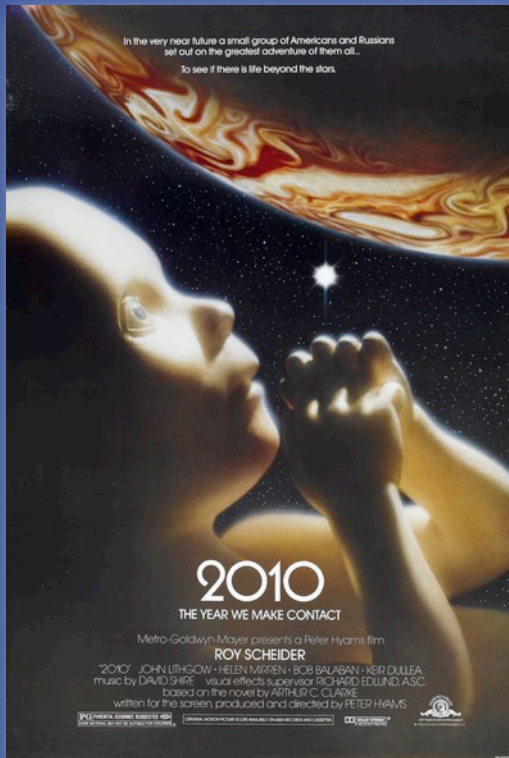




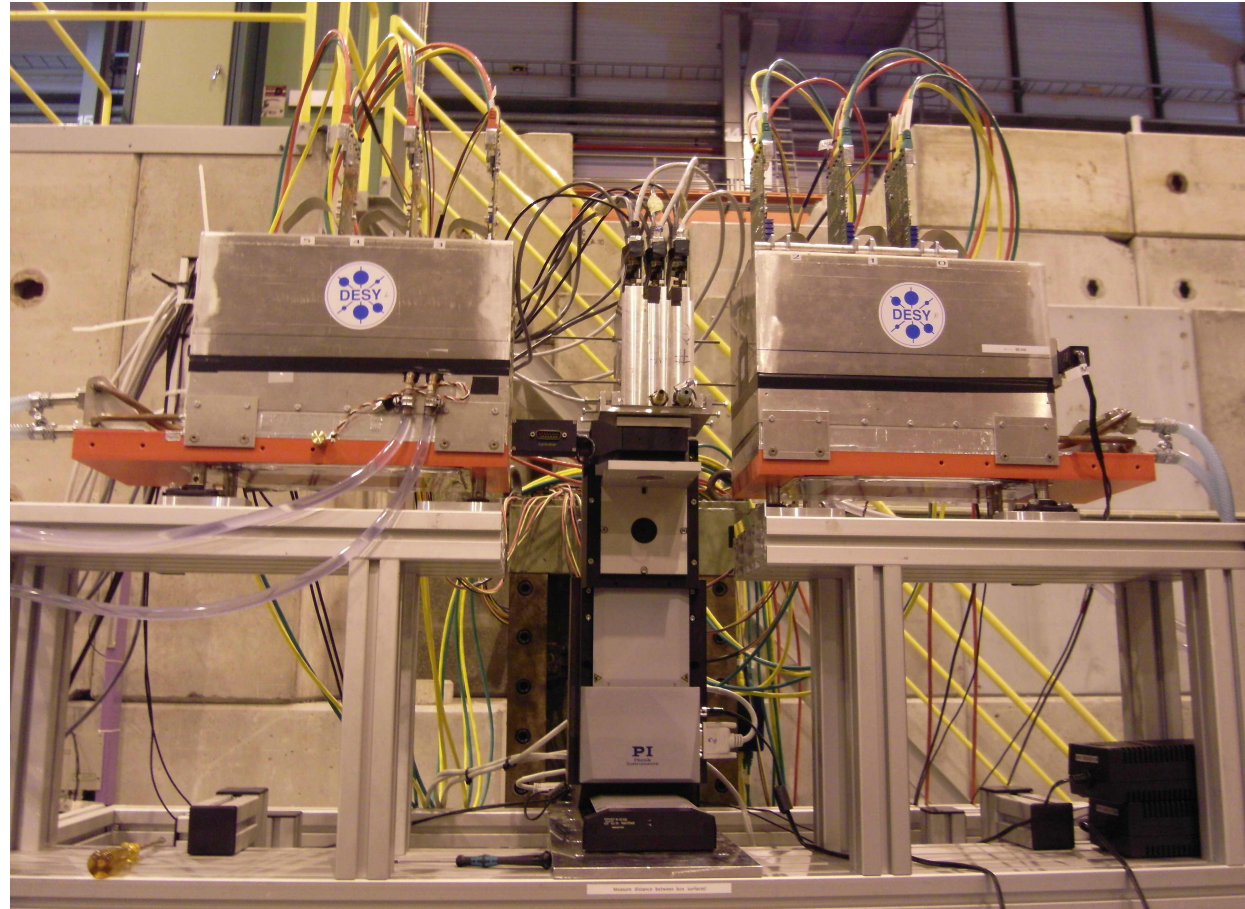
# THE TELESCOPE IN 2010 - AND BEYOND

Ingrid-Maria Gregor, DESY



EUDET Annual Meeting 2009  
19 - 21 October 2009  
Geneva University and CERN

# STATUS JRA 1 TELESCOPE



# USERS SUPPORT

Experiment	Area	Date	GRID	events
EUDET	DESY	December 2008	243	2050566
TAKI	DESY	May 2009	124	350000
EUDET	CERN	June 2009	384	3405307
AtlasLucid	CERN	July 2009	222	200000
AtlasTRT	CERN	July 2009	143	2059613
EUDET Mimosa26	CERN	August 2009	17	1336135
DEPFET	CERN	August 2009	121	2167097
FORTIS	CERN	August 2009	319	192638
FORTIS_SILC	CERN	August 2009	765	184448
TAKI	CERN	September 2009	112	250000
EUDET Mimosa26	CERN	September 2009	25	2787097
ATLAS 3D	CERN	September 2009	-	1000000
ATLAS ALFA	CERN	Oktober 2009	-	
ATLAS PPS	CERN	November 2009	-	
ATLAS 3D	CERN	November 2009	-	

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- Impressive number of users and all seem to be more and less happy
