

The FINUDA Slow Control System

**present status
and
future plans**

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Main requirements

- **Every single detector:**

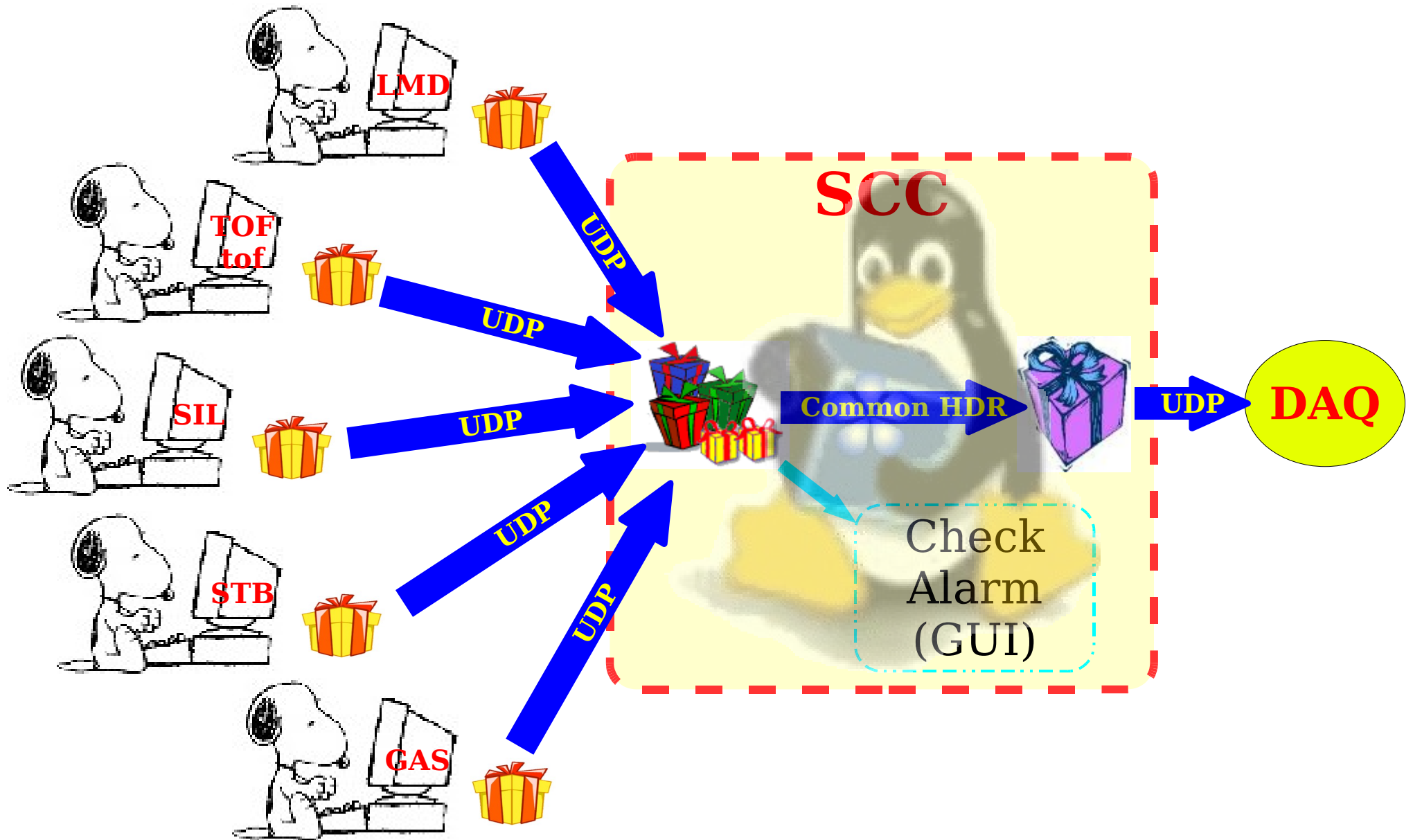
- Online fast monitoring of supplied voltages, currents and trips.
- Check for dangerous/anomalous situations (losses of gas, overcurrents, ...)
- **FEGUI (Friendly - Easy - Graphical User Interface).**
- **Fast and User-friendly TRIP RECOVERY** (automatic in some cases)

- **Communication with DAQ:**

- Each Slow Control machine sends informations about its own state via UDP socket to a single machine (Slow Control Center).
- **Slow Control Center:**
 - Receive all UPD packages (asynchronous information)
 - Read the content of every package and inspect the current status of every detector
 - Show any warning message (trips, communication problems, ...)
 - Build a single package including all received informations (with a common header)
 - Store the complete information to local raw-files



SCC (Slow Control Center)





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My
proposal

Why LINUX?

