Manage the MAX IV Laboratory Control System as an Open Source Project

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User Autonomy

Our mission is to offer an Open Control System easy for everyone to contribute. Tango and Sardana make transparent the development of application to the Machine and Beamline scientists. They access the data and action published by the control system like any library API.

KITS Café

Since October 2012 the staff of MAX IV Laboratory benefits from a regular and very informal event set up by the Control team. The purpose is to meet each other and to share the knowledge about the control system and any activities related to the software. The different actions described below are directly inspired by the ones used by the Linux User Group and the Agile movement.

Implementation

Open the market: We provide a standardised development platform to anyone with a Maxlab user account, this is achieved by hosting an NX Server[3] with the standardised MAX IV environment.

Open the source: the git software repositories are made available through Gitorious[4], a webserver that allows any user to contribute to the project. Using a well-defined pair of Git and GitHub, the whole team can work together. To achieve this goal, a shared workspace is chosen as the best way to carry on the work.

Open the market: the GUI and CLI were designed as commands. This way, the user has access to two different interfaces of the system: one way is through the GUI, the other through the CLI.

Collaboration possibilities

At many levels:

Share the Library to the Hardware
Share the Tango Device
Share the Sardana component
Share the GUI and CLI
Share the Development Infrastructure

References


Origin of Control System Contributions

Staff (users with programming skills): the users of the MAX IV control system are the beamline and machine scientists. They have varying programming skills and interests. Some are able to write their own control system components for their own domain, using C++ or Python etc.

Collaboration: the software backbone of the MAX IV control system relies on collaboration with other synchrotron facilities. The TANGO distributed control system relies on contributions from all the facilities in the TANGO collaboration. MAX IV is also a contributor to Sardana and Taurus[1] and benefits from its community.

Third party contributors: collaborating with subcontractors and suppliers requires a somewhat different effort. As far as possible MAX IV arranges to maintain ownership of the code base so that it can remain open source.

References


The MAX IV Laboratory

In order to make this possible, the software backbone of the MAX IV control system was designed as a service-oriented architecture (SOA). The main goal was to provide an easy-to-use interface (CLI). The Sardana distribution helps us a lot to achieve this goal.