

NP Group	Daresbury Laboratory	Doc No: 186 agata-ph2-meng-min-0004v0.3 Issue: 1 Date: 5th June 2009 Page: 1 of 13
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MINUTES OF MEETING		
Title/Subject: Agata Management Meeting		
Venue:	Room T2 Chadwick Building Liverpool University	Chairman: Paul Nolan
Time/Date:	11:00-17:00 5 th June 2009	Secretary: Mike Cordwell
PARTICIPANTS		ADDITIONAL DISTRIBUTION
Andy Boston Paul Nolan John Simpson John Strachan Zsolt Podolyak Ian Lazarus John Smith Mike Cordwell Pankaj Joshi	University of Liverpool University of Liverpool STFC Daresbury STFC Daresbury University of Surrey STFC Daresbury University of WoS STFC Daresbury University of York	
		APOLOGIES Dave Cullen Bob Wadsworth
AGENDA REF:		
ATTACHMENTS:		

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1. Minutes of previous meeting

Agreed without changes.

2. Actions from previous meetings

1.4 Andy Boston to speak to John Cresswell about a UK strategy for data storage.

On-going

2.6 Paul Nolan to find how to get access to the letters of intent for the physics proposals for agata at Legnaro. **Complete**

The meeting has happened and there was a widely circulated e-mail.

3. Actions from this meeting

List of references to be published, to be kept by the project manager. Keep the DOI reference of the papers.

Action 2.1 Mike Cordwell

PSA Development : Andy Boston leads this area internationally. (John Simpson wants a photo of the Liverpool scanning system.)

Action 2.2 Andrew Boston

Paul Nolan to contact Legnaro about extending the length of the Physics campaign into 2011

Action 4.1 Paul Nolan

The current MoU and the EURONS JRA need a Technical design report by the end of the year. John Simpson will distribute the final version.

Action 4.2 John Simpson

How much of the work that we are doing on the MGS is used in Legnaro?

Answer: Liverpool got the original pulse shape experimentally from the symmetric detectors.

They used the results to improve the MGS simulations, and then used these simulations to predict the asymmetric performance. Liverpool are still waiting on experimental data to check the asymmetric simulations. The whole collaboration currently relies on this database.

The pulse shape databases generated in the UK are the ones used at Legnaro.

The Pulse shapes from the experiments with asymmetric detectors will be recorded for 6-9 months then only positions will be recorded.

Andy to create a flow chart of these actions and then colour in the bits the UK does with respect to other countries.

Action 4.3 Andrew Boston

Find out more about the Potassium peaks, are they the expected width?

What is the spectrum of? Single segment, or complete triple?

Has it been corrected for Doppler effect etc?

Action 4.4 John Smith

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4. Report on current situation in the International AGATA project

Paul is now the chair of the Agata Steering committee.

The main question is where the next campaign will be.

Agata require 12 weeks of beamtime for fastbeam aspects of PreSpec, we should have found out in mid-May if this is acceptable. The director of GSI said that it was up to the ASC and PreSpec to get the agreement of the community. PreSpec's plans have been laid out to the director and it is now up to NuStar to agree.

Silva Lenzi has approached AGATA as chair of GAMMAPOOL to arrange a meeting between GSI/GANIL/LEGNARO and AGATA to get a plan for the next 5 years

Suggested meeting date is 1st July.

At this stage it is genuinely not known where Agata will be hosted next.

LEGNARO is not clear if AGATA should stay longer. New Director will be in place.

Paul Nolan to contact Legnaro about extending the length of the Physics campaign into 2011

Action 4.1 Paul Nolan

France: - Currently negotiating for funds

End of June presentation to INP23 (hopefully positive)

Labs in France: - Strasbourg - not participating in digitiser development

Orsay - unclear

Germany: - Have zero for capital funds

Have running costs and support for AGATA

No FAIR funding from BMBF

Sweden: - Unclear

Italy: - Ongoing, continue to fund AGATA. Will order 4 detectors and will fund 2 digitisers.

Turkey: - unlikely to bid for more funding.

Should have 28 detectors by end of 2010

10-12 triple cryostats by 2011

Electronics & Data Acquisition:- Decision to be taken on what electronics will be. Ian Lazarus needs two years to re-design.

Agata week. Proposed for GSI in January 2010.

Physics DAQ meeting 2nd April 2009

Paper on running costs has been submitted to the AGATA steering committee.

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Political AGATA

The current management board are employed to manage the demonstrator not the next phase.
Discussion is required in June to sort out the new management board.
There is currently no specification for the next phase of Agata development.
No clear view on what the next phase electronics will be.
Internationally the project needs putting back on track.

5. Position concerning filling new positions and Grant Start Dates

Manchester PDRA - Person started 1st May
Liverpool PDRA - Person started 6th April
Technical person - Position to be filled September this year.
WoS PDRA - Candidate short listed due to start telephone interviews next week.

