



We collaborate on software and control systems.

▶ www.s2innovation.com

▶ contact@s2innovation.com

History of the company

S2Innovation was founded in December 2017 by:

Piotr Goryl, former Head of IT and Controls at SOLARIS,

Wojciech Soroka, former Procurement officer at SOLARIS

Since 2019 S2Innovation is a Polish-Slovenian Joint Venture (Investment of **Cosylab d.d.**).

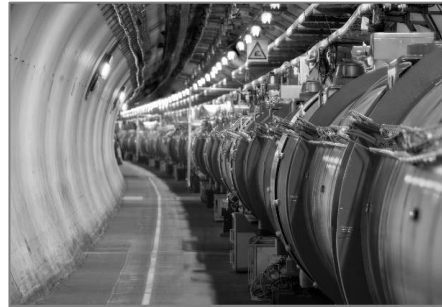
Cosylab

Cosylab provides system integration as well as customer-specific products and solutions covering the entire area of control systems and instrumentation.



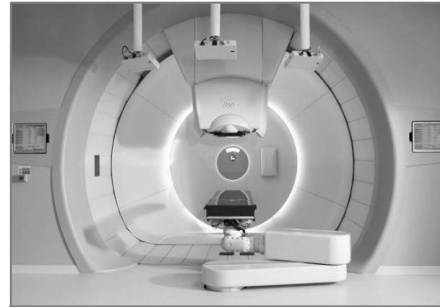
INDUSTRIAL APPLICATIONS

Embedded SW, control systems, cloud based applications



BIG PHYSIS

Projects improved with the expertise of the largest independent specialist



PARTICLE THERAPY

All software, engineering and integration you need to run a PT system from one place.



SPACE AND ASTRONOMY

Control system for large telescopes, space technology...

Mission and Vision

- ▶ S2Innovation specializes in development of dedicated software for monitoring and control of research devices and processes using both open-source and commercial toolkits.
- ▶ Our mission is helping R&D laboratories to work better, faster and more efficiently using the most advanced software tools.

We are software engineers. We do not simply write code - we solve complex problems!

The team

Additional support from

- ▶ Krystian Kędroń,
- ▶ Grzegorz Kowalski,
- ▶ +3 students.

and we are growing...



Our expertise

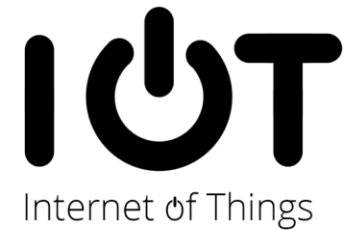
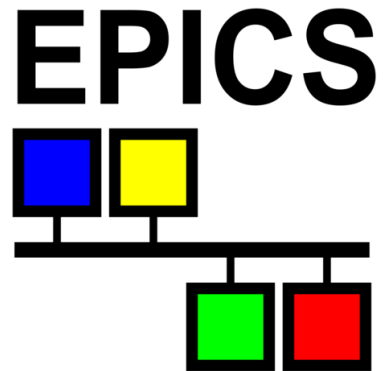
- ▶ Control systems engineering:
 - ▶ For particle accelerators,
 - ▶ For large scale infrastructure,
 - ▶ For laboratories,
- ▶ Software development:
 - ▶ Python, C++, Java, .Net, HTML/JavaScript/CSS, Matlab
 - ▶ **Tango Controls, EPICS**
- ▶ Computation,
- ▶ Documentation,
- ▶ DevOps,



Experience

- EPICS and Tango Controls based solutions
- Cloud Energy Management System
- Alarm Management System (PANIC, IC@MS)

SIEMENS



Support for cppTango, PyTango, JTango

(ESRF/Tango Community orders, 2018 -)

GitLab Projects Groups More Search or jump to...

tango-controls

tango-controls Group ID: 360928 Leave group New project

[WORK IN PROGRESS] The Tango Controls community (<https://tango-controls.org>) is moving here from <https://github.com/tango-controls>. Watch this space for progress.

