S2INNOVATION – FROM SCIENCE TO INNOVATION

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Outline

• Mission and Vision
• What about Tango Industrial SCADA
• Status and Goals
Help scientific projects in bringing results quicker

We are happy to provide valuable services especially related to development of technologies. We believe that there is a lot of scientific technologies which can be applied outside of the science. There are also technologies which can be brought to the scientific world.

Knowledge and technology exchange shell bring profit to the whole community.
Strategy

Participate in technology development

Get deep knowledge of technology

Find new areas

Apply
Innovation is: production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome.
• Advantages
  • Complete set of tools
  • Open Source
  • Easy to build new applications on top of it
  • Community support

• Challenges
  • Compete with well known solutions
  • Requires IT knowledge to be installed
  • Documentation
  • Security
Remote control and monitoring of processes, devices and Things
There are many SCADAs available on the market. **Tango Controls** does what others do in more flexible and more clever way.
Tango Controls

Approach
- Object oriented
- Service oriented
- Open Source

System qualities
- Scalable
- Flexible

Delivery
- Matching requirements
- Cost effective
- High quality
Tango Controls

SCADA
- GUI
- Archiving
- Alarm Management
- Recipe

System
- Configuration
- Management
- Development

Libraries/API
- C/C++
- Python
- Java

Integration
- WWW
- Computing tools
- ...

Device Server
- Modbus RTU TCP
- EthernetIP
- SCPI
- HTTP
- ...

Develop an open source tool kit called Tango Controls for building high performance and high quality distributed control systems for small and large installations. The tool kit design is based on the concept of distributed devices or objects and provides native support for multiple programming languages. The tool kit implements a full set of tools for developing, managing and monitoring small and large control systems. Build a sustainable community dedicated to ensuring that the Tango Controls tool kit continually improves and remains modern to serve the needs of the community for at least the next 20 years. The goal of Tango Controls is to become a de facto industrial standard for industrial distributed control systems.
Fast market changes and need for flexibility may require hardware/equipment vendor change. A standard solution is to buy new hardware with a new SCADA or stay behind competitors due to lack of flexibility. However, it leads to multiple isolated systems, which are hard to be managed.
Tango Controls

Allows user to **develop his own drivers** and **applications**
fast for new hardware and systems and connect them together.

Anyone can do it himself or ask an external company thanks to access to **clear** and **open API** and **source code**
Generate **device driver** (device server) **quickly** with POGO tool:

Define a device with objective approach and **meaningful names**.

Then, write only code specific to your hardware (in C++, Python or Java)
Allows user to develop his own drivers and applications for new hardware and systems, test and connect them together. Anyone can do it himself or ask an external company thanks to access to clear and open API and source code.
Taking reliable decisions fast requires access to information from/at many different levels and various subsystems.

Standard way:

Engineers and operators *spent time on meetings* and reports
Forget about complicated “engineers’ Kanji” (like B1_OH48_IX), connect systems together and provide your management and engineers with meaningful and structured names, like:

Brewery/Krakow/PilsnerTub/TimeToFinish

Distribution/Venice/PilsnerWarehouse/CurrentStock

Think Objects  and Systems not signals
Tango Controls

Can integrate Everything with Everything
Thanks to be fully objective it allows to build multi-layer system easy to browse and control
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Think Objects and Systems not signals

Competitors claims they are already object oriented...
Tango Industrialization

- Go for very specific applications
  - Fast data acquisition (>10Hz)
  - New industry/commercial areas where control/acquisition systems are not yet applied
  - Integration what is not yet integrated

or

- Build a Tango Based tool for growing general applications
  - IoT
  - BigData
  - AI
Tango Application

Tango Middleware

- Smart watch
- eBay
- MySQL
- bbc.com
- Weather station
- House heating system
- GIS

Analysis/Al

Decision helper:
go for beer or take a sleep?
Plan for S2Innovation

- Provide direct services in the field of software and control systems development
- Being a middleman or collaborator of others

Looks for needs of scientific projects, especially ones where Poland is involved

Get deep knowledge of technologies

Apply outside the science
Current activity

• PANIC/PyAlarm deployment at SOLARIS
• Continuation of Community Services started by 3Controls
  • Device Classes Catalogue
  • Documentation
  • TangoBox
• Looking for other opportunities and way we may help the Community and other scientific projects
• Keep going on looking for opportunities on the non-scientific market
Planned milestones

- Build a team
  - Minimum – one additional developer by the end of the year
  - Goal is to get 6 persons on board
- Acquire new (industry) contract
- First development for VR/AR technologies