Andy Götz (ESRF)
on behalf of
TANGO Collaboration
BUNJIL THE CREATOR
BUNJIL THE CREATOR

CHEERS
THANKYOU
NGOON-GODGIN!
“If you want to walk fast then walk alone, but if you want to walk far then walk together”

African proverb
THE TANGO APPROACH

CONTINUOUS IMPROVEMENT
TANGO CONTINUOUS IMPROVEMENT

• Keep the concept of a **distributed object** simple

• Integrate new features and applications into the core

• Multiple languages as 1\textsuperscript{st} class citizens (C++, Python + Java)

• Documentation + Installation
TANGO 9

ANOTHER MAJOR RELEASE!
TANGO 9 NEW FEATURES

• Pipes (aka Streams)

• Dynamic commands

• Forwarded attributes

• Enumerated attributes

• Polling thread optimisation

• New base class – Device_5Impl (API is backwards compatible)

The People

E. Taurel
P. Verdier
J-L. Pons
F. Poncet
(ESRF)

G. Abeille
(SOLEIL)
A new version of the Java implementations for device server JTango has been developed using annotations. It makes writing Java device servers MUCH easier!

The following annotations are supported:

@Device: class
@Attribute: field
@Command: method
@State: field
@Init: method
@DeviceProperty

G.Abeille
(SOLEIL)
P.Verdier
(ESRF)
• A new API for Java clients has been developed called ezTangORB. It makes writing Java device clients MUCH easier!

• Example:

```java
//ezTangORB
TangoProxy proxy = TangoProxies.newDeviceWrapper("tango://whatever:10000/sys/tg_test/1");
double result = proxy.<Double>readAttribute("double_scalar");
```

I.Khokhriakov  
(HZG)
• **ALBA** developed the first Python TANGO control system for controlling accelerator and beamlines

• Some sites that love Python:
  
  LMJ
  DESY
  Max IV
  ELI-ALPS
  SKA SA
  ...

Tango Collaboration in 2015 – 21 October ICALEPCS 2015
“It would also be nice if the tango programming interface would be more pythonic. The final goal is to make writing tango device servers as simple as possible” [TEP1]

- A new pythonic **High Level API** (HLAPI) has been implemented and which supports co-routines (using gevent)

```python
import time
from PyTango.server import run
from PyTango.server import Device, DeviceMeta
from PyTango.server import attribute, command

class Clock(Device):
    __metaclass__ = DeviceMeta
    time = attribute()

    def read_time(self):
        return time.time()

    @command(din_type=str, dout_type=str)
    def strftime(self, format):
        return time.strftime(format)

if __name__ == "__main__":
    run((Clock,))
```
A new event based archiving system (HDB++) has been implemented with:

- higher data rates,
- us time resolution,
- precise timing
- multiple TANGO control systems

See talk WED3O04.

The architecture allows multiple database backends to be plugged into the archiving system. So far MySQL and Cassandra are implemented.

See poster WEM310.

R.Bourtembourg  
P.Verdier  
J-L.Pons  
(L.Pivetta et. al.  
(ELETTRA+ESRF)

Tango Collaboration in 2015 – 21 October ICALEPCS 2015
A RESTful http based API called mtango (m for mobile) has been developed for TANGO.

- Uses TANGO Access Control and tomcat for security
- Can be used from any client implementing http
- API implemented for JavaScript
- See website for API

I.Khokhriakov (HZG)
WEBSITE REDESIGNED

http://www.tango-controls.org

J-M Chaize
(ESRF)

Connecting things together

What is TANGO Controls?
A free open source device-oriented controls toolkit for controlling any kind of hardware or software and building SCADA systems...

READ MORE

Why choose TANGO Controls?
Because it is easy to use, flexible, and highly scalable. It provides a complete set of features for controlling equipment and a lot of services for managing systems.

READ MORE

How to use TANGO Controls?
Just download it and install it. Then reuse or write a device server, deploy and marvel at how it works!

READ MORE
TANGO VIRTUAL MACHINE


A. Götz
(ESRF)
NEW MEMBERS

TANGO COMMUNITY IS GROWING!
• 3 Extreme Lightsource Infrastructures have chosen TANGO+EPICS
ASTRONOMERS ADOPTING TANGO

- INAF using TANGO for Binocular telescope archived data
- SKA has chosen TANGO as the common framework for the Telescope Manager
- EGO-VIRGO gravitational observatory using TANGO
- ERAS using TANGO on Raspberry Pi
HOW TO FINANCE THE ROADMAP?

SUSTAINING TANGO WITH A

COLLABORATION CONTRACT
COLLABORATION CONTRACT

- We have prepared a contract with partners who are willing to finance TANGO infrastructure developments. Contract is for 5 years.

- Two types of partners: Core + Contributors

- Potentially 10 partners have expressed their interested. This would finance at least one FTE / year.

- Collaboration contract will start in 2016

- TANGO stays free and Open Source and Sustainable!
OTHER PROJECTS

- Student training
- Post mortem tools
- Packaging with Docker
- Many more e.g. device servers for White Rabbit, oscilloscope based on Zed board, web browser, etc. etc.

R.Ponsard
(LGM)

ELI-ALPS
SKA-SA

SOLARIS

Community
CONCLUSION

TANGO IS CONSTANTLY IMPROVING

TANGO COMMUNITY IS GROWING

TANGO IS SUSTAINABLE