

Open Source in Automation - OSADL Day

To registration



From being completely proprietary and using undisclosed source code, more and more actors in the automation world see the demand for cooperation to reduce development cost and time, and to improve quality by sharing the effort. The easiest way to do so is to integrate Open Source software. Therefore we do welcome you to an introduction to the principles and possibilities of Open Source software in automation – arranged by the Open Source Automation Development Lab (www.osadl.org) and Phoenix Contact.

Location: Phoenix Contact, Strømsveien 344, Oslo

Date: 15th of May, 8:00 to 17:00

Cost: 1200 NOK including lunch

Agenda:	
08:00 – 08:45	Registration
08:45 – 09:00	Welcome and introduction
09:00 – 11:00	Morning session (Carsten Emde, OSADL). <ul style="list-style-type: none"> • <i>What is Open Innovation, what is Open Source?</i> • <i>Basics of international copyright law</i> • <i>Legal and practical aspects of copying and distributing Open Source software</i>
11:00 – 11:15	Break
11:15 – 15:30	Midday session (Carsten Emde, OSADL). <ul style="list-style-type: none"> • <i>History and functionality of Linux and PREEMPT_RT Linux real-time</i> • <i>Determination of a system's worst-case latency – Presentation of the OSADL QA Farm</i>
12:30 – 13:15	Lunch
	<ul style="list-style-type: none"> • <i>Presentation of current OSADL projects: OPC UA/TSN project (phase 2)</i> • <i>The link between OSADL and PLCnext</i>
15.30 – 15:45	Break
15:45 – 16:45	Afternoon session (Morten Aanonli, Phoenix Contact). <ul style="list-style-type: none"> • <i>Open Source and the idea of an open platform – PLCnext</i> • <i>The buildup of an open PLC-platform</i> • <i>Demonstration of how one platform can make different programming language coexist</i>
16:45 – 17:00	Round up

A tentative list of topics to be covered under the different parts of the agenda:

“Open Innovation – Open Source”

- What is the connection between Open Innovation and Open Source?
- What is Open Source software?
- Free software vs. Open Source software
- Can a company protect its intellectual property despite using Open Source software?
- Economical aspects of Open Source software
- Why may Open Source projects fail?
- What is the function of organizations such as Linux Foundation and OSADL?

“Open Source – legal and practical aspects”

- Copyright basics: Berne Convention of 1887 and its international harmonization up to today
- Short overview of different Open Source licenses: License rights and license obligations
- What is Copyleft? What is a “derivative work”?
- License compliance as a general requirement of company compliance
- How can OSADL support companies in the context of license compliance?

“Linux and real-time Linux”

- Development cycle of the Linux kernel
- Linux drivers, off-tree and upstream submission
- User-space debugging vs. kernel tracing
- Some aspects of using Linux in a safety-critical environment
- Security requirements of embedded Linux systems
- Which driving forces were behind real-time Linux?
- Real-time extensions vs. mainline (PREEMPT_RT)
- Merging-strategies, installation, configuration
- Presentation of OSADL QA farm: Latency testing, latency recording, latency plots
- Hardware latency detector
- RTL Collaborative Project of Linux Foundation
- OSADL OPC UA/TSN project (phase 2)

PLCnext

- The cooperation between Phoenix Contact and OSADL and use of open source to develop the PLCnext platform
- How does the PLCnext platform work for complete openness when it comes to incorporating different engineering tools and programming languages
- Examples of programming languages and engineering platforms incorporated, or to be incorporated: C++, Matlab Simulink, Codesys, C#, Node-RED, and more

Carsten Emde has a long history of software development, system integration and training, particularly for embedded system software. He is specialized on graphical user interface, robotics, real-time systems and on legal and business aspects of using Open Source software in industry. Last but not least, he has been the General Manager of the Open Source Automation Development Lab since its foundation in 2005.

www.osadl.org



Carsten Emde