

# Polarsys/TLPProposal

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< Polarsys

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## Overview

The Polarsys Top Level Project (the "Polarsys Project") is an open source software development project hosted by the Polarsys (<http://www.polarsys.org>) Industry Working Group which is dedicated to providing a robust, full-featured, industrial-quality, and freely available set of development tools addressing specific needs of critical and embedded systems.

This document describes the mission, scope, and organization of this Top Level Project and its constituent Projects, as well as the roles and responsibilities of the participants. It inherits all terms not otherwise defined herein from the Eclipse Standard Charter v1.1

([http://www.eclipse.org/projects/dev\\_process/Eclipse\\_Standard\\_TopLevel\\_Charter\\_v1.1.php](http://www.eclipse.org/projects/dev_process/Eclipse_Standard_TopLevel_Charter_v1.1.php)) . This includes, but is not limited to, sections on the Program Management Committee, Roles, Project Organization, The Development Process, and Licensing.

## Mission

Due to its strong emphasis on safety, reliability and quality, the development of embedded and critical systems is based since the beginning of its history on numerous software tools. But while the life cycle of critical and embedded systems goes from 10 years up to 80 years in the case of aircraft, the tools frequently become obsolete or disappear after less than 15, 10 or even 5 years. Polarsys has been created to take advantage of open source to bridge this gap and to foster innovation in this domain. The mission of the Polarsys Top-Level Project is therefore to host the open source assets of Polarsys.

The aim is not to host all technologies that can be applied to Embedded Systems design and development. The components with a larger audience than only critical and embedded systems will instead be hosted by a most relevant community. Good examples of this situation are some components from the Eclipse Modeling Project (<http://www.eclipse.org/modeling/>) like MDT Papyrus (<http://www.eclipse.org/modeling/mdt/papyrus/>) , Acceleo (<http://www.eclipse.org/acceleo/>) or other development tools like the CDT (<http://www.eclipse.org/cdt/>) . They will

neither move nor be duplicated into the Polarsys Top-Level Project, but they may be referenced by Polarsys, and some complementary assets (specific functional tests, extra documentation, etc.) may be hosted in Polarsys.

Projects hosted by this Top-Level Project can be licensed under either the EPL or any other licenses approved by the Industry Working Group and the Eclipse Foundation Board of Directors, including BSD-like licenses and the LGPL. See the Licensing section for more information. While most Polarsys projects will probably publish Eclipse features, some others may produce other kinds of component like stand-alone tools and servers.

## Scope

Polarsys covers critical and embedded systems development activities, from the early specification stage, down to the implementation and then up to verification and validation, including:

- Modeling – systems, hardware and software
- Code analysis – static analysis
- Debugging, tracing and other integration tools
- Life cycle process support tools – configuration management, change tracking, technical facts management, project reporting
- Test and verification frameworks, tools targeting embedded software methods, simulation, and early validation
- SoC (System on Chip) simulation and hardware logic (VHDL, SystemC, etc.)
- Embedded components like RTOS, middleware, etc.

## Project Management Committee

The Projects under this Charter are managed by a group known as the Project Management Committee (the "PMC"). The PMC's duties are described in "Project Management Committee" of the Eclipse Standard Top-Level Chapter and in "4.6 Leaders" of the Eclipse Development Process.

Beyond these general duties, the Polarsys Top-Level Project Lead(s) is responsible for applying Polarsys Steering Committee's and Architecture Committee's decisions and recommendations about the organization and operations of the Top-Level Project. The Polarsys Top-Level Project Lead(s) also report(s) to them.

## Project Planning Committees

Polarsys aims at setting up a strong coordination and collaboration between the various actors of its open source projects. Beyond the usual PMC coordinating the developers, a new mean associating not only the development teams, but also other stakeholders like industrial users or involved researchers is therefore needed: this is the role of the PPC, as defined in the Polarsys charter, section Project Planning Committees ([http://www.eclipse.org/org/industry-workgroups/polarsys\\_charter.php#Project\\_Planning\\_Committees](http://www.eclipse.org/org/industry-workgroups/polarsys_charter.php#Project_Planning_Committees)) .

But in no way PPC replace PMC:

- PMC are connected to one Project or to one Top-Level Project, while PPC are most of the time managing a complete functional stack (e.g. a PPC can take care of a specific modeling stack covered by several PMC).
- PMC are involved in the day to day management of projects, and PPC pay attention to more medium term concerns, like gathering various user's needs (functional needs, but also release deadlines and contents), defining medium/long term development plans, discussing innovation, maintenance, efforts and means, etc.

PPC are a privileged mean for developers to get return of experience from their users. Of course, the involved Project lead(s) are permanent guests in PPC meetings.

# Projects

## Project Organization

The Polarsys projects and components are organized according to a logical layered architecture:

- *Polarsys Technology Layer - PTL*: this layer contains projects and components with a technical scope, such as domain management (e.g. persistence, team work), transformation technology (e.g. model transformation, reverse engineering, refactoring), or interoperability.
- *Polarsys Engineering Layer - PEL*: this layer contains projects and components with a system, software or hardware engineering scope, such as requirement engineering, change management, simulation, architecture, or Integration, Verification and Validation.
- *Polarsys Service Framework - PSF*: this container hosts all the projects and components used to support Polarsys specific process, such as VLTS release engineering, Quality Assurance or maturity assessment. This layer extends the Eclipse infrastructure which provides standard services (e.g. Hudson/Buckminster/Tycho for continuous integration, Bugzilla for change management, file downloading area, mailing lists).

Companies or communities that require it can complete the PEL by a Business Layer composed of business-specific components (e.g. requirement engineering for Telecommunications, Simulation for a specific line of products, etc.).

## Infrastructure

Beyond the standard Eclipse infrastructure, new services will be developed and deployed including:

- Catalog of components
- Assessment and publication of the component's maturity
- Assessment and publication of the component's quality
- Functional testing framework
- VLTS build infrastructure

When possible, Polarsys will use the standard Eclipse infrastructure and Polarsys hosted components to implement those services.

## Licensing

All contributions to Projects under this Charter must be done according to the Eclipse Foundation's IP due diligence process in order to provide clean open source software released under EPL or any other licenses approved by the IWG Steering Committee and the Eclipse Foundation Board of Directors.

As of this proposal, the list of accepted licenses includes the EPL, BSD-like and Apache Licenses, and LGPL.

## Glossary

- **CDT** Eclipse C/C++ Development Tooling
- **IP** Intellectual Property
- **IWG** Industry Working Group
- **PEL** Polarsys Engineering Layer: projects and components with a system, software or hardware engineering scope
- **PSF** Polarsys Service Framework: project and components to support additional Polarsys services
- **PTL** Polarsys Technology Layer: projects and components with a technical scope, such as transformation

technology or interoperability.

- **VLTS** Very Long Term Support

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