **not** undertake any dissemination activities targeted specifically at those bodies. The project will, however, ensure that all of the key information about OPENCOSS is contained within the website and, therefore, can be used to verify the credibility of the project.

Secondly, for tightly regulated industrial domains (e.g. aviation and railway) regulatory bodies (EASA and ERA respectively) judiciously maintain impartiality and avoid perception of conflict of interest. To be effective, the dissemination to these bodies has to be carefully managed. OPENCOSS will aim at improving awareness by the regulators of project work and results through:

- Inviting representatives of these bodies to join the External Advisory Board
- Utilising partners contacts within regulatory bodies to attend key dissemination events (such as workshops co-located with prominent conferences described above)
- Bringing OPENCOSS work to the attention of regulatory bodies in other meetings and events

The project will also approach regulatory bodies indirectly through presentations to the relevant standardisation working groups.

The final group of certification stakeholders are standardisation working groups. These groups, that are de-facto authors of safety standards, typically comprise representatives of key industrial stakeholders (throughout the supply chain), independent safety assessors, researchers and regulatory bodies. Currently active standardisation groups relevant to the scope of OPENCOSS include EUROCAE WG63 (currently in charge of revision of the ARP4761 document, but tasked to look later into other Aviation safety standards) and various CENELEC working groups (operating under technical committee TC9) concerned with revision of EN5012x family of standards. Within the automotive domain, whilst the work on ISO 26262 standard has been completed, guidance is currently being produced by a working group convened by Motor Industry Software Reliability Association (MISRA). Finally, of relevance to OPENCOSS are various standardisation efforts that are not specific to a particular industrial sector and carried out under the auspices of INCOSE and OMG. The key to OPENCOSS dissemination activities targeted at standardisation and regulatory bodies is utilisation of project partners' pre-existing membership in those standardisation groups. Not only will it allow the project to influence the standards and associated guidance material to ensure that these documents are consistent with the OPENCOSS philosophy, but it will also provide networking opportunities with influential regulatory and industrial organisations that could otherwise be difficult to gain access to. Overall these dissemination activities will focus on harmonisation of certification practices and cross-domain certification; where applicable, OPENCOSS partners will highlight (with justification) aspects of the standards that impede reuse of safety critical equipment and associated certification artefacts across regulatory jurisdictions, and will lobby for appropriate changes.

3.6 OMG (Object Management Group)

Object Management Group (OMG) is a consortium, originally with the goal of setting standards for distributed object-oriented systems, now it is focusing on modelling (programs, systems and business processes) and model-based standards. OMG provides only specifications, and does not provide implementations. But before a specification can be accepted as a standard by OMG, the members of the selected submitter team must guarantee that they will bring a conforming product to market within a year. This is an attempt to prevent unimplemented (and unimplementable) standards. Other private companies or open source groups are encouraged to produce conforming products and OMG is attempting to develop mechanisms to enforce true interoperability.

OPENCOSS partners have already contributed to the OMG standards (for example Tecnalia, Atego, University of York) and will continue to contribute to OMG and its standards by submitting their results, some as part of the project results, to the OMG. OMG will help the OPENCOSS consortium in establishing new standards and create a more unified way of working in the safety assessment process.

3.7 Project Beneficiaries

The external dissemination activities will be underpinned by the internal dissemination within the project partner organisations. These will take form of series of internal presentations, workshops and seminars and will be supported by appropriate information being made available through partners' information systems. Further support will be provided by the internal training activities (as also developed and coordinated by WP9 of the project). Internal dissemination activities goal is to maximise impact of OPENCOSS outcomes as well as to facilitate mobilisation of partners' resources and, particularly relevant to the Present plan, extended contact networks (i.e. contact networks of the entire partner organisation rather than more limited networks of individuals active within the project consortium).

The consortium partners will share internal dissemination and training materials through the established Collaboration Platform helping to avoid unnecessary rework on introductory materials.

4 Dissemination Means and Strategy

4.1 Dissemination material

A complete list of the dissemination material as used within the OPENCOSS community is as follows:

- External publications
  - General short abstract,
  - General long abstract,
  - Public project deliverable
  - Position paper (OPENCOSS position paper),
  - Web site (including access to deliverables and calendar of external events),
  - Brochure, leaflet,
  - Press releases (at Kick-Off, major milestones, project completion),
  - Internet Communities, Social Networks (LinkedIn and Facebook),
  - Newsletter,
  - Technical papers and presentations (for Journals and Conferences),
- Presentations
  - Short Project presentation (powerpoint) about 5 minutes,
  - Long Project Presentation (powerpoint) about 20-30 minutes,
  - Poster roll-ups,
- Internal publications
  - Collaboration platform (reserved to project partners only), containing:
    - Wiki
    - Calendar of internal event
    - Internal repository,
  - Mailing list,
  - Internal project deliverables.

The material already has a unified lay-out as every member needs to use the templates provided in the repository. For the wiki and the website, the format is provided in the wiki pages, resp. Drupal pages.

Deliverable 9.1 also describes the Collaboration Platform management and the repository in particular. The repository contains at least:

- Management Area (include DoW, GA and CA)
- Project Board (PB) Area
- Meeting & Workshop Areas
- Templates for deliverables and presentations
- Deliverable Area (final approved)
- Planning & Reporting Area
- Quality & template Area
- One area for each WP (from WP1 to WP9) which includes deliverables in progress
- One last area transversal to all WPs

The Collaboration Platform also includes the wiki-pages. Its contents and management are also described in D9.1. In short the wiki-pages at least contain:

- Contents of the Wiki
- Project logo, name, number

- Contact points (name, e-mails)
- One wiki page for each WP and each WP Task
- One calendar with past and announced events

4.2 Internal Communications

Effective internal communication among the project partners ensures that results are known by all partners, therefore enabling effective collaborative work: partners can achieve better and faster results using preliminary results by other partners, work is not duplicated, etc.

Internal communication is also supported by Internal Training (see D9.2B Training Plan). The following channels may be used:

- Mails,
- Teleconferences (Skype, WebEx, Powwownow, etc),
- Chat,
- Collaboration Platform (repository, wiki),
- Live Meetings/Internal presentations,
- Seminars/tutorials/internal workshops,
- Master and doctoral thesis.