- 1) The SCC is developed within the fROOT package, thus:
 - ROOT facilities could be exploited
 - The TThread class is available (to handle asynchronous incoming informations)
 - The same structure can be used in order to monitor incoming information and to inspect saved raw-files.
 - Information can be saved into compressed root files.
- 2) **C++ provides more facilities than labview:**
 - **...C++ is Object-Oriented.**
- 3) **Future upgrades of the code would be less time consuming...**
(GUI is not the most important issue: LabVIEW could bring more complications than facilities...)



Past Status (year 2005)

➤ **Proposal for the SCC.**

• **tofino / TOFONE:**

- ➔ Automatic trip recovery (completed: April 2005)
- ➔ Arrangement for the PCI CAENET controller (software ready but drivers still missing: May 2005)
- ➔ Arrangement for the new TOFINO Slow-Control (software structure prepared: May 2005)
- ➔ new TOFINO Slow-Control (to be developed)
- ➔ Installation and test of the PCI CAENET controller (to be done)
- ➔ Definition of the Slow-Raw-Event-Structure: header+data (completed: June 2005)
- ➔ Real-time Slow-Raw-Event encoding. (completed: August 2005)
- ➔ Slow-Raw-Event sent to the SCC (SlowControlCenter) via UDP socket. (completed: August 2005)

LowMassDrift chambers:

- ➔ Installation and upgrade of the workstation (completed: April 2005)
- ➔ Test of the ISA board drivers on Windows-XP (completed: April 2005)
- ➔ Arrangement for the PCI CAENET controller (software ready but drivers still missing: May 2005)
- ➔ Old Tofino/Tofone components removal (completed: May 2005)
- ➔ Log files removal (completed: May 2005)
- ➔ Automatic trip recovery (in progress: August 2005)
- ➔ Installation and test of the PCI CAENET controller (to be done)
- ➔ Definition of the Slow-Raw-Event-Structure: header+data (completed: June 2005)
- ➔ Real-time Slow-Raw-Event codification. (completed: August 2005)
- ➔ Slow-Raw-Event sent to MegaConsolle via UDP socket. (completed: August 2005)



Present Status

• **General issues:**

- **FINUDA Custom Control Vis PCI CAENET controller** (completed: January 2006)
- **New Machines (PC) [RAID-1]:**
 - **TOF** (completed: February 2006)
 - **LMD** (completed: February 2006)
 - **STB** (completed: September 2006)
 - **SIL** **(to be done, if possible)**
- **Slow-Raw-Event-Structure: header+data** (completed: June 2005 ; upgraded: March 2006)
- **Real-time Slow-Raw-Event encoding** (completed: August 2005 ; upgraded: March 2006)
- **Slow-Raw-Event to SCC (UDP socket)** (completed: August 2005 ; upgraded: March 2006)
- **SCC** (completed: September 2006)

• **TOFino / TOFONE** (New Code in development) :

- New Workstation installation and test (completed: February 2006)
- Installation and test of the PCI CAENET controller (completed: February 2006)
- New Slow Control for TOFONE (completed: April 2006)
- New Slow Control for TOFINO (completed: May 2006)
- Automatic trip recovery (disabled: not required)

LowMassDrift chambers:

- New Workstation installation and test (completed: December 2005)
- Automatic trip recovery (not required)
- Installation and test of the PCI CAENET controller (completed: December 2005)



Present Status

- **SILicon microstrips**

Further upgrades/changes are not foreseen.
Information about currents are still sent directly to DAQ.

- **StrawTuBes:**

Developing new code from scratch (development completed on Oct 2006)

- **GAS:**

Work in progress.

- **Low voltage controller (LMD-STB):**

Missing

Required upgrades (...for the next data-taking)

- **SIL:**

New Workstation with RAID disks or at least RAID mirroring on the old workstation (is it possible?)

- **STB:**

RAID system (is it possible?)