

NRC Development

This page captures various information about the development of the NRC.

The CERN website, [NRC](#), contains the plan and additional information.

Here are [Ric's notes](#) on the Functional Blocks of the CSC.

Firmware

SVN repository: <file:///afs/slac/g/reseng/svn/repos/AtlasCsc>

Module	Register description	Function
Core		Version information and clock selection
BUSY	AtlasCscBusyReg	DTM TTC and BUSY forwarding
TTCrx	AtlasTtcRxReg	DPM TTCrx block
TTCem	AtlasTtcTxEmuReg	DTM TTC emulator
SCA	AsmPackCtrlReg	Switched Capacitor Array Controller block
FEX	AtlasAsmPackFexReg	Feature EXtraction block
FEX-lite	AtlasAsmPackFexLiteReg	Simple FIFO interface to FEX input header data
ROL	TBD	Read-Out Link block

Software

Base Program: **DAT**

- [Mini workshop](#)

Version control

- SLAC: <file:///afs/slac.stanford.edu/g/cci/repositories/nrc>
- CERN: [muondaq web svn](#)

Structure

Directory	Description
common	Common helper code
hal	Hardware Abstraction Layer
rci	Remote Communications Interface
fee	Front-End Electronics interface for the FEX RCEs
rol	Read-Out Link interface for the Formatter RCEs
supervisor	The bridge code for interfacing between the Control side and the Real-Time sides
app	NRC Application launching code
CSCModules	The Control Processor code, comprising of both stand-alone code and the TDAQ interface

Build system

- [SCons: man](#)
- SConstruct file describe how to build the project.
- SConscript files describe how to build the packages of the project.
- Site-specific: <file:///afs/slac.stanford.edu/g/cci/repositories/nrc/scons>
 - [JJ's ImportProject description](#)

Shell commands for dumping and manipulating firmware

- `core`
 - `busy` (Linux only)
 - `ttcRx` (RTEMS only)
 - `ttcEm` (Linux only)
 - `sca` (RTEMS only)
 - `fex` (RTEMS only)
 - `rol` (RTEMS only)
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- `llaDrain` (RTEMS only): Reads the TTCrx FIFO as fast as possible.
 - `fexDrain` (RTEMS only): Reads the TTCrx and FEX-lite FIFOs as fast as possible.

Trigger

LTP

- [Setup](#)
- [Pattern files](#)

ROD Busy Module

- [Manual](#)

Output data format

ROS information

- <http://atlas.web.cern.ch/Atlas/GROUPS/DAQTRIG/ReadOut/rosDocs.php>
- <https://twiki.cern.ch/twiki/bin/view/Atlas/ReadoutMain>
- <https://twiki.cern.ch/twiki/bin/view/Atlas/ReadOutDocumentation>

Activities

- [C1: Commissioning week 1](#)
 - [Setup](#)
- [C2: Commissioning week 2](#)