

# TANGO Device Integration

## Service Description

### Introduction

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

Cosylab is a **leading control system integrator** for the TANGO 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 TANGO 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 in 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 2007 Cosylab has built up references on TANGO device integration. It allows us to :

- **Quote** such projects with confidence, even **with incomplete requirements**
- **Consult and advise** on these project, help with requirements elicitation, ...
- **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**
- Properly delivered 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**, e.g. with new device firmware or a major **control system version upgrade**

Cosylab, September 2013  
Service Description version 1.0

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## TANGO Device Integration (Continued from front side)

### Service Description

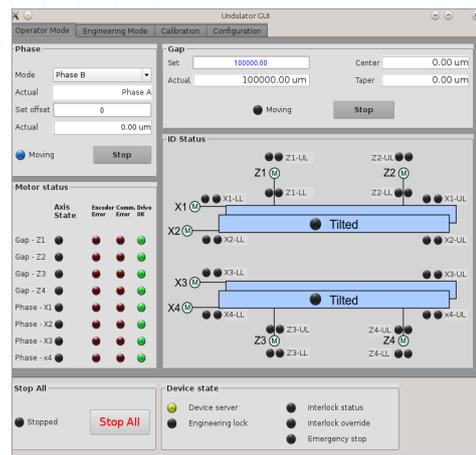
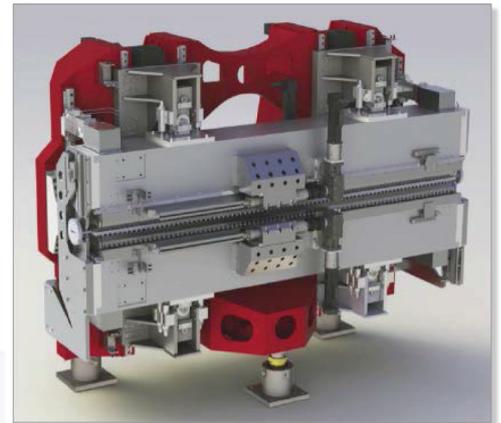
#### Recent Example

#### Elliptically Polarized Undulator Integration for MAX-lab, Lund, Sweden

Cosylab performed a control system integration in TANGO for the EPU-61 undulator.

#### Key Features:

- Coordinated movement of 8 motion axes
- High precision motion control
- Automated corrector coil magnet control as function from Insertion Device state (position)
- Future-proof Control System design



- Scanning operation synchronized with the beamline mono-chromator planned to be done in the future
- Operator Interface implemented with Taurus (Tango/Python/QT)
- High-level operator OPI
- Engineering & maintenance OPI

#### 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"!

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