

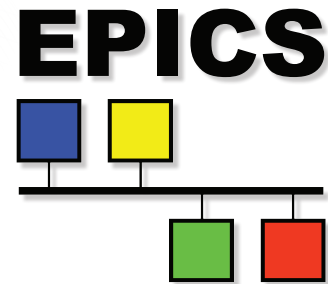
EPICS Device Integration

Service Description

Introduction

EPICS is a **control system middleware** or **framework** that allows distributed parts of the control system for Big Science machines to **communicate** with each other in a **standardized way** for the purposes of data acquisition and control of equipment.

Cosylab is the **leading control system integrator** for the EPICS system.



Use cases



These are three typical use cases:

1. **Single device integration** in a machine
2. Writing a **generic device support** module e.g. standard DAQ or motion control solution for an entire project
3. **Off-the-shelf EPICS support** provided by equipment manufacturers as part of their product offering

Big projects typically have all three types.

In-house or outsource?

The development part is best outsourced to experts. It requires specific expertise that is hard to come by and that you do not need permanently in the control group (or as an equipment manufacturer). But it can, and should, be integrated seamlessly into the overall CS project, often facilitated by the in-house controls group. The need for additional outsourcing services, such as onsite installation and support or commissioning support can be considered on a case-by-case basis. (ask for our Service Description on Outsourcing Services)

What we offer

Since 2002, Cosylab has built up a long list of references on EPICS device integration. It allows us to deliver the **right quality, on-time** and within the **agreed budget**. We:

- **Quote** on such projects with confidence, even **with incomplete requirements**, since we can rely on our experience from previous projects
- **Consult and advise:** help gather requirements from the different parties
- **Work fast:** efficient and effective. The best experts with the right tools
- Do a **quality job**. Neither under- nor over engineered, **well coded and tested**
- Deliver with **full documentation, test plan** and acceptance **test report**
- Provide **extra services:** on-site installation, cold and hot commissioning support

You can count on us again when the device integration needs updating. If your person leaves, you lose the knowledge. If Cosylab does the job, we make sure it's available for life!

Cosylab, October 2013
Service Description version 1.1

Teslova ulica 30
SI-1000 Ljubljana
SLOVENIA

Phone: +386 1 477 66 76
Email: info@cosylab.com
URL: www.cosylab.com

EPICS Device Integration (Continued from front side)

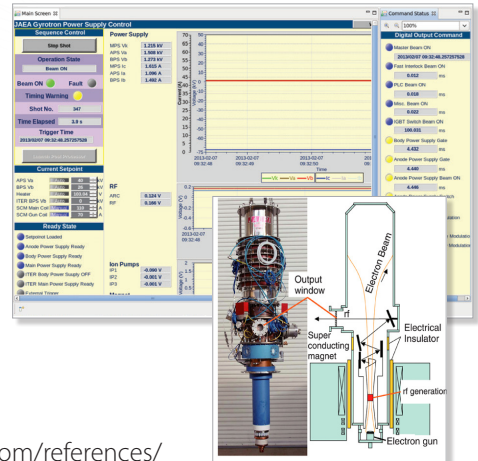
Service Description

A Recent Example

Gyrottron Integration for Japan Atomic Energy Agency (JAEA)

Cosylab did a control system integration on top of the CODAC Core System for a gyrottron, an RF source for an ITER tokamak. Key features:

- Automated, millisecond level control of the gyrottron operation.
- Includes integration of high voltage power supplies, RF sensors, arc sensor, ion pumps and superconducting magnets power supplies.
- High continuous sampling rates (40 ksps x 16 analog inputs for 3600 secs.) with NI PXI-6259 DAQ card.
- Control of the superconducting magnets power supplies (Oxford Instruments) is via RS-232



For more references see: <http://www.cosylab.com/references/>

Customer Satisfaction

Nigel Boulding (FMB Oxford - formerly Oxford Danfysik): "FMB Oxford has worked with Cosylab for the past 4 years to deliver turnkey solutions for complete beamlines and systems to synchrotron customers around the world. Cosylab were an obvious choice, as a leading commercial supplier of EPICS programming, to complement our comprehensive range of synchrotron products. In Cosylab we have found a flexible and capable organization with staff capable of extending their contribution beyond the EPICS interface into hardware selection and optimization. We look forward to continuing our successful partnership in future years."

Ron Chestnut, SLAC: "We have implemented a GPIB solution using the Cosylab microIOC at SLAC. The PEP-II storage ring currents here at SLAC are read out via Keithley meters and GPIB. Our previous solution had exhibited "hangs" which required local power cycling of the Keithley meters and reboots of the controlling IOC. Cosylab added two switchable AC power outlets to their microIOC supporting GPIB, allowing logic in the microIOC to power-cycle each meter individually. Cosylab personnel support our engineer closely through the commissioning."

How to make it happen

Simply by contacting us; either by e-mail (see left) or by contacting someone you already know at Cosylab.

You can provide us with any form of specifications you already have, or tell us the wish-list of improvements for your current systems. If we need to know more before we can start with the work, we typically propose a 3-day site visit to produce a requirements specification document.

We quote all effort and expenses upfront and invoice after acceptance of deliverables. "No cure, no pay"!

Cosylab, September 2013
Service Description version 1.0

Teslova ulica 30
SI-1000 Ljubljana
SLOVENIA

Phone: +386 1 477 66 76
Email: info@cosylab.com
URL: www.cosylab.com