

# **Configuration database status report**

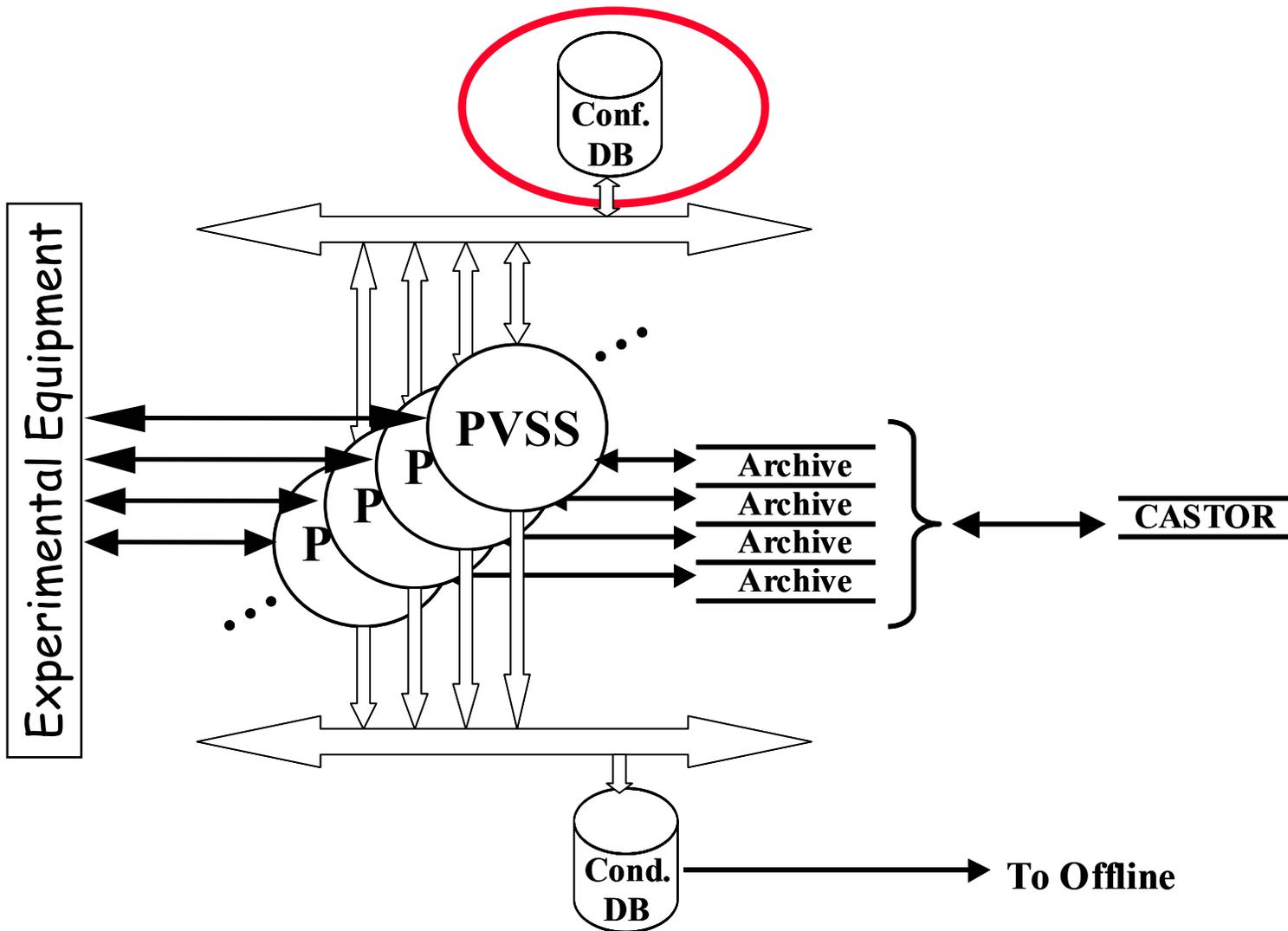
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**September 29<sup>th</sup> 2004**