Note that these channels are not necessarily reaching the internal group only.

4.3 External Communications

External communication is the means to disseminate the project results to the target group identified in Chapter 3. We can think of these means to reach these target groups:

- In-company dissemination or training, targeting other divisions/departments, (See WP 9.2B)
- Conferences, (See Section 6.4)
- Workshops, (See Section 6.4)
- Summer Schools, (See Section 6.4)
- Publications in scientific and professional journals (e.g. IEEE Software), (See Section 6.4)
- Participation in Network of Excellence and Professional Groups (e.g. INCOSE), (See Section 6.4)
- Master and doctoral thesis, (See Section 6.4)
- Visits & Presentation, (See Section 6.1, 6.2, and 6.4)
- Tutorials, (See Section 6.4)
- Webinars/video lectures, (See Section 6.1 and 6.4)
- Cooperation with other Research projects as SafeCer, CESAR, Chess, eDiana, RECOMP, etc., (See Section 6.5)
- Contribution to standardisation bodies (e.g. ISO, IEEE, OMG, INCOSE), (See Section 6.5).

4.4 Quality Indicators

Quantifying the characteristics of the dissemination activities is quite a challenge. First the quantifications must be defined. In principle we choose a very simple two dimensional approach. This approach should include both:

- “volume” (e.g. the quantity of people exposed to the dissemination ‘action’), and
- “effectiveness” (how convincing the dissemination action was).

As for the volume we will estimate the number of people exposed to the dissemination actions. These people will be the (safety critical system) professionals reached by dissemination actions.

The effectiveness is intended as Impact potential (how the project dissemination achieved the desired impact on the exposed audience). It shall be only estimated with a qualitative ranking as indicated in Table 2. It must be noted that the subjective factor is minimized in these rankings, but not completely absent. More concrete target numbers for Table 2 will be re-evaluated or established based on the first ratings of dissemination actions of the first 6 months.

Table 2: Qualitative ranking levels of dissemination actions

Rating	Presentation	Publication	Web site
Zero	marginal interest, no questions, severe objections	No impact, no references, only technical publication	No site visits, no external links to this site,no comments (if applicable)
Low	some interest, some questions	Few(er) references to this work from other publications, journal but not reviewed.	Few site visits, one external link, no or one comment/ Facebook like (if applicable)
Medium	interest, questions	Few references to this work from other publications (outside OPENCOSS group, if applicable) Minimally reviewed paper.	Some site visits, some external links, some comments/ Facebook likes (if applicable)
High	good interest, many questions, new contacts (exchange of business cards)	Some references to this work from other publications (outside OPENCOSS group, if applicable) Official peer reviewed journal.	Many site visits, many external links, many comments/ Facebook likes (if applicable)
Excellent	high interest, many questions and appreciations, contacts (business cards) and following actions	Many references to this work from other publications (outside OPENCOSS group, if applicable) Renowned journal.	Many site visits, many external links, many comments/ Facebook likes (if applicable) and following actions.

The quality of a dissemination action can be assessed by an *adhoc* questionnaire, tailored at the dissemination action, as well.

The dissemination team will assess each action by interviewing the dissemination performer, and apply the rating level as provided in Table 2 to the action at hand. Dissemination actions of each partner must have an average of medium to high quality rating. Disseminations are evaluated each half year. Partners that have a low rating, shall be stimulated to improve their results within the next half year.

4.5 Dissemination Strategy

Although many dissemination activities will be performed during the whole project life, there will be some difference in the intensity of certain activities during specific project periods. To do so, the dissemination strategy has been organized into three different periods, each per project year. Generally, the focus of the dissemination activities will move from internal dissemination and preparation activities (year 1), to raising awareness of OPENCOSS project and strengthening project's contact network (year 2), to collecting feedback on preliminary results (years 2 & 3) and, finally, to dissemination & promotion of the outcomes to industrial, scientific and regulatory/standardisation communities (years 3 & 4).

4.5.1 First Year

During the first year of the project the dissemination activities will focus on three following areas.

- **Internal dissemination actions targeted at partners and project beneficiaries.** From this year onwards all partners will hold at least one internal dissemination event annually. The primary goal of these events is to inform and update partners and raise awareness of OPENCOSS work, thus ensuring that the project receives appropriate input and support from its participants (some of which are large scale organisations). The secondary goal is to expand the contact network of the project in terms of external industrial stakeholders, regulatory / standardisation bodies and relevant active research projects by consolidating contact networks of project partners as a whole (rather than merely relying on the personal contacts of individuals directly participating in the project).
- **Establishing dissemination infrastructure and detailed planning.** The aim of these activities will be to establish support to underpin dissemination activities planned for Years 2 through 4. The *project website* will be established; this will provide a platform for publishing general dissemination material as well as being a single point of call for all detailed technical materials generated by the project. Similarly, *internal collaboration platform* will be established; in terms of dissemination, this will hold standards and previously used dissemination material to facilitate all future activities. Also, in collaboration with WP8 of the project, a list of *standardisation working groups* to be targeted by OPENCOSS dissemination activities will be compiled, groups will be ranked/prioritised in terms of the relevance of their work to the subject matter of OPENCOSS and partners' representatives on each group will be established.
- **Establishing the preliminary list of related active projects.** Aimed at a subset of scientific & research community stakeholders specifically identified in Section 3 above, at this stage this stream of activities will focus on European Collaborative projects concerned with the general topic of incremental and compositional certification of safety-critical systems. A first inter-project workshop will be organised and maintained on at least annual basis from this year onwards.

4.5.2 Second Year

In the second year of the project the focus of dissemination activities will be focused on raising awareness of the project, publicising key challenges addressed by the project and its preliminary results/chosen approaches as well as collecting feedback from the relevant (external) stakeholders. The target audience for these activities will be wider industrial community (with the focus of equipment suppliers and platform integrators) as well as scientific and research community at large.