Liverpool Student - Student started Jan 09
Surrey Student - Student started Sept 08
York Student - Student started Sept 08

Project Manager - Mike Cordwell will replace John Strachan after the OC meeting.

The current MoU and the EURONS JRA need a Technical design report by the end of the year.
John Simpson will distribute the final version.

Action 4.2 John Simpson

Grant Start dates:

Liverpool started on 1st September 2008
Surrey and York started on 1st October 2008
Manchester started on 1st November 2008
University of the West of Scotland started on 1st Jan 2009

Personnel changes:

Paul Nolan is the new chair of the ASC from 1st April 2009

Mike Cordwell will take over from John Strachan as the Project Manager after the Oversight committee

The York student has left and will be replaced by another student on a 3 year deal.

Student Activity

Surrey – Provided support for the source test and first in-beam test. Has the MGS code running and is waiting for data to test.

York – The student has left but was doing simulations, Pankaj and Marc have picked up his tasks. They have installed various simulation codes, performed some testing and arranged meetings with people to understand the codes.

Liverpool – Has been working on the in-beam data to try and understand it.

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6. Discussion on Workpackages

Firstly some questions relating to WP2, 3 and 4 were placed to Andy Boston:
How much of the work that we are doing on the MGS is used in Legnaro?

Answer: Liverpool got the original pulse shapes experimentally from the symmetric detectors. They used the results to improve the MGS simulations, and then used the simulation code to predict the asymmetric performance. Liverpool are still waiting on experimental data to check the asymmetric simulations. The whole collaboration currently relies on this database. The pulse shape databases generated in the UK are the ones used at Legnaro. The Pulse shapes from the asymmetric experiments will be recorded for 6-9 months then if all is understood only positions will be recorded. Andy to create a flow chart of these actions and then colour in the bits the UK does with respect to other countries.

Action 4.3 Andrew Boston

After this each workpackage was discussed individually.

Workpackage 1

The Liverpool technician will undertake the assembly and testing of the triple cluster (in future).

The Liverpool student is working on the characterisation and validation.

The Manchester post doc is taking the Liverpool output.

Workpackage 2

Regarding Milestone 2.4 Pulse Shape Analysis

Detector Characterisation

Adaptive grid search (UK/Legnaro) used to investigate multiple interactions in a single segment (Manchester/Surrey/Legnaro). Dave Radford in the USA has already done this.

Orientation of axis is not in the acceptance tests as it can only be determined following a scan.

List of references to be published, to be kept by the project manager. Keep the DOI reference of the papers.

Action 2.1 Mike Cordwell

Detector Characterisation : Pulse shape comparison scan method

Scan C001 delay due to cooling problems. Required FET replacements.
Detector almost ready for the scan.

The result will be a delay in the milestone to deliver basis data set

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Legnaro have dropped the voltage to 4000 volts, because it is stable. It should run at 5000 volts, what implications at running at 4000 volts? Liverpool will investigate.

Difference between MGS and actual measurements – differential crosstalk. Liverpool have spoken to Dave Radford about this.

PSA Development : Andy Boston leads this area internationally. (John Simpson wants a photo of the Liverpool scanning system.) **Action 2.2 Andrew Boston**

Workpackage 3 Simulations and implementation of algorithms

GEANT code successfully installed with existing experimental facilities. More implemented during the commissioning.

WP 3 was set up for the UK BENEFIT.

Workpackage 4 Support for commissioning phase at Legnaro

Workpackage 5 Electronics and software

Work on Demonstrators

Firmware upgrade done.

18 digitisers made

18 functional tests done (UK)

7 performance tests of digitisers (France)

Workpackage 6 Mechanics

Not started until we know where AGATA will go after Legnaro. ASC to make decision in June.

Workpackage 7

Management

Workpackage 8

Germanium ordered. First delivery 17 months, then at 2 month intervals.

7. Membership of AGATA committees

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How to operate and manage AGATA in the future, which laboratories are involved and organisational structure of the project. John Simpson, Paul Nolan and Wolfram Korten have been asked by the AGATA ASC to write document summarising these issues.

The next AGATA week is liable to be in GSI.
Dates in January 2010 are currently proposed.

UK has 8 institutions.

We have been asked by the ASC to ask the institutions who they want to nominate on to the Co-ordination Council.

All UK institutions need to nominate someone for the Coordination Council.

The Co-ordination Council will elect a spokesperson for AGATA.

The Co-ordination Council is tasked with organising a physics meeting once a year to highlight the AGATA achievements.

The Coordination Committee will be formerly started at a Physics workshop.

The next LNL PAC for AGATA proposals will be held in June-July 2009.