Recent activity (last 90 days)

57	45	7
Merge Requests opened	Issues opened	Members added

Subgroups and projects Shared projects Archived projects Search by name Last updated

- test_gh_import a subgroup for testing imports from GitHub without polluting the tango-controls namespace 1 0 1
- cppTango TANGO kernel c++ implementation ★ 5 5 days ago
- tangobox Upgrade of Tango-Box virtual machine ★ 0 4 hours ago
- TangoTickets You have an issue with tango-controls framework and it might have an impact ... ★ 0 2 weeks ago
- wunderground Tango controls device class to read the weather using the Weather Undergroun... ★ 0 7 hours ago
- pytango Python binding to Tango C++ ★ 5 2 weeks ago
- rfc The Tango RFC project aims to define the Tango Controls kernel specification. ★ 0 1 day ago

▶ S2Innovation participates in development and maintenance of Tango Controls kernel

▶ See the following contributions, as an example:

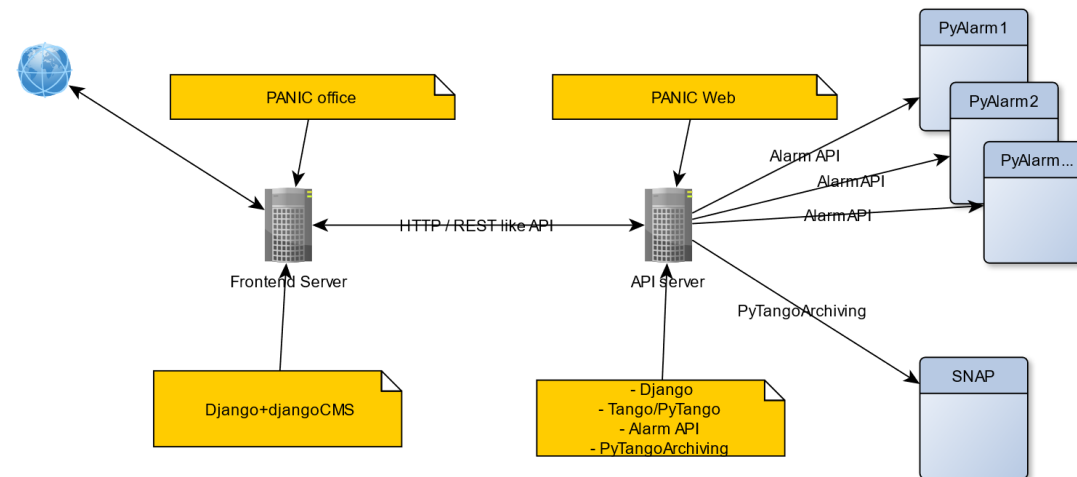
▶ https://gitlab.com/groups/tango-controls/-/merge_requests?scope=all&utf8=%E2%9C%93&state=all&author_username=mliszcz

▶ 3 years contract with Tango Community awarded in 2021.

Alarm Management System @SOLARIS



- ▶ In 2018 S2Innovation introduced PANIC Alarm Management System at NCPS Solaris (Krakow, PL):
- ▶ PANIC is PyTango-based, developed by ALBA,
- ▶ S2Innovation:
 - ▶ Gather requirements from Solaris Team (general and specification for alarms),
 - ▶ Provided training
 - ▶ Prepared .rpm packages for SOLARIS,
 - ▶ Deployed the system,
 - ▶ Preconfigured more than 100 complex alarms,
 - ▶ Developed and deployed monitoring web application,
 - ▶ Integrated the PANIC with the eLog logbook and provided SMS facility,



Cooperation with Max IV since 2018



- ▶ Development and implementation of the TANGO Controls and Sardana based software for MAX IV accelerators and beamlines control systems,
- ▶ Development of controls systems GUIs,
- ▶ WebJive development,
- ▶ DevOps tasks,
- ▶ software documentation,
- ▶ software tests.

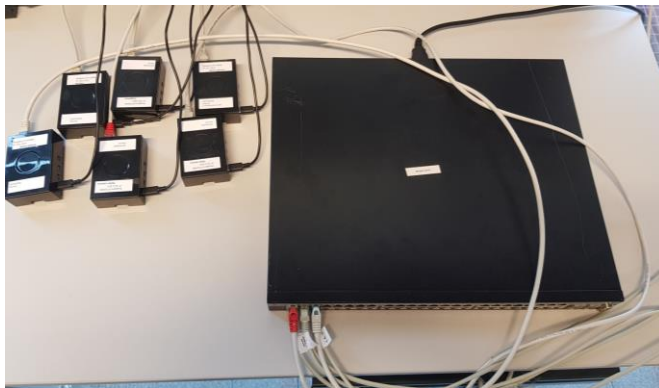
Services are provided using the following programming languages and technologies: Python, C++, Go, ReactJs, Ansible, Docker, Singularity.