In addition to continuing internal dissemination activities and organising regular inter-project workshops (started in Year 1), in the Year 2 OPENCOSS partners will:

- **Organise public workshops** on compositional certification and cross-domain reuse of certification artefacts. This one day workshop will be co-located with a prominent conference in the area of dependable systems engineering (tentatively – IET System Safety Conference 2013). The workshop will be advertised through standard mailing lists (including safety critical mailing list and SEWORLD); partners will also utilise their contact networks to issue targeted invitations to key industrial and regulatory stakeholders. The aim of the workshop will be to present key technical challenges tackled by OPENCOSS (with the focus on the subject matter of WP4 and WP5 of the project) and to seek feedback on the chosen approach.
- **Publish papers in international conferences and workshops**. (See Table 3) Each core work package of OPENCOSS (WP4 – 6, possibly 7 as well) will aim at publishing at least one conference paper to raise awareness of the project. Whilst primary focus of these publications will be industrial audience, project partners will seek to publish in venues that have a track history of balances industrial and academic attendance.
- **Organise an annual meeting as a public interface to the OPENCOSS community.** After the first year, an OPENCOSS-day is organised by its community that, for efficiency and effectiveness reasons, will be a satellite event of, for example, a larger safety related conference. OPENCOSS community members, but also external researchers, are invited to submit presentation proposals.

Table 3: Example conferences and workshops in the field of safety critical systems and certification

Abbreviation	Description
INCOSE	International Conference on Systems Engineering
SAFECOMP	International Conference on Computer Safety, Reliability and Security
ESREL	European Safety and Reliability Conference
HASE	High Assurance Systems Engineering
DSN	Dependable Systems and Networks
ERTS	Embedded Real Time Systems
IEEE RESAFE Workshop	Workshop on Software Reuse and Safety for the Institute of Electrical and Electronics Engineers
Automotive SPIN Italy	Software Process Improvement Network for the Automotive domain in Italy

The consortium will also seek to **bring the project to the attention of relevant active standardisation working groups**, although at this stage dissemination to those bodies will take a less formal format.

The above activities will supplement (rather than replace) the internal dissemination activities and regular inter-project workshops started in Year 1. In relation to the later, the consortium will continue reviewing the network of project and will expand it to include relevant nationally- and industrially- funded projects.

All dissemination materials will be uploaded onto the internal collaboration platform and, where permissible by the copyright and non-disclosure agreements, onto the project's public website.

4.5.3 Third Year

During the Year 3 OPENCOSS will specifically target standardisation working groups, scientific community at large and industrial community (maintaining the focus of suppliers and integrators). In particular the project will:

- Publish papers at **highly-reputable international conferences and workshops** (See Table 3) thus targeting the scientific and research community at large. Conference rankings, acceptance rates and partners past experience will be used to select publication venues related to the disciplines of

system safety engineering, software engineering and systems engineering that are likely to achieve highest possible impact and the project will avoid publications in venues whose proceedings are not indexed by IEEE Xplore (or similar service).

- Publish and present papers in **key industrially-focussed sector-specific international conferences** (e.g. SAE World Congress for Automotive) to maximise outreach to industrial community in general and, in particular, the stakeholders who would not be otherwise included in cross-domain dissemination activities of Year 2.
- Seek to **present key findings and results of the project to selected standardisation working groups**.

The consortium will continue to hold inter-project and public workshops, as well as the OPENCOSS day, and will intensify its internal dissemination activities.

Table 4: Example journals and magazines in the field of safety critical systems and certification

Description
IEEE Software
IEEE Transactions on Software Engineering
Journal of Software Testing, Verification, and Reliability

4.5.4 Fourth Year

The final year of the project will be dedicated to promotion of the project outcomes. In terms of activities aimed at dissemination to the scientific and research community the project will **focus on publishing at key international journals** (See Table 4. Impact factors will be used to select publication venues). Dissemination targeted at industrial stakeholders will continue primarily through publications at **reputable industrially-focussed but cross-domain international conferences** and will be focused on demonstration of the OPENCOSS framework on industrial case studies of realistic scale and complexity.

To facilitate the uptake of the OPENCOSS outcomes, the consortium will specifically seek to publish in the **conferences and workshops that attract significant attendance from the tool vendor community**.
Furthermore, in the beginning of Year 4 contents of the project's public website will be reviewed specifically to ensure that it provides sufficient detailed technical content for the tool vendors.

The focus of inter-project workshop(s) held in that year will move towards identification of areas requiring further research and development. At the same time, OPENCOSS will seek to **transform annual public workshops into a standing independent event** (possibly co-located with one of the major conferences in systems and/or safety engineering) that could continue after the end of the project. Next to these activities, the annual OPENCOSS-day will be held as a growing tradition.

Finally, detailed **training programme** will be developed in OPENCOSS WP9, D9.2B of the project (and trialled within the beneficiaries) to facilitate roll-out of the OPENCOSS philosophy and tools. Training materials will also be made available through the projects public website.

Table 5: Dissemination milestones

Period	Dissemination milestones - results	Project Milestones	Target stakeholders	Lead partners
Year 1	[M4] - **Stable internal collaboration support platform, initial project plans**	MS1	OPENCOSS partners	**HPD**, TUE

Period	Dissemination milestones - results	Project Milestones	Target stakeholders	Lead partners
	[M4] - **Website and other public/external comm. mechanisms (newsletters, etc) in place**	MS1	Safety critical systems community	**INT**, TUE, TEC
	[M8] – **Internal awareness of project plans, related active projects, mission, and goals**	-	OPENCOSS partners	**TEC**, TUE, INS (DNV)
	[M12] – **Surveys, User Needs, Requirements, Architecture**	MS2	OPENCOSS partners	**SIM**, TUE, TEC
Year 2	[M20] – **Detailed Designs and Outreach program**	MS3	OPENCOSS partners	**ATF**, TEC, UOY, INT
	[M24]- **Publication of intermediate OPENCOSS results (WP2 to WP6)**	-	Related projects, external industry partners	**UOY**, SIM, TUE
Year 3	[M28] **– Intermediate Module Prototypes**	MS4	Safety critical systems community (main conferences)	**ADA**, ATF, PSF
	[M36]- **Proposal for standardization of OPENCOSS assets**	-	domain-specific communities, standardization bodies	**TEC**, UOY
	[M36] – **Public workshops to show OPENCOSS framework in industrial cases - Final Prototypes and Integrated Platform**	MS5	Safety critical systems community	**ALT**, ATF, ADA
Year 4	[M42]- **Proposal for standardization of OPENCOSS assets**	MS6	domain-specific communities, standardization bodies	**ALS**, THA, CRF
	[M42] – **Public workshops to show OPENCOSS framework in industrial cases**	-	Safety critical systems community	TEC