- This is not only because hardware is rather reliable, but also the support from setup to the analysing the data ...
- Estimate of person power for pure user support (only 2009)
- No development work for the Mimosa26 implementation included

- Emlyn + Daniel + Toto + Joerg + Marie + Igor + Ingrid = 2FTE
- Can we keep this up for 2010 ?
- DESY: Igor (EU Telescope, ATLAS users), Ingrid, ++ (hopefully)

# FEEDBACK FROM USERS

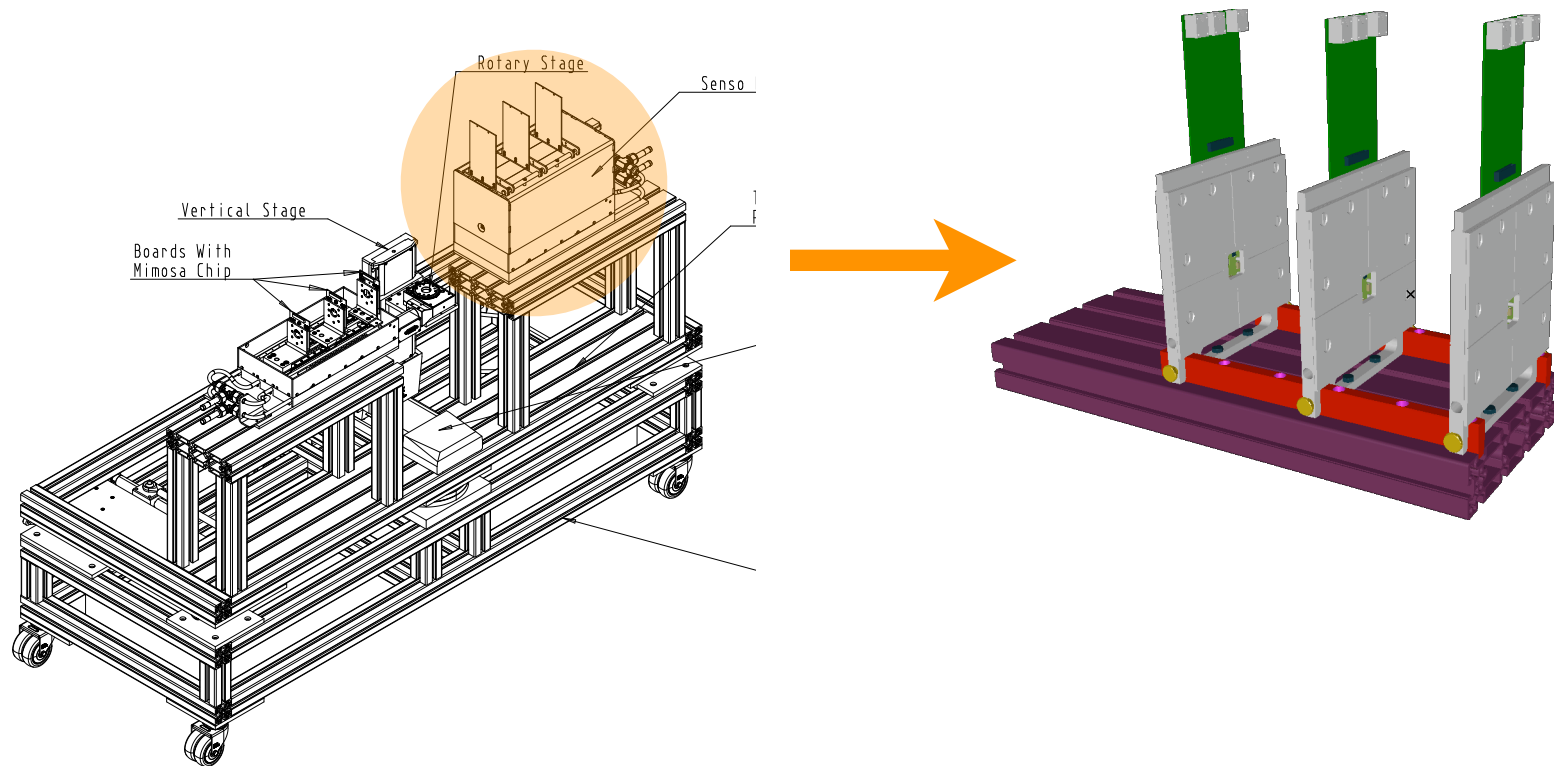
- In general are the users rather happy with the telescope but when asked for possible improvements some ideas come back
- Most of the ideas were discussed by us before
- Some Ideas:
  - larger sensors -> ULTIMATE
  - integrate one faster sensor (e.g. strips) or other hodoscope to allow time stamping of each track
  - more flexibility in TLU (e.g. 40MHz clock, tagging)
  - more PMs for triggering (also into TLU)
  - more sets of sensors, longer telescope to allow more than one set of DUTs
  - readout speed >200Hz (Demonstrator user); 1kHz seems to be ok
- What can we do for 2010?
  - hodoscope?