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**External data handling architecture**  
 (see C. Gaspar, 25 nov 2003)

# Objectives (reminder)

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- ◆ **Initialize, configure and monitor detector components**
  - e.g. boards, channels, trigger algorithms
- ◆ **Running modes/activities**
  - physics, calibration, subdetector testing
- ◆ **Store configuration data in a database**
- ◆ **Design and implementation**
  - Schema
  - Tools: maintenance, data entry/retrieval, configuration, expansion, navigation

# Schema (done)

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- ◆ Oracle DB
- ◆ Devices (types, names)
- ◆ Links (between devices)
- ◆ Paths (from device a to device b)
- ◆ Partitions (selectable subsets of the detector)
- ◆ Activities (running modes)
- ◆ Integrated with JCOP conf. db tool

# Integration with JCOP conf. db tool

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- ◆ **PVSS <-> Oracle**
- ◆ **Use this tool off the shelf**
- ◆ **To store device parameter sets (values of registers)**
- ◆ **For activity dependent recipes**
- ◆ **Some version control**
- ◆ **Independent table sets**
- ◆ **Ensure consistency of names with LHCb tables**

# Schema (to be done)

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- ◆ **Version control**
- ◆ **How to store software or pointers to it?**
- ◆ **Trigger algorithms for Trigger Challenge**
- ◆ **Spares**
- ◆ **History**
- ◆ **Geographical location of devices**

# API

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- ◆ **Required for db access from different clients (Python, C++)**
- ◆ **Work started**
  - **C++ routines to connect to PVSS (via DIM)**
  - **Visualiser cdbVis (via Python)**

# Production status

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- ◆ **Integrated into TFC control system**
  - Dynamically determines the switch connectivity
  - Finds free devices
  - Uses partitions
  - Save recipes (hw configuration) in JCOP db
- ◆ **Software and panels in CVS:**
  - <http://isscvcs.cern.ch/cgi-bin/cvsweb.cgi/TFC/?cvsroot=lhcb>



System

State

07/09/2004 14:26:40

Partition\_controlByOdin01

READY\_FOR\_RUN

Sub-System

State

Subsyst_01	READY_FOR_RUN	
Odin/ODIN_01	RUN NOT READY	

GET\_READY

Orbits	208214820
Bunch IDs	0xFFF34A
Total L0 Triggers	104568
Gated L0 Triggers	104568
L1 Triggers	1048575
L1 Rejects	0
L1 Accepts	0
L1 IP destinations	0
HLT IP destinations	0

### Readout supervisor settings (correspond to a recipe)

#### L0 trigger

- L0 external trigger
- Random L0 trigger
- Always force random L0
- Periodic trigger A
- Calibration trigger A
- Auxiliary trigger
- Always force auxiliary
- Timing trigger

#### L1 trigger

- L1 external trigger
- L1 trigger via GbE
- L1 internal trigger
- Random L1 trigger

#### Commands

- L0E FE reset
- L0+L1E FE reset
- Periodic command
- IP assignments

#### Expert panel

Address	<input type="text"/>	<input type="checkbox"/> I2C
Value (R)	<input type="text"/>	
Value (W)	<input type="text"/>	<input type="button" value="Write"/>
Mask (W)	<input type="text"/>	<input type="button" value="Read"/>

<input type="button" value="Counter Reset"/>	<input type="button" value="System Reset"/>
<input type="button" value="Counter Update"/>	<input type="button" value="Subscribe Cnts"/>