Next meeting:

Wednesday 30th September 2009 at UWS

Wednesday 6th January 2010 at Manchester

WP1 Slides

WP1: Detector Assembly Liverpool

- Tasks:
 - Detector specification measurement
 - Assembly of components in progress
 - Detector assembly for scanning
 - Work in progress
 - Triple-cryostat assembly
 - Preparation in progress

Detector specification measurement

- Dedicated testing system
 - Canberra equipment delivered
- New single test cryostat
 - Delivery time 12 months
 - Cost too high
 - Do require component parts
- Updated firmware for 40 Gretina digitiser channels.

Detector assembly for scanning

- The AGATA asymmetric detector C001 has been re-assembled and tested, prior to scanning (WP2) in the laboratory.



Detector assembly for scanning

- H. Boston, C. Unsworth trained in Cologne
- Subsequently trained M. Norman and S. Moon
- Preamplifier test box shipped to Liverpool
- Delays in reassembly due to internal wiring troubleshooting and slow pumping system
- Flaky internal wiring – possible Kapton cabling
- Cross talk data collected and analysed with Gretina cards
- Energy resolution verified with analogue electronics

Triple-cryostat assembly

- New pumping system due for delivery
- System will be commissioned
- New triple cryostat order – in progress

Milestones

Table 1: Milestones achieved in the last six months

Milestone No.	Work Package	Milestone	Target Date	Status
M1.1	WP1	Train Staff in Cologne	02 Apr 09	Complete

Table 2: Milestones due in the next six months

Milestone no.	Work Package	Milestone	Target Date
M1.2	WP1	Successful set of measurements on a detector module	05 Oct 09

WP2 Slides

WP2: Interaction position determination using pulse shape analysis Manchester, Liverpool, Surrey

- Tasks:
 - Detector Characterisation
 - C001 detector scan
 - MGS 3D Simulation code comparison with expt.
 - Work in progress
 - PSA development
 - Work has started

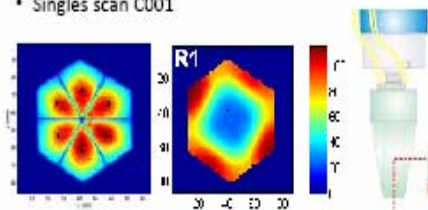
WP 2 report

General Comments:

- S. Moon and A. Robinson started as PDRAs
- PSA team meetings
 - AGATA week in Cologne (30 March)
 - Legnaro (21-22 May 09)
 - Bi-weekly telephone meetings

Task 1: Detector Characterisation

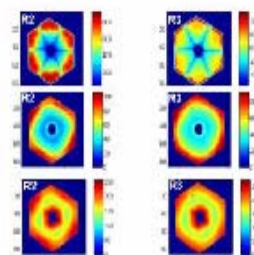
- Singles scan C001



- Output: 2 IEEE TNS papers, 1 NIM paper, 2 APS conference proceedings.

Task 1: Detector Characterisation

- Offset of the horizontal segmentation line in rings 2 and 3, due to the electron and hole drift profile being influenced by the fast/slow axis orientations.
- The scan of detector C001 revealed a 12° offset toward segment B from that specified by the AGATA collaboration.
- Implication need to characterise to determine true axis orientation



Task 1: Detector Characterisation

- Development of improved performance scanning methodology.
- Full scan presently 2 months
- The Pulse Shape Comparison (PSC) Scan method [F.C.L. Crespi, NIM A, April 08]
- Chi-squared minimisation of pulses shapes recorded from two collimated beams injected at 90 degrees to each other in sequential measurements.
- This process requires only a singles scan and therefore would in principle allow a detector to be characterised in a fraction of the time.



Task 1: Detector Characterisation

- Coincidence scan C001 delayed due to cooling problem requiring FET replacements.
- Detector almost ready to go (WP1)
- Impact: delay in milestone to deliver basis data set and knock on. Assume 24 June available.

- Change:

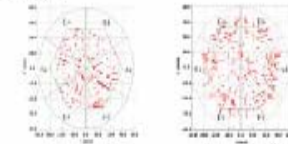
Work Package	Milestone	Target Date
WP2	Detector 1: Basis data set available	22 September 09 (26 June)
WP2	Comparison of MGS electric field simulations with experimental pulse shapes complete and first interaction position algorithm ready	23 Dec 09 (26 September)

Task 1: Detailed future plans

- Completion of coincidence scan
- ^{137}Cs singles scan from side
- ^{241}Am surface scan
- Collaboration with Fabio Crespi (Milan) to produce single site interaction pulses from front and side singles scans using χ^2 minimisation
- Singles scan with varying bias to study depletion behaviour.

Task 2: MGS 3D Simulation code comparison

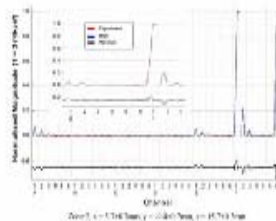
- Basis data set optimised for symmetric detectors.