5 Internal dissemination

The OPENCOSS project aims at having a substantial impact on the safety critical systems community by reducing costs and time for certification and promoting migration of certified subsystems across multiple applications domains (e.g., avionics, railway, automotive), as well as their fast evolution.

Dissemination plays a crucial role in creating awareness of the projects results and its benefits and supporting faster and widespread adoption both internal and external. In order to support the project's goal, the website and the platform serve two main dissemination goals:

- Internal dissemination in order to enable effective collaborative work by sharing guides and preliminary results among project partners and alert them in the most effective way.
- External dissemination for relevant stakeholders, which includes the goals, planning and results of the project.

Deliverable D9.1 Website and Collaboration Platform describes the public website and internal collaboration platform for the OPENCOSS project in detail. In this document we describe this topic in its main lines and refer to the D9.1 document for more detail.

5.1 Internal dissemination (collaboration) platform

These internal website contain part of the internal dissemination platform:

- Internal wiki-pages (https://svn.win.tue.nl/trac/opencoss/wiki),
- Internal repository (https://svn.win.tue.nl/viewvc/opencoss/),
- Single online calendar in the repository
  (https://svn.win.tue.nl/viewvc/opencoss/WP9\Dissemination Material\SingleOnlineCalendar\DisseminationActivitiesTracking.xlsx).

6 External dissemination

6.1 Website

During the initial dissemination phase the project website has been set up to include project presentation, public downloadable documents (project reports and dissemination papers), links to related projects, demonstration material, news section etc. The website will have tools for dissemination purposes, training material, discussion forums, blogs and news posts. The OPENCOSS logo and website graphics will promote the project in a unified graphical layout.

Figure 1: OPENCOSS website

The contents of the externally visible web site can be viewed at the website (www.opencoss-project.eu, see Figure 1) Website management is further described in Deliverable 9.1.

In short the website consists of:

- **Overview**: a general introduction with the abstract, objectives, and the impact of the OPENCOSS project, including project logo, title, payoff, FP7 logo, project number, project effort and budget.
- **Organization**: includes the structure, the consortium (the participating organizations with their expertise, and link to their website) , and management;
- **Industrial Cases**: The industrial cases included in the project for automotive, railway, and avionics;
- **Library**: Includes the dissemination materials, the project's deliverables, and the publications (published papers);

- **News & Events**: News, conferences, workshops, etc., external events related to OPENCOSS and/or attended by its partners (past and present)
- **Useful Links**: links to the internal and external information related to the OPENCOSS project, with, for example, the contact information, link to LinkedIn community, etc.

6.2 Project Brochure

The OPENCOSS brochure and poster can be used at events and conferences. The brochure and poster have been produced in the initial phase of the project, and will be updated at regular intervals as necessary. Figure 2 is the current brochure depicted. In addition each partner will add information about OPENCOSS membership on their company website. Simultaneously to this brochure we will create data sheets which describe how the framework supports development of certified software. This information will be distributed among partners' customers and during trade shows and seminars.

Figure 2: OPENCOSS project brochure

6.3 News and Events

The OPENCOSS news channels will include an electronic newsletter, published twice per year on the website. The news channels will present updated information about project progress and news about the latest results / enhancements achieved in the project. In addition, we will use a number of popular channels in order to inform interested subscribers more rapidly and directly:

- Twitter,
- Linked-In,
- Facebook communities,
- RSS feeds.

OPENCOSS news will be issued periodically on the project website and will address target groups and end-users in a style and language appropriate to them. It contains information on current results achieved, lectures, talks, and trainings available. In the target audience is the safety critical systems community (internal partners, industrial, scientific, standardization organizations, project beneficiaries)

The OPENCOSS project is planning to submit news and events releases at regular intervals, and at least after each half year. The current news and related communities are depicted in Figure 3.

