



AGH UNIVERSITY OF SCIENCE
AND TECHNOLOGY

Report from the Hardware Working Group

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Outline

- Introduction (objectives and areas of interests)
- Summary of meetings held (topics, numbers, etc...)
- Conclusions, questions, proposals...



Introduction

Main Objectives (do we agree ?)

- The Main Hardware Goal is to build a prototype of Compact Multilayer FCAL Detector
 - With the success of AIDA-2020, for the next 4 year, this objective has quite precise definition in the AIDA-2020 proposal
- Proceeding with various R&Ds on sensors, ASICs, mechanics, alignment, DAQ, back-end electronics, ...
- Test-beam preparation and data analyses

Introduction

Fields of interest

- Main Detector Components
 - Sensors
 - BeamCal (GaAs, Diamond, Silicon, ...)
 - LumiCal (Silicon, Sapphire, ...)
 - ASICs
 - BeamCal
 - LumiCal
 - Back-end Readout Electronics (FPGA based)
 - DAQ
 - Mechanics
 - Alignment
- Testbeams
 - Preparation
 - Data analyses
- Other ... ?



Introduction

Expressed interest by groups

- PUC (Angel); ASICs for BeamCal; ~1 FTE
- SLAC (Bruce); Sensors, radiation damage; ~1 FTE
- ISS (Titi); Testbeams&Analyses, Sensors; ~1 FTE
- CERN (Konrad); Mechanical structure; ~1 FTE
- IFJPAN (Leszek); LumiCal sensors, Laser alignment; ~2 FTE
- JINR (Georgy); Tungsten, BeamCal sensors; ~2 FTE
- TelAviv (Itamar); LumiCal sensors, Testbeam&Analyses, DAQ; ~2 FTE
- DESY (Wolfgang); BemCal sensors, Testbeam&Analyses, conn., ~2 FTE
- AGH-UST (Marek); ASICs for LumiCal, testbeam&analyses, ~3 FTE

Summary of meetings held

General info

Topics and presentations:

- Test-beam analyses (present priority!)
 - TelAviv 2 talks (Itamar, Sasha, Yan, Many), AGH-UST 1 talk (Jakub), ISS 1 talk (Veta)
- Regular subject (summarizing works done on certain activity)
 - BeamCal ASIC (Angel-PUC), LumiCal ASIC (Marek-AGH-UST), LumiCal sensors (Szymek-IFJPAN), BeamCal sensors (Sergej-DESY), Mechanics (Konrad-CERN), LumiCal alignment (Leszek-IFJPAN)
- Short updates
 - TelAviv (Itamar, Many, Sasha, Yan) 3 talks – R&D on sensor board and readout, DESY (Lucia) 1 talk on L* for BeamCal

Nr of meetings: 7

Nr of presentations: TelAviv - 5, AGH-UST - 3, IFJPAN – 2, DESY – 2, CERN – 1, ISS - 1, PUC - 1

Summary of meetings held

Ongoing hardware activities

Extracted “hot” topics from various talks:

- Test-beam analyses: not many “nice pictures” with “final” results yet, but steady progress is seen...(TelAviv, AGH-UST, ISS)
- R&D on sensor board and readout at TelAviv (CERN cooperation ?)
various prototypes in progress
- R&D on sapphire sensors at DESY – where we are ?
- Design of new readout ASICs at AGH-UST – multichannel ADC in TSMC 130 nm submitted
- Did I forget something ?

- There are various other activities within FCAL, which were either not shown or have presently “lower momentum”

Conclusions, questions, proposals, ...

- Are the meetings useful ? (lets discuss...)
 - At least regarding progress in “hot” topics
 - Are they efficient ? (in sense of organization, topic selection, frequency, timing)
 - What can be improved ?
- Some groups/people are less active (or present)
 - Is it because of not well defined tasks ? Or lack of money for FCAL works ?, Or lack of human resources ? Or other reasons (like meetings are too frequent) ?
- Any other aspect, proposal, related to the meetings which should be discussed ?

Lets discuss...