

Workshop Nov. 14 -15, 2001

- ⌘ The aim of this workshop is to bring together TACO and TANGO users to present and discuss their latest developments because sharing know-how and solutions in these areas can be useful for all participants.
- ⌘ We (at ESRF) want feedback on how to improve TANGO (or TACO).
- ⌘ The emphasis will be on:
 - ☒ TACO,
 - ☒ Status of TANGO,
 - ☒ Why and how to move from TACO to TANGO,
 - ☒ Python/Java/C++ applications,
 - ☒ Applications for beam line control.



How it all began

- ⌘ The construction of the ESRF started in 1988 and a modern Control System for the Machine was needed.
- ⌘ At that time:
 - ☒ VMS, DecNet, VAXLN, PDP, DOS,
 - ☒ X10 released on HPUX,
 - ☒ No OO paradigm nor language.
- ⌘ In it's infancy:
 - ☒ XENIX, UNIX BSD & SYS V, TCP/IP.
- ⌘ Profound hardware standard with poor software support:
 - ☒ VME with Motorola CISC cpus.
 - ☒ OS9 only RT-OS with reasonable development tools.
 - ☒ Waiting for TCP/IP support on VME (no VxWorks).



How it all began



- ⌘ Following LEP's pioneering system design:
 - ☒ We decided to go with UNIX(HP), OS9(VME) and TCP/IP,
 - ☒ RPC as basis of Client/Server (Application/DeviceServer) paradigm.
- ⌘ CERN RPC was ported to OS9.
- ⌘ CERN RPC replaced by SUN/RPC with NFS on OS9.
- ⌘ First prototype DeviceServer on XENIX PC.
- ⌘ Inspired by the MOTIF widget library:
 - ☒ The DeviceServer framework followed,
 - ☒ OIC was our OO approach using plain C.



How it all began



- ⌘ For application programmers:

- ☒ Plain C API library (devput, devget, ...).

- ⌘ RTDBM as resource data base.

- ⌘ ... and then:

- ☒ We wrote hundredths of DeviceServers and Applications,

- ☒ Only 3 1/2 years later, we commissioned ESRF.

- ⌘ ... what a proud **SUCCESS !!**

- ⌘ About another 3 years later APS was commissioned with EPICS.



Improvements



- ⌘ ndbm for lightweight TACO on beamlines.
- ⌘ Data Collector.
- ⌘ History Data Base implemented with ORACLE.
- ⌘ C++ support for DeviceServers.
- ⌘ Security.
- ⌘ Multiple Host support.
- ⌘ Asynchronous call & events.
- ⌘ APIs for other languages: LabView, MathLab, Python, JAVA.
- ⌘ Other Platforms: Linux, Windows.
- ⌘ Source Code Release.
- ⌘ MySQL as resource data base (FRM-II).



Why TANGO ?

⌘ We felt that we should redo the thing:

- ☒ but cleaner, more easy to use, more flexible, ==> we have learned a lot from TACO ...
- ☒ with standards for distributed objects, ==> IIOP, CORBA
- ☒ with modern languages, ==> JAVA,C++,Python
- ☒ with support for ==> WEB enabled applications,
- ☒ with build in support for system ==> events,
- ☒ with build in support for ==> automatic connection handling,
- ☒ with better support for generic programming ==> attributes,
- ☒ with relational data base support right from the start ==> MySQL,
- ☒ with ==> OO support on all levels.

⌘ Anything else ? ... Something forgotten?

- ☒ hopefully this workshop will tell us.