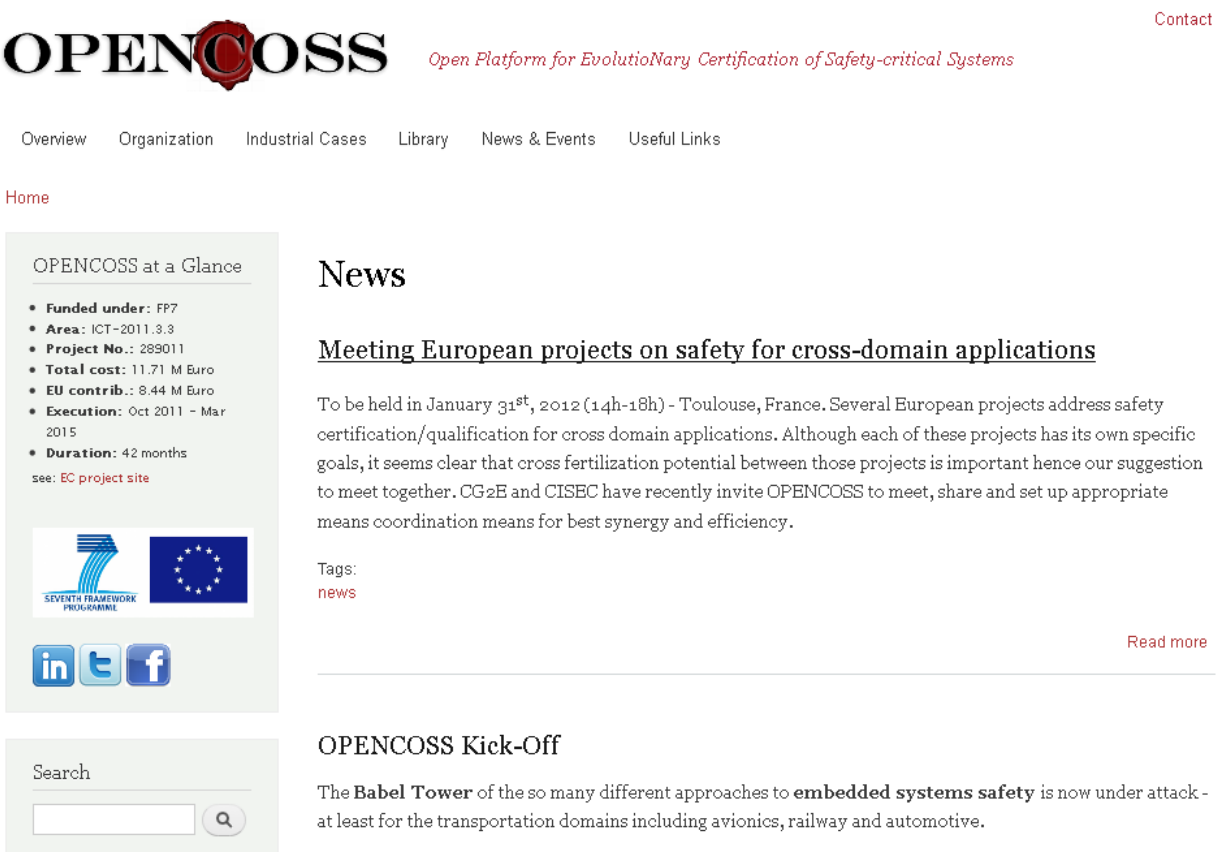

Figure 3: News and Events at the OPENCOSS web site. On the left side, LinkedIn, Twitter, and the facebook logo.

Related topics can be found on these web sites:

- News and events (http://www.opencoss-project.eu/news),
- Released publications (http://www.opencoss-project.eu/node/8),
- Deliverables (http://www.opencoss-project.eu/node/7),
- Released project publications (http://www.opencoss-project.eu/node/18).

6.4 Scientific publications, industry events, and conferences

The academic partners of the project will individually and in collaboration publish and present scientific advances at esteemed conferences and workshops, as well as in journals and magazines. We plan to have at least 25 publications at the end of the project. Relevant conferences include: International Conference on Systems Engineering (INCOSE), International Conference on Computer Safety, Reliability and Security (SAFECOMP), European Safety and Reliability Conference (ESREL), High Assurance Systems Engineering (HASE), Dependable Systems and Networks (DSN). See Table 3 for a more elaborated list.

Next to its OPENCOSS day, OPENCOSS also promotes project presentation at exhibitions, conferences and seminars targeting relevant industry and decision makers. Industry events in the safety domain bring the experts of the field closely together. The impact of presentations at these kind of exhibitions is, because of the influential people gathered there, very high.

Organisation of international OPENCOSS workshops: The goal of these workshops will be to disseminate both the techniques developed during the project and the preliminary results of the project to the targeted beneficiaries of the OPENCOSS project. We plan to organise at least 4 workshops throughout the project. In fact we will combine and align the 'annual' European Symposium on Verification and Validation of Software Systems (VVSS) in 2012.

To reach out to European society at large, local and mass media coverage are relevant direct channels. This can be achieved through press releases, interviews and demonstrations. Industry partner community: each project partner can communicate the OPENCOSS results and goals through his or her own personal network.

6.5 Networking with Related Projects

Networking activities will extend dissemination activities in the area of safety assurance and certification of safety-critical systems, especially by co-operation with other EU funded projects plus organisations, groups and professionals already working in the domain such as working groups related to tool development for embedded systems and align its efforts accordingly. OPENCOSS will set up relationships with ARTEMIS projects. In particular, the project intends to establish strong links to other ARTEMIS tool platform initiatives and support the creation of appropriate ecosystems around technologies for safety-critical systems development. Furthermore, the OPENCOSS consortium will focus on informing the professional networking community through dissemination of information materials and active attendance at selected events allowing personal discussions and exchange of experience.

Table 6 below provides a short list of ongoing research project that will be target of collaboration activities. Please note that this is only a list of selected projects with very similar topics to OPENCOSS. The lead contact partner will coordinate collaboration activities.

The names indicated in Table 6 below represent the key person of the OPENCOSS project having a connection or having a direct participation to the projects, and therefore they will act as "liaison" persons. This will ensure proper connection, by taking advantage of other project results. Shared events involving multiple projects will also be managed (see Toulouse CG2E, SASSUR, etc.).

The projects have been selected among EC and ARTEMIS projects on the basis of input from all the partners. Projects related to system engineering processes and methods (e.g. CESAR) are also considered relevant as safety engineering and certification represent closely interacting processes and methods. Should new projects be funded (e.g. ARTEMIS CONCERTO) they will also be considered for potential liason.

