GoedelWorksTM

A Unified and Systematic Environment for Certifiable Trustworthy Software and Systems Engineering



Embedded systems increasingly contain more electronics and software:

- Providing more **functionality** and higher **performance** at a **lower cost**;
- Providing more **safety**, requiring a rigorous engineering process;
- Providing high reliability and trustworthiness under all circumstances;
- Providing flexibility, upgradeability and customisation of the system.

The challenge is to cope with increasingly conflicting demands and growing **complexity**.

Altreonic offers a unique solution. We took a fresh look and developed a formalized approach. Altreonic has simplified the engineering process to a set of clearly defined and orthogonal activities. Under the banner "unified semantics" Altreonic's approach assures that at any time people share their knowledge with as little misunderstanding as possible. Altreonic developed a cost-efficient framework adapted to the needs of distributed development teams.

Developed as a cloud computing SaaS application, GoedelWorksTM offers:

- An integrated environment for systems and software engineering.
- An environment that is aware of safety engineering standards like IEC-61508, ISO-26262, ISO-13849, ISO-25119, ISO-15998, IEC-62061, CMMI, automotive SPICE.
- An environment capable of collecting an organization's knowledge.
- An integrated, version managed project repository.
- An environment compatible with agile as well as traditional processes.

No more hassles with development tool versions and set-up, or complex IT configurations and you only pay for the resources used.

Return On Investment guaranteed.

	Coogle 🔰 Graphity 🕎 CADP 🔄 TASTE 🥥 MD-OI	BEO 🗋 Antro 🧧 GV-5-2014 🔮 PDF Books 📓 Aptina Imaging 🕅 De Broglie-Bohm pl 🚺 Internet Archive
Entities Glossary Query Administration Change Log		
Entity Tree Search Results	System © Id-1338 © Id-735 © Id-1682 © Id-1805 © Id-891 © Id-899 © Id-899 © Id-890 ©	
Find Entities	WPT-1.4.(id-900): Resource Hub.(in Work) Changelog Comments Dependency Tree Precedence Tree	
Project Work Packages (1) Project Work Packages (1) Pr-1 (d-915): OpenComRTOS Qualification Pack Planning Activities (4) Design Activities (5)	Chang	e Navigation Parent []] Generate Doxygen Comment
	Workflow	
	State In Work	
DSP-1 (id-1680): Design Plan	 Content 	
DS-2 (id-1681): Design (2)	Name: Resource Hub	Development Status: Ready for Design
DS-2.1 (id-1760): Input of Requirements	Version: 1.6	
DS-2.2 (id-1805): Architectural Design	Type: Model	
DSRP-3 (id-1682): Design Report (1)	Model type: Architectural	
DSRP-3.1 (id-1857): Specifications not c	() Summary	
DSRV-4 (id-1683): Design Review (4)		
DSRR-5 (id-1684): Design Review Report (Design Review Report (Description	
+ Testing Activities (5)	SPC Resource state variables The Resource Hub is used to protect shared resource	rces (devices, components, memory,) from parallel access. Figure 1 shows the principle diagram of the
Integration Activities (5)	Resource Hub, which has been derived from the C	Generic Hub. The Resource Hub provides an Update and a Synchronisation Operation.
 Validation Activities (5) 		
Review Activities (7)		Locked [TRUE, FALSE]
Project Work Products (5)		
WPT-1 (id-1019): Design Documents (22)		CeilingPriority [0-255]
WPT-1.1 (id-891): Generic Hub		OwningTaskID
OPT-1.2 (d-898): Semaphore Hub		OwnerBoostedToPriority [0-255]
WPT-1.3 (id-899): FIFO Hub		Hub State
WPT-1.5 (id-901): Memory Pool Hub		Update Operation
WPT-1.6 (d-902): Data Event Hub		Synchronisation
WPT-1.7 (id-904): Blackboard Hub		Operation
 WPT-1.8 (id-897): Event Hub 		Synchronisation Predicate
WPT-1.9 (id-905): Port Hub		
WPT-1.10 (id-906): Packet Pool Hub		P G
WPT-1.11 (id-907): Memory Block Queue Hub		
WPT-1.12 (id-1781): Packets		
OPT-1.13 (id-1782): Context Switch		Resource (1-N)
 — — —		Figure 1. Resource Hub.
 WPT-1.16 (id-1788): Tasks 		
	Release status	
WPT-1.19 (id-1791): Kernel	© Attachments (1)	
WPT-1.20 (id-1823): Priority Ordered List	L1.Resource.png (137104 b)	
WPT-1.21 (id-1832): Timer List	Associative Links	
WPT-1.22 (id-1833): Keyed List	Dependent Entities	Preceeding Entities
 WPT-2 (id-1021): Source Code (101) WPT-2 (id-1021): Total Code (10) 	20 No filter applied	× 30 No filter applied
WPT-3 (id-1020): Test Code (4)		SPC-17.7.1.1 (id-903): Relocking a Locked Resource
WPT-4 (id-1121): Formal Models (1) WPT-5 (id-1853): Documentation (1)		SPC-17.7.1.10 (id-713): Resource Priority Inheritance
 Survey Issues 		SPC-17.7.1.11 (id-712): Locking a Locked Resource
Change Requests		SPC-17.7.1.12 (id-708): Locking a unlocked Resource



Altreonic NV - Gemeentestraat 61A b1, B-3210 Linden, Belgium. info.request@altreonic.com, www.altreonic.com, tel. +32 16 20 20 59

GoedelWorksTM



ASIL process flow identified 3500 process requirements!

The **GoedelWorks**TM framework is web hosted, which results in a realtime specification and development repository of the system or product under development. It has iterative and evolutionary development at its core while it guides the project members to work in a consistent manner.

Every organization has a lot of heuristic know-how but often it is not recorded or applied in a consistent manner. It can take years for newcomers to absorb this knowledge. Of course, integrating this knowledge requires human

interaction but Altreonic has the tools to facilitate this. The result is a development portal that allows reusing existing IP and platforms while preserving the heuristic knowledge integrated in the on-line design wizards. **GoedelWorksTM** is made standards aware but it is essentially domain independent. It provides the engineering team with pre-certification support during the development of the system. It covers organisational processes, safety engineering and development processes as well as the supporting processes needed for certifiable systems engineering.

In particular for software development, a direct connection with a repository like Subversion allows realtime updates of the software in the portal.



