AMASS
Architecture-driven, Multi-concern and Seamless Assurance and Certification of Cyber-Physical Systems

WP7 - Community Building

1st EAB Workshop
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### Noteworthy Networking activities

<table>
<thead>
<tr>
<th>Projects</th>
<th>Networking activities</th>
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<tr>
<td><strong>SafeCOP</strong></td>
<td>SafeCOP (Safe Cooperating Cyber-Physical Systems using Wireless Communication) will establish a safety assurance approach, a platform architecture, and tools for cost-efficient and practical certification of cooperating CPS. Common workshop organized in Stockholm during Addalot Safety conference 2017 in May.</td>
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<td><strong>OMG System Assurance Task Force</strong></td>
<td>This task force specific activities include the development of the SACM specification for assurance case modelling. AMASS Partners (UC3, Tecnalia) participate to the Task Force.</td>
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<td><strong>CP-SETIS</strong></td>
<td>CP-SETIS (Towards Cyber-Physical Systems Engineering Tools Interoperability Standardization) is a support-action type IA of Horizon 2020 aiming at harmonizing and creating a sustainable infrastructure for maintaining the IOS (Interoperability Specification) set of standards. Connection through the participation of some partners to both projects (AIT).</td>
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<td><strong>ESPRESSO</strong></td>
<td>Swedish project aimed at increasing readiness to comply with ISO-26262. Collaboration of MDH with Scania. Reuse of safety cases.</td>
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Industrial Adoption Program – context

• Target Groups
  – Industry
  – Policy makers
  – Research/Scientific/Open Source communities
  – SMEs

• Expectations
  – Compliance with certification process for safety-critical systems
  – AMASS results
  – Open tool platform to manage safety analysis, documentation and certification
Industrial Adoption Program – Roadmap

Figure 2. Workflow for the Industry user group
Industrial Adoption Program – Roadmap

Step 1: Prepare the material for presentations and training
- Slides to use in presentations, and trainings

Readiness for presentation and concepts trainings

Step 2: Tool Access
- Prototypes
- Installation guides

Readiness for use

Figure 3. Workflow for the Research and Scientific user group
Industrial Adoption Program – Roadmap

Step 1: Prepare the material for presentations and training
- Slides to use in presentations, and trainings

Step 2: Tool Access
- Prototypes
  - Installation guides

Step 3: Architecture and infrastructure training
- Slides

Readiness for presentations and training
Readiness for use
Readiness for developers training

Figure 4. Workflow for the Open Source Community user group
Leverage Open Source to create an industrial community
From the AMASS proposal

• ... the release of the AMASS tool platform as open source in Eclipse and PolarSys will help establish a industrial community around the project by bringing more worldwide visibility through all PolarSys members, and through all PolarSys marketing activities.

• An important goal of AMASS is to establish a community for the AMASS platform under the Eclipse ecosystem and here especially contributing to the Polarsys platform, targeting tools for embedded system development. ...
Eclipse Foundation supports “business friendly open source ecosystems” based on extensible platforms

- Identify precisely what your competitive differentiators are for your customers
- Focus all possible energies there, and acquire everything else from OSS, or help build it in OSS
- Open source platform to foster interoperability

Products Added Value

Platform

Compete on products and services

Build this in and with open source, even if that means working with your direct competitors.
Working Groups add a new dimension

eclipse Foundation

IDE
Platform/RCP/...
Working Groups

iot
eclipse.org
PolarSys
LocationTec
openMDM
eclipse AUTOMOTIVE
LTS
eclipse.org
SCIENCE
eclipse.org
Transparency

Andrew Magill – flickr.com
Openness
Meritocracy
PolarSys Working Group

- PolarSys is the Eclipse Working Group dedicated to Open Source tools for systems and software engineering.
- Domains: aerospace, defense and security, energy, health care, telecommunications, transportation.
- Some projects:
  - Capella, Papyrus, Papyrus RT, B612, OpenCert, Chess, ...
The AMASS Open Platform as a new platform for new safety and process assurance approaches.
Example of the OpenCert project

OpenCert is a customizable safety assurance and certification tool environment integrated into existing manufacturers' development and safety assurance processes and tooling. The OpenCert tools support the following activities of safety-critical product development:

1. **Standards & Regulations Information Management**: This activity group supports knowledge management about standards (e.g., DO178C, ISO26262, EN 50128/50126/50129, etc.), regulations and interpretations, in a form that can be stored, retrieved, categorized, associated, searched and browsed.