Table 6: Most relevant projects for OPENCOSS

Project	Lead contact partner	Relevance for OPENCOSS
CESAR (Artemis)	F. Tagliabo (CRF)	This project addresses the industrial needs for embedded system development for safety relevant applications by developing ultra-reliable embedded components for use in an extremely competitive global market requiring drastic cost reductions. The main contribution of OPENCOSS with regard to the CESAR project should be the definition of specific certification/validation tools across different domains.
CG2E (Industrial Group)	H. Espinoza (TEC)	This initiative was launched (mid 2007) by major industrial companies involved in the development of critical embedded systems in a wide spectrum of application domains. Today this organization comprises more than twenty large, medium and small innovative companies, covering six important industrial fields. Several technical working groups have been launched in 2008, one of them addressing "standards & norms", mainly related to the safety of critical embedded systems and software. They generated some material of comparison of safety-related standards between domains.
SafeCer (Artemis)	P. Panaroni (INT)	SafeCer is targeting increased efficiency and reduced time-to-market by composable safety certification of safety-relevant embedded systems. The industrial domains targeted are within automotive and construction equipment, avionics and aerospace, and rail. SafeCer will also develop certification guidelines and a training example for other domains, thus considerably increasing its market impact.
RECOMP	H. Espinoza (TEC)	The RECOMP (Reduced certification cost for trusted multi-core platforms) research project aims to establish methods, tools and platforms for enabling cost-efficient certification and re-certification of multi-core based safety-critical systems and mixed-criticality systems, i.e. systems containing safety-critical and non-safety-critical components. A number of tools and approaches from RECOMP can be of relevance to OPENCOSS.
SAFE	M. Born (IKV)	This project has the objective of extending the AUTOSAR architectural model, enhance methods for defining safety goals and define development processes complying with the new ISO 26262 standard for functional safety in automotive electrical and electronic systems.
Open-DO	J. Lambourg (ADA)	The Open-DO initiative aims at building a community around certification-oriented free software tools and libraries. In particular, it provides a forge and a visible portal to host such tools and libraries. The OPENCOSS's framework being Open software, it could be part of the Open-DO environment, and may use some of the tool or libraries developed in the context of Open-DO.
ERRAC	Giorgio Travaini Tel. +32 26437089 giorgio.travaini@unife.org	See http://www.errac.org/ European Rail Resaerch Advisory Council
ACARE	Dr. Uwe Möller - Research Establishments	See http://www.acare4europe.org/ Advisory Council for Aeronautics Research in Europe

OPENCOSS will analyse, integrate and improve results from existing projects that are working with relevant technology. Project participants will also take part in clustering and synchronization meetings organised by commission services, and provision for this has been calculated in allocating efforts and budget within the consortium.

Specifically, the cooperation program will be organized through:

1. Awareness on OPENCOSS goals and activities.
2. Physical meetings in workshops or other related events.
3. Specific joint workshops between OPENCOSS and other project's partners. We will put special focus on the projects listed above.
4. Continuous update of the state of the art within the different WPs (OPENCOSS partners that participate in those projects).

7 Dissemination plans per partner

The dissemination plans per partner are presented in the tables below. They form the current view on the plans for at least the coming year, till February 2013. The dissemination plan is a living document that could change in order to get a better impact and achieve the goals of dissemination as stated in the introduction. These plans form the basis for the dissemination in the coming years.

TECNALIA Research & Innovation	Details	Expected at/between
	By participating in OPENCOSS, Tecnalia extends their competence in applied software service engineering:	
Technology Transfer	OPENCOSS results could be linked to open source community to provide a common certification language, as such initiative provides common data with lack of certification status limiting its deployment into aerospace.	
	• Presence on different open source networks: fsfe, eclipse	Whole year
	• Identify open source events important for opencoss deployment	Whole year
Network building	Participation in competitiveness cluster (aerospace valley, PEGASE, LSIS…) is a lever to disseminate broadly and find new opportunities	
	• Building of a Community portal	Beginning 2013
Publications	Publishing scientific results and hereby strengthen their positions as research partners in the area of applied software engineering:	
	• Paper publications,	November each year
	• Journal publications	2014/2015
Standardisation	EASA, local certification authority (CEAT, OdT) should be introduced to OPENCOSS results that shall enforce applicability and operational feedback from authorities Standardisation bodies such as EASA, ERA and ISO 26262 committee to be invited to the OPENCOSS day or to become members of the Advisory Board (actually ERA is already member).	
	• Participation in OMG System Assurance Task Force	During the whole year
	• Event at OMG meeting with SA (System Assurance) Task Force	End of 2012
Event organization	Organise and event a year, like:	
	• SASSUR workshop.	September 2012

ALSTOM Transport	Details	Expected at/between
Standardisation **Publications**	• Promotion to standardisation body (E.R.A.) of the OPENCOSS results using the results of the use case. • Papers in railway conferences, either international like WCRR or Deufrako meetings or ARTEMIS/EICOSE meetings or national like Club des Grandes Entreprises de l'Embarqué which aims to define tool strategy for embedded systems or national research networks	January 2013 April 2013

RINA Services SpA	Details	Expected at/between
Technology transfer	• Issue Assessment Strategy and Process Issue Case study, technical notes • Presentation of results at NB Rail (coordination of Notified Bodies) during the periodical meetings held with the participation of ERA (European Railway Agency)	
Website	• Information about OPENCOSS membership on the company website	March 2012

AdaCore	Details	Expected at/between
Website	• Corporate web-site	At least once a year
Social media	• Social media (linkedin, youtube, blogs, open-do.org community, etc.)	At least once a year
Conferences	• International conferences for the domain of interest (ERTS2, Certification Together International Conference, etc.)	At least once a year
Technology transfer	• Trade shows and technical magazines	At least once a year

Eindhoven University of Technology	Details	Expected at/between
Publications	A number of publications in cooperation with partners: • Technical notes • Conference papers • Journal papers • Industry articles • PhD Dissertation	 Twice a year Once/twice a year Once a year Once a year 2016
Standardisation	Providing input for standardisation organizations	2013-2014
Conferences	Attending conferences	Once or twice a year
Teaching material	Teaching material for: • PhD students • PDEng students • Master students,	 2014 2013 2014

Parasoft	Details	Expected at/between
Website	• Information about OPENCOSS membership on a company website	June 2012
Tools	• Inclusion into materials about Parasoft products, which are relevant to functional safety certified software – mainly C++test.	At least once a year
Marketing material	• Creation of data sheets etc which describe how the framework supports development of certified software in conjunction with Parasoft products. Distribution of that data sheet among Parasoft customers and during trade shows and seminars.	At least once a year
Network building	• Recommendation to customers as an effective way of improving certified software development.	At least once a year
Publications	• Information about OPENCOSS (and in future its support by Parasoft Products) on commercial trade shows: Embedded World 2012 Experiences with ISO26262 Automotive Testing Expo Farnborough International Airshow InnoTrans Embedded World 2013	 February 2012 March 28-30, 2012 May 17, 2012 July 9, 2012 September 18, 2012 February 2012