Cooperation with CosyLab

- ▶ Software development for Proton Therapy accelerators - Dose Delivery System (C++)
- ▶ Web application for **Spring 8 synchrotron facility** in JAPAN (with CosyLab Japan branch).
- ▶ Common application for control system and software development services at **ESS** (Framework Contract to be signed in 2021).



Laser beam diagnostic system for ICFO



- ▶ Deployment of a distributed Tango Controls system for 6 Raspberry Pi computers:
 - ▶ Tango Controls base functionality (Database, Starter, libraries, Astor, Jive),
 - ▶ WebJive,
 - ▶ Bensikin/SNAP archiving,
 - ▶ Network configuration,
- ▶ Integration of various devices: cameras, spectrometers, photodiodes, a delay generator into Tango
 - ▶ Development of device servers for Basler cameras, Ophir photodiodes, power meters and Ocean optics spectrometers,
 - ▶ Reuse of existing device server for the delay generator
- ▶ User interface based on WebJive,
- ▶ Few improvements to WebJive pushed to its main repository
- ▶ All results are available here:
<https://gitlab.com/s2innovation-partners/icfo>

IC@MS - Integrated Critical @larms Management System

CLOUD BASED alarm Management System based on PANIC by ALBA

- ▶ Shortened of downtimes,
- ▶ Increased efficiency of processes,
- ▶ Reduction of personnel stress:
 - ▶ Alarms handling streamlined,
 - ▶ Increased situation awareness,
 - ▶ Integration of production and infrastructure,
- ▶ Non-typical situations monitored thanks to runtime alarming formulas definition

The screenshot displays the IC@MS web application interface. At the top, there is a search bar and navigation links for 'Admin', 'Configuration', and 'Logout'. Below the search bar, there are filters for 'Severity' (set to 'All'), 'State' (set to 'All'), and 'Active since'. The main content area is divided into two sections: 'Active alarms' and 'Not active alarms'. The 'Active alarms' section shows a table with one entry: 'TEST_ALARM_FAST' with a severity of 'WARNING', state of 'UNACK', and active since 'Fri, 02 Jul 2021 13:19:03 GMT'. The 'Not active alarms' section shows a table with five entries: 'MODULATORS_SYSTEM_FAULT' (ALARM, NORM), 'TEST_ALARM' (WARNING, NORM), 'GUN_SYSTEM_FAULT' (ALARM, NORM), 'MY' (ALARM, NORM), and 'MAXIV_DEMO_TEST' (WARNING, ERROR). Each entry includes a description, formula, and device name. The interface also features pagination controls and a refresh button.

Alarm	Severity	State	Active since	Description	Formula	Device
TEST_ALARM_FAST	WARNING	UNACK	Fri, 02 Jul 2021 13:19:03 GMT	Simple alarm...	sys/tg_test/1...	panic/exampl...

Alarm	Severity	State	Active since	Description	Formula	Device
MODULATORS_SYSTEM_FAULT	ALARM	NORM	Fri, 02 Jul 2021 11:22:10 GMT	Gun and H...	(elin/mod1/...	panic/exam...
TEST_ALARM	WARNING	NORM	Fri, 02 Jul 2021 11:22:10 GMT	The simples...	sys/tg_test/...	panic/exam...
GUN_SYSTEM_FAULT	ALARM	NORM	Fri, 02 Jul 2021 11:22:10 GMT	Gun and H...	elin/gun/hv 1...	panic/exam...
MY	ALARM	NORM	Fri, 02 Jul 2021 11:22:10 GMT	MY	4>5	panic/exam...
MAXIV_DEMO_TEST	WARNING	ERROR	Fri, 02 Jul 2021 11:21:30 GMT	The simples...	sys/tg_test/...	panic/demo/...

Our main partners



How can we help FAIR?

- ▶ Development for Common Middleware (CMW and FESA) - full life cycle:
 - ▶ Device servers,
 - ▶ GUIs and applications,
- ▶ Full-stack software development in C++, Python and Java, various web technologies,
- ▶ CI/CD, including software packaging and containerization,
- ▶ Software documentation (manuals, developers' documentation, protocol specification etc.),

Thank you!

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