2. **Assurance “Project” Management**: This is the core set of functionalities concerned with the development of assurance cases, evidence management, assurance process management, and global monitoring of the compliance with standards and regulations. The most relevant services of the OpenCert tools are to provide functionality that supports guidance and re-use of assurance artefacts. In addition, these services offer an evolutionary and transparent product and process assurance and certification with the ability to automate the most labor-intensive activities (e.g., traceability, compliance checking, assurance process planning, and metrics management, among others), as well as providing facilities to integrate the engineering activities with the certification activities from early stages.

3. **Compliance Management**: The OpenCert tools help “engineers” to assess where they are with respect to their duties to conform to safety practices and standards, and still to motivate them to see the effective progress of the work and level of compliance.

4. **Modular and Incremental Certification**: OpenCert supports a modular safety assurance and certification approach to enable cost-effective reuse of pre-qualified building blocks in different contexts (e.g., systems, configurations, upgrades).

**Licenses:**
Eclipse Public License 1.0
OpenCert is an integrated and holistic solution for assurance and certification management of Cyber-Physical Systems (CPS) spanning the largest safety and security-critical industrial markets, such as aerospace, space, railway, manufacturing, energy and health. The ultimate aim is to lower certification costs in face of rapidly changing product features and market needs.

**Product Engineering “Project”**

- Implementation
- Design
- Quality Management
- Validation & Verification
- Certification
- Safety Management
- Assurance Case Development
- Assurance Process Management
- Standards Specification
- Interpretation
- Assurance Management
- Compliance Management
- Component Release
- Module Assurance Case Development
- Supplier Chain

**News**

**Wed, Jun 7, 2017**

**Building the website**

Article by Antoine THOMAS, Eclipse Foundation

In 2017 spring, we are starting to build a website for the Eclipse OpenCERT project.

> View all news

Tweets by @EclipseFdn
Developing the open source ecosystem

Source: Patterns and practices for open source software success
Migration of EPF Composer

- EPF Composer had not been upgraded for the past eight years. The development environment was based on previous versions of the Eclipse platform.
- The migration of EPF composer was critical for allowing the integration in the AMASS Open Platform.
- This was done in four successive steps over a period of 2 months. The progress was tracked on a public bug tracker: [https://bugs.eclipse.org/bugs/show_bug.cgi?id=516608](https://bugs.eclipse.org/bugs/show_bug.cgi?id=516608)
- Muhammad Atif Javed proved that he is a good contributor to the EPF project and that he deserves to be elected as a, EPF committer.
- The EPF project gets a new boost in interest.
More about open source – Pure Service Business model

Key Partners

Open source communities

Key Activities

Integration of open source software

Contribution to the communities

Value Propositions

Outsourced integration service

Expertise

Customer Relationships

Tight

Large Organizations

Customer Segments

Key Resources

Software Developers

Cost Structure

Time based

Revenue Streams

Mainly call for tender

Outsourced integration service

OSS communities

Direct contact

Channels
More about open source – Leveraged Service Business model

- **Key Partners**: Open source communities
- **Key Activities**: Integration of free software, Product management & QA
- **Value Propositions**: Supported products
- **Customer Relationships**: Tight
- **Customer Segments**: Large Organizations
- **Key Resources**: Software Developers
- **Channels**: Internet support
- **Cost Structure**: In proportion of the number/complexity of the products
- **Revenue Streams**: Recurring subscription contracts
Open Source is an enabler

• A way to promote or establish standards
• A powerful marketing channel
• An ticket to collaboration
Next steps

• Connect with developers at conferences like EclipseCon

• Publish more content on PolarSys
  – Promote OpenCert
  – Promote the AMASS Open Platform built with OpenCert, CHESS and Eclipse Process Framework
Thank you for your attention!