Intecs	Details	Expected at/between
Conferences	Participation to Industrial Workshops and Conferences: • 1 presentation at IEEE RESAFE Workshop • 1 presentation at ERTS Tolouse (France) • 1 roll-up poster at Embedded World Nuremberg (Germany) • 1 presentation at a SPI conference (to be determined) • Topcased/OPEES dissemination	at least once a year 2013 2012 (done) 2012 (done) 2012 at least once a year
Network building	• Presentations to selected Customers • 1 presentation at Automotive SPIN Italy • Liason with EC ARTEMIS projects SAFECER and SESAMO • SPICE Safety extension liaison (CNR dependability Institute)	at least once a year 2011 (done) at least once a year at least once a year
Standardisation organisations	• Presentations to National Certification Bodies (e.g.Italcertifer)	2013

ATEGO UK	Details	Expected at/between
Presentation	• Participation in industrial workshops and conferences	2012 -2014
Website	• OPENCOSS project details on company web site	Done
Publications	• Papers at relevant conferences (eg. SAFE,INCOSE)	2012 -2014 (when accepted)
Technology transfer	• Presentation of OPENCOSS results to customer network	TBD

Simula Research Laboratory	Details	Expected at/between
Technology transfer	• Tight collaboration with the martime and energy sectors for smoother technology transfer.	Started
Publications	• Submission of 1-2 journal articles (annually) at journals such as IEEE Transactions on Software Engineering, Journal of Software Testing, Verification, and Reliability (Wiley), and Information & Software Technology (Elsevier) • Subsimission of 2-3 papers (annually) at IEEE and ACM conferences.	before March 2013 before March 2013
Conferences	• Participation in conferences and workshops related to OPENCOSS	Started
Presentations	• Presentation of OPENCOSS and its results to research instituions interested in them	before March 2013
Website	• Inclusion of information about OPENCOSS at Simula's website	Done

IKV ++	Details	Expected at/between
Website	• company web site, which provides up-to-date information on the OPENCOSS initiative • presentation of OPENCOSS results in regular webinars and web sessions with customers • execution of 2 workshops with customer network to promote and discuss OPENCOSS results and direction	At least once a year At least once a year At least once a year

ATEGO France	Details	Expected at/between
Conferences	• international workshops and conferences (e.g. IEEE)	2014
Publications	• journal	2015
	• industrial dissemination	April, 2012
Standardization	• dissemination in the standardization organizations	2013-2014

Inspearit (before DNV ITGS)	Details	Expected at/between
Website	website reference of OPENCOSS	2012
	E-zine articles or inspearit blogs	2011-2014
Publication	article (interview) about the participation in popular magazines	2011-2014
Exploitation/Training	inclusion of outcomes of OPENCOSS in relevant inspearit trainings	2013-2014

ALTREONIC	Details	Expected at/between
Publications	• Website with safety engineering and certification topics	in progress
	• E-magazine articles	December 2012
	• Papers on relevant conferences and industrial exhibitions	July 2013

HP Dahle	Details	Expected at/between
Network building	• Networking sessions	At least once a year
Publications	• E-magazine articles	At least once a year
	• Papers on relevant conferences and industrial exhibitions	At least once a year

University of York	Details	Expected at/between
Publications	• Technical notes and deliverables (as in WP)	At least once a year
	• Academic conference and journal papers	At least once a year
Standard organisations	• Input to certification standards as appropriate	At least once a year

THALES Avionics	Details	Expected at/between
Network Building	• Networking sessions	At least once a year
Publications	• Papers in avionic conferences or industrial exhibitions	At least once a year

Centro Ricerche Fiat S.C.p.A.	Details	Expected at/between
Publications	Papers in international and automotive conferences or industrial exhibitions:	
	• paper for the International Conference "Experiences with ISO 26262" in Munich	March 2012
	• presentation in a National Technical Workshop "Electronic systems for vehicles safety: state of the art and future – the role of ISO 26262 for the Functional Safety" in Turin	April 2012

Appendix A: European Commission General Requirements

A dissemination plan should then include provision for most or all of the following:

- Project website – including design, hosting and management,
- Straightforward, 'start-up' leaflet explaining project aims,
- A database of key project personnel/contacts, which can be updated as the project progresses,
- Production and publication of regular printed and/or electronic newsletters – many EU-funded projects produce final reports in brochure form or an extensive project book containing all major results and outcomes,
- Dissemination conferences, seminars, workshops and meetings . A final conference to discuss dissemination of results has become a popular end-of-project activity,
- Public relations activities, to include writing and distribution of press releases/packs, placing of articles in relevant trade journals, etc. Items must be newsworthy to receive unpaid-for publicity – it is worth remembering that news media has no duty to publish press releases, whole or in part.

Dissemination plans should emphasise the need for all partners to take an active role in spreading the news about the project in their own spheres and countries. This is a great way of producing a multiplier effect. Partners can use existing lines of communications and their own reputation to raise awareness – this should also stimulate new and perhaps unexpected contacts with potential end users.

A good plan can also help the whole team arrange major events such as a dissemination conference well in advance. When planning for large, complex international events, it is important to allocate tasks clearly, define a budget and let potential attendees know well in advance.

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Appendix B: Consortium Agreement Rules

8.3 Dissemination

8.3.1 Publication

8.3.1.1 Dissemination activities including but not restricted to publications and presentations shall be governed by Article II.30 of the Grant Agreement subject to the following provisions.

- Dissemination activities shall be compatible with the protection of intellectual property rights, confidentiality obligations and the legitimate interests of the owner of the Foreground and/or Background.
- Prior notice to any planned publication shall be made to the Parties twenty-one (21) calendar days before the publication, providing a copy of the planned publication. Any objection to the planned publication shall be made in accordance with the GA in writing to the Coordinator and to any Party concerned within fourteen (14) calendar days after the receipt of the publication. If no objection is made within the time limit stated above, the publication is permitted.

8.3.1.2 An objection is justified if

- the objecting Party's legitimate academic or commercial interests are compromised by the publication; or
- the protection of the objecting Party's Foreground or Background is adversely affected.