Status

Free ODIN

Configure ODIN

Configure THOR

Configure MUNIN

FREJA

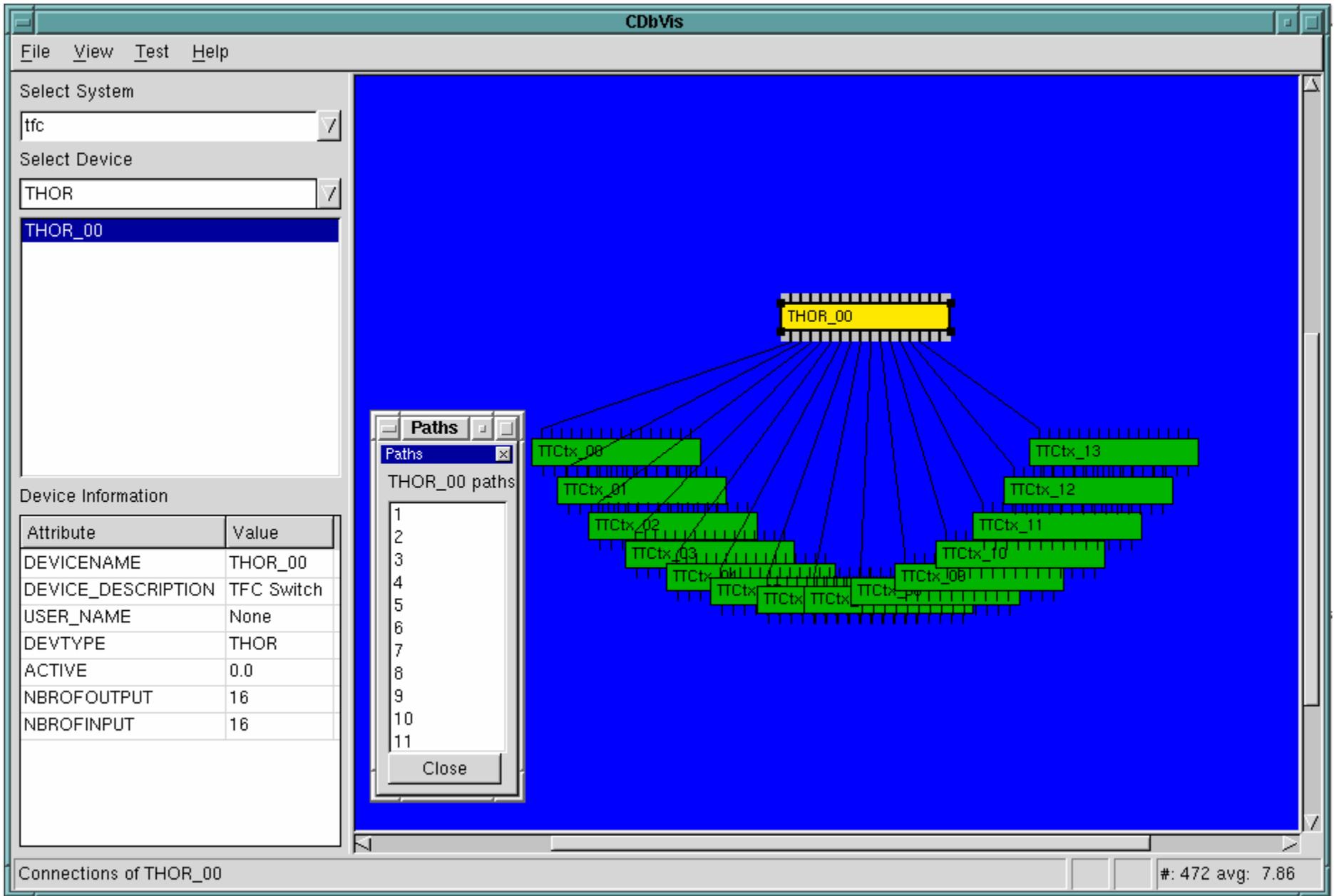
Save settings

Exit

# Tools

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- ◆ **Visualiser/editor cdbVis**
- ◆ **Graphic interface (python) to db**
- ◆ **Displays devices and their connections**
- ◆ **Can select, copy & paste**
- ◆ **Still to do:**
  - **Mass data entry**
  - **Partition editor**
  - **Fault identification**



# Conclusion

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- ◆ **Rudiments of system exist**
- ◆ **Integrate with subdetector control systems**
- ◆ **First production version early 2005**