

JRA 1 Status

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Brainstorming, 3/4 Nov. @ DESY

- 15 people present, 3 via VRVS
 - Coarse outline of the project
 - First WBS
 - Initiated a DAQ workshop @ CERN 14/15 Dec.
- Results were documented
- ... waiting for a WEBSITE!



Brainstorming Results

- Telescope layout and configuration:
 - A transverse size of ca 2 cm will be provided at least in one direction. The second direction can be smaller.
 - The longitudinal layout will be configurable and should provide at least two configurations: a very compact one (ca. 20cm) and a two-arm one with space for a larger DUT in the middle. The mounting will be such that at least one plane can be brought very close to the DUT in the compact configuration
 - Precision positioning for a pixel DUT will be built
- Telescope chip
 - A CMOS Maps will be used for the telescope.
 - The telescope chip will have a discriminator and ADC on board
 - Frame R/O time will be of the order of 1 ms
- Cooling
 - The temperature of the DUT must be able to be kept constant. What temperatures are needed is still open
- DAQ
 - Telescope and DUT DAQ will be kept separate. The interface is via trigger, busy and event number.
 - The telescope F/E will do digitization and sparsification for the demonstrator.
 - R/O should be over a standard interface such as USB-2
 - Martin Pohl will organize a DAQ WS for the interested parties to hammer out the details early December
- Demonstrator
 - The demonstrator should be a fully usable system
 - It will use the MIMO* 3 chip with the MIMOSA 5 as a fall back solution
- Organizational
 - Regular video/teleconference meetings are foreseen on a monthly basis. Next one at the beginning of December following the planned DAQ WS,
 - Task leaders still need to be nominated.



Organizational Progress

- JRA1 Tasks and leaders:

- Magnet → NN
- Telescope Sensors → Wojciech Dulinski (Strasbourg)
- Telescope Integration → Ingrid Gregor (DESY)
- DAQ → Daniel Haas (Genève)
- Validation → David Cussans (Bristol)

- Next Dates:

- Meeting: 3 February (1 week before EUDET Kickoff)
- MAPS Tutorial: 14 – 17 March, Strasbourg
- Review 1: 4 April, CERN
- Review 2: January 2007
- Review 3: July 2007



DAQ Workshop 14/15 Dec.

- 1st version of WBS for Demonstrator:
 - **Milestones:**
 - 1 Design, April 1, 2006:
 - 2 Construction, January 2007
 - 3 Delivery, July 2007
 - **Deliverables 1:**
 - **Strasbourg:**
 - Existing raw data (noise, source, telescope)
 - MIMOSTAR-2 x 3
 - USB Board w/o D/R (1 + 1 later)
 - User training: March 13 - 17 (date to be reiterated)
 - **Geneva:**
 - Design of data & program structure
 - algorithms
 - interprocess communication
 - TLU design
 - **Milano:**
 - Board schematic
 - FPGA LVDS design
 - Interface definition
 - **Bonn/Mannheim:**
 - DAQ Code, "Physicist Documentation"
 - **Deliverables 2:**
 - **Strasbourg:**
 - Delivery of ≥ 2 MIMOSTAR-3M, thinned to 120 microns, Integrated on front-end, fully alive
 - Spare USB board (D/R not mandatory)
 - **Milano:**
 - EURDB prototype board functional (D/R not mandatory)
 - mother + daughter for MIMOSTAR-2
 - **Geneva:**
 - Close to full DAQ for demonstrator
 - TLU
 - **Bonn/Mannheim**
 - Dataproducer and monitoring for DUT



Demonstrator Functionality

- What is special about the EUDET telescope?
 - High precision in a multiple scattering dominated beam (Thin 2d devices)
 - Capable of high rate (\sim kHz)
 - Simple to use general purpose facility
- Demonstrator

Important: Keep it Simple



What should Demonstrator demonstrate?

- Show the principle:
 - Sensors
 - Demonstrate the precision
 - Compromise on size and DAQ integration
 - Mechanics/Integration
 - Demonstrate overall setup/flexibility
 - Could be one out of two arms
 - DAQ
 - Fully functional
 - Compromise on the rate
 - DUT
 - Should be fully functional for Pixel devices
 - Compromise for other users (TPC)



Open Questions

- What do the other groups in EUDET expect of us?
- What do we expect from other groups?
 - NA2:
 - WEB support
 - Analysis/Simulation support



WEB Support for JRAs

- Agenda System
 - Which one (old CDS or new CERN system?)
 - New CERN system is quite cumbersome...
 - Where (hosted @ DESY or at CERN?)
- Document repository (for non meeting stuff)
- Reasonable authentication system
 - Protected content
 - Authenticated users should be able to upload
- Need these things *SOON*

Important: Keep it Simple



Simulation and Analysis Support

- Framework for simulation of test beams and prototypes
 - Extrapolate from Calice augmented by some beam delivery simulation
 - Questions:
 - Beam backgrounds
 - Beam Quality
 - Precision
 - Instrumentation
- Data repository:
 - Formats... is LCIO applicable?
 - Catalogues... database?