# COPIES PLANNED

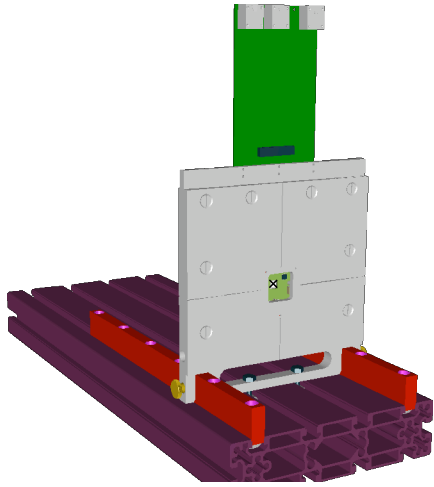
- Will keep Demonstrator alive to have two telescope at the end of EUDET
  - Since September Final Telescope running -> MimoTel will go back to DESY
  - December/January: MimoTel back into Demonstrator at DESY and use “new” mechanics for final telescope
  - EUDRB readout for Demonstrator
  - New read out for Final Telescope (can we have this buy summer 2010?)
- More copies are needed
  - Bonn recently ordered a full copy of telescope for ELSA test beam
  - Strong interest of AIDA ....
- Copies would need to be very sturdy and hardware needs to be exchangeable

# NEW MECHANICS

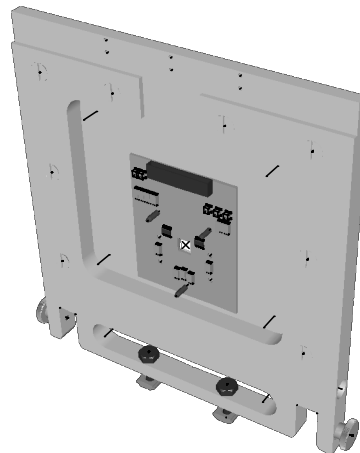
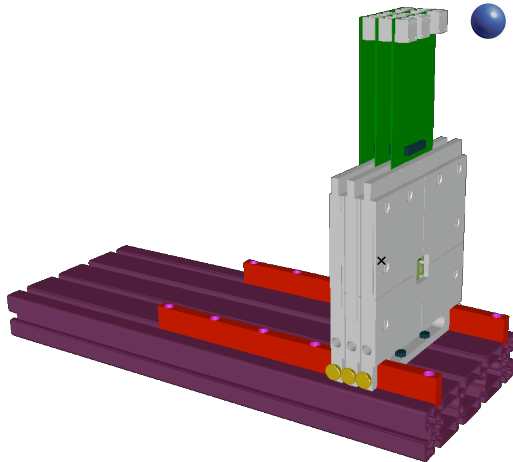
- The two box approach worked quite ok, but has definite disadvantages
  - not easy to replace single sensor (was not yet necessary with Mimosas)
  - no way to measure z-position of reference planes during survey
  - cooling/temperature stability never worked as good as we would have liked
  - too complicated



# DIFFERENT VIEWS



- keep temperature stable -> cooling liquid
- easy connection for coolant
- material: non-magnetic (Aluminium)
- minimum distance between sensors <2 cm (as small as possible), maximum distance 15 cm
- sensor opening 2.5 x 2.5 cm<sup>2</sup> (ready for ULTIMATE chip in 2010)
- better positioning of DUT (indication of centre of active area, laser system)
- mechanics for PMTs also on rail system and a simple frame
- possibility to move planes close to DUT



- Design currently under way
- technicians started on Rose&Krieger support
- end of December/ January