



NTU - Athens

SDC - Scalable Detector Control George Konstantinos Iakovidis Karakostas

7th RD51 Collaboration Meeting - WG5 - Electronics

What About SDC ?

- SDC is replacing the existing readout electronics control done until now through USB interfaces.
- Get rid of USB restriction which was a bottleneck for ATLAS Micromegas installation.
- Developed within Qt and C++ frameworks
- Same functionalities
- Cross platform application (Mac OS X, SLC5 & Ubuntu already fully tested, Windows ?)
- Easily scaled up for new chips and large Applications

Communication

- Ethernet communication green light for real installations
- Based on UDP Packets
- Existing way of Error handling Very Important
- Based on Request Reply format
- Recipe Files for different configurations New (create, correction, full initialisation, load configuration)
- Port association to Peripheral gives large flexibility on design

Preview vI.4

- Divided in a way of constructing packets.
- APV, PLL, ADC support until now.
- Recipe files can easily constructed.
- Flexible
- Read / Write Commands
- Reset Commands implemented for warm initialisation and reboot of the FEC itself.
- Reply form for Error handling
- Online help Integrated

00	Mai	nWindow	
FEC PROPERTIES Address 10.0.0.2 Connect Disconnect Select Peripheral APV Hybrid APV Application APV Application ADC Card PLL	Confi Select Mode PLL Master APV Slave APV Both APVs	guration Select Channel(s) Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 5 Channel 7 Channel 8 Select All	Help NTUA v1.4 Select Command Type Write Pairs Write Burst Read Pairs Read Burst Reset
Configuration Files Load Send All X Resets Warm Init Force Reboot	Acquisition On Off	Trigger Internal External Rese	RequestID Send
Reply Port 6007			

Peripheral Configuration

000

000

- Option to send all or some of them
- Apply -> Send
- Default Values •
- Load / Save configuration file
- Easily expandable as separate widgets •

	APV Application Registers P	ort 6039	
	APV Registers		
	ΘΟΟ		
	APV Port 6263		00100 🗹
	APV Registers		
0 0			40000 🗹
ADC Port	6519	lelp	128 🗹
ADC Registers (hev)		128 🗹
900		4	200 🗹
PLL Port 626	53	N	10101 🗹
PLL Registers (hex)			4000 🗹
CSR1 FINEDELAY	01 10 🗹	N N	
TRG DELAY	03 00 🗹	1 1	
		X	0 🗹
Save To File	Set Default Close Apply		84952 🗹
Load From File		pply	
			Apply
		11 <u>. 11</u>	
	Save To File Sat Default	losa Annh	
	Save to File Set Delaute (C	Apply	
	Load From File		1

Status and Plans

- Version **I.4.** Ready and Stable
- Implemented Log files on Request
- Broadcast mode
- IP Range Initialisation
- Implement forthcoming chips eg BNL chip
- Error handling mechanism improvement
- Redesign layout for large application dynamically expandable

More info: https://twiki.cern.ch/twiki/bin/view/AtlasPublic/SDC