The objection has to include a precise request for necessary modifications.

8.3.1.3 If an objection has been raised the involved Parties shall discuss how to overcome the justified grounds for the objection on a timely basis (maximum 45 days after permission is asked) while maintaining the scientific quality of the publication (for example by amendment to the planned publication and/or by protecting information before publication) and the objecting Party shall not unreasonably continue the opposition if appropriate actions are performed following the discussion.

8.3.2 Publication of another Party's Foreground or Background

For the avoidance of doubt, a Party shall not publish Foreground or Background or Confidential Information of another Party, even if such Foreground or Background is amalgamated with the Party's Foreground, without the other Party's prior written approval. For the avoidance of doubt, the mere absence of an objection according to Article 8.3.1 above is not considered as an approval.

8.3.3 Cooperation obligations

The Parties undertake to cooperate to allow the timely submission, examination, publication and defence of any dissertation or thesis for a degree which includes their Foreground or Background or Confidential Information subject to the confidentiality and publication provisions agreed in this Consortium Agreement.

8.3.4 Use of names, logos or trademarks

Nothing in this Consortium Agreement shall be construed as conferring rights to use in advertising, publicity or otherwise the name of the Parties or any of their logos or trademarks without their prior written approval.

Appendix C: List of dissemination events related to OPENCOSS

Dissemination Events – Calendar 2011-2013

(updated 31/03/2012)

When	What	Where	Who	Action
Year 2011				
22 Sep DONE	***OPEES - Open Platform for the Engineering of Embedded Systems*** *The project aims at the exploitation of the Topcased platform*	Paris	INT	Attendance and promotion (leaflet sent to all participants)
27 Sep DONE	**Railway Safety Technology Research Centre** (RSTRC) Workshop on Software Assessment and Certification for Railway Applications, to be held at the University of York		ATG UK RIN TEC SIM	Attendance and promotion
3 Nov DONE	Inspearit is awardwed *the "qualification enterprise innovant OSEO" thanks to the participation in OPENCOSS*		DNV/INS	
4 Nov MISSED	"General Framework and Guidelines for Early Recognition, Monitoring and Integrated Management of Emerging New Technology Related Risks"	Bruxelles	TUE	Attend and promote *It was indeed planned that one of the Eindhoven colleagues would join this. Due to a death in the family, this visit was canceled. We have requested the minutes and presentation slides. These have not been provided, yet.*

When	What	Where	Who	Action
	(CEN WS/iNTeg-Risk). *workshop organized by CEN CENELEC in the context of a proposal for a CEN CWA*			
8 Nov MISSED	**SafeTRANS**	Hamburg	ALS	However SafeTrans accepted to become part of the Advisory Board
15 Nov DONE	European Union Strategy 2020 on Advanced Systems Engineering, organized by IDC Market Research and European Commission	Brussels	INT	Attend and promote. The OPENCOSS project was mentioned and reported as one contributing to the strategy and vision.
29 Nov – 1 Dec DONE	**Certification Together International Conference**	Toulouse	ADA TEC INT	Presentation of OPENCOSS by AdaCore, about 300 participants.
29 Nov – 2 Dec DONE	**WOSOCER 2011** **International Workshop on Software Certification,** *satellite event of ISSRE IEEE International Symposium of Software Reliability Engineering*	Japan	SIM	Position paper submitted accepted, and presented, 100 participants
1 Dec DONE	**Automotive SPIN** - Software Process Improvment Network Workshop	Milan	INT, CRF, RIN	Short presentation, about 100 participants attended
6 Dec DONE	**UNIFE WG**	Brussels	Alstom	OPENCOSS Lefleat distributed (Siemens, Ansaldo, Bombardier, etc.)

When	What	Where	Who	Action
Year 2012				
31 Jan DONE	**CESAR and SAFECER rendez-vous Meeting hosted by CG2E Club des Grande Enerpises de l'Embarque at Thales**	Tolouse ??	TAV, INT, TEC	Joint meeting with CESAR and SAFECR (meeting hosetd by Thales, likely the 31 afternoon), this include meeting with other safety related research projects.
1-3 Feb DONE	**ERTS 2012 Embedded Real Time Systems Conference**	Tolouse	INT	The OpenCOSS roll-up poster was exhibited at the INTECS booth. Through a number of converations the project was presented.
28,29 Feb - 1 Mar DONE	**Embedded Word 2012** *Connected with ARTEMIS Days*	Nuremberg	TAV, INT, TEC, PAR,	Establish liasons with CESAR and SAFECR. Abstract to be submitted by 31/1. Poster and flyer presented by INT
28-30 Mar DONE	**ISO 26262 Conference**	Berlin	CRF, IKV	Presentation on SEooC by CRF and presentation of OPENCOSS, IKV has also attended
14-15 May	**EASE**	Ciudad Real	TEC, INT	Proposed an abstract by TEC and INT (rejected)
5-7 Jun	**SEPG Europe 2012**	Madrid	TEC	Submitted an abstract by TEC and INT (approved)
11-15 Jun DONE	**17th International Conference on Reliable Software technologies -Ada Europe 2012**	Stockholm	INT, ATG ADA	Contacted the chairman for industrial presentations. Abstract submitted for the Industrial Track, rejected: too research and the project is in an early stage to provide valuable results.
13-15 Jun	**PROFES - 13th International Conference on Product-Focused Software Development and Process Improvement**	Madrid	INT	Intecs is in the programme committee
25-27 Jun	**EuroSPI 2012**	Vienna		Submitted paper TEC and INT **(accepted)**

When	What	Where	Who	Action
9-12 Jul	**International INCOSE Conference 2012**	Rome	INT	
12-14 Jul	**Automotive testing EXPO**	Stuttgart	PAR	They will show a roll-up poster
25-28 Spt	**SAFECOMP 2012**	**Magdeburg**	**TEC**	**Abstract sent by 5 February, but converted in a proposal for a Workshop** **Accepted as** **SASSUR Next Generation of System Assurance Approaches for Safety-Critical Systems**
Year 2013				
	OPENCOSS-day 2013		**TBD**	