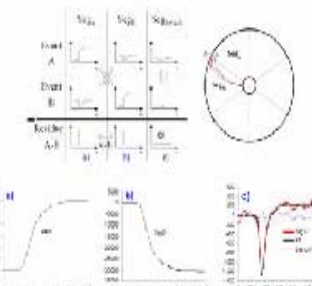
Configuration	Min. Impedance (ohm)	Max. Impedance (ohm)	Impedance (ohm)
1.2A/0.1	1.2A/0.1	1.2A/0.1	1.2A/0.1
1.2A/0.2	1.2A/0.2	1.2A/0.2	1.2A/0.2
1.2A/0.3	1.2A/0.3	1.2A/0.3	1.2A/0.3

Task 2: MGS 3D Simulation code comparison

- Majority of difference can be accounted for by differential cross-talk correction.

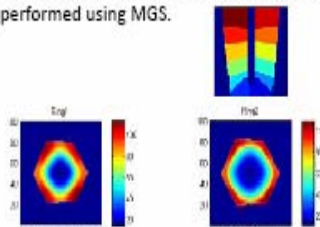


Task 2: MGS 3D Simulation code comparison



Task 2: MGS 3D Simulation code comparison

- Theoretical E-field calculations for three asymmetric AGATA detector shapes have been performed using MGS.

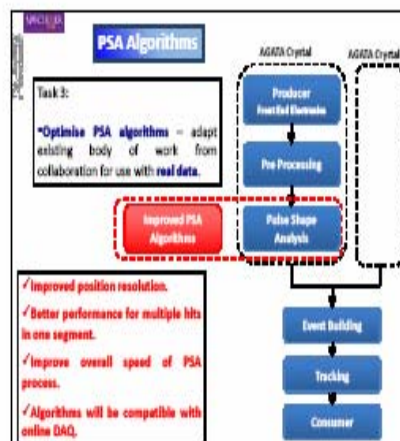
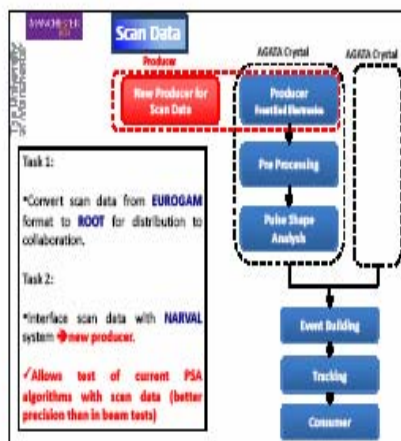
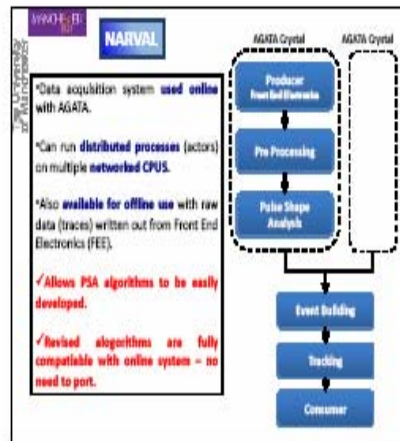


Task 2: MGS 3D Simulation code comparison

- Reasonable good agreement
- Axis orientation issue
- MGS grid issue (missing points)
- First triple basis delivered to LNL for in beam
- Performance is promising

Task 3: PSA development

- Storage devices purchased for basis data sets.
- Relevant meetings attended
- Personnel up to speed
- Infrastructure for algorithm optimisation
- Basis data set distribution




WP2 : Next 6 months

- Detector Characterisation
 - Complete COOL detector scan
 - Validate PSC method
 - Root conversion program
 - Compton reconstruction
 - Mount next detector
- MGS 3D Simulation code comparison with expt.
 - Implement differential cross talk correction
 - Compare MGS/JASS performance
- PSA development
 - Complete analysis platform commissioning
 - Optimise PSA codes

WP2: Milestones

Milestone ID	Task	Milestone	Due Date (EST)	Target Status	Actual Status	Comments
M1.1	WP2	Theoretical Aspects of Triple Cluster Scan and MGS (delivered to Lappas and used)	10 April 09			
M1.2	WP2	PSA commissioning test in Manchester (ongoing)	10 May 09			
M1.3	WP2	Detector 1: Status data not available	10 June 09	Y	Y	
M1.4	WP2	Detector 1: Status data not available	10 June 09	Y	Y	
M1.5	WP2	Comparison of MGS results with experimental data (Agata complete and first interaction position AgataData ready)	10 June 09	Y	Y	
M1.6	WP2	Detector 1: PSA development test of full-scale 3D reconstruction and final commissioning complete	10 June 09			

WP5 Slides

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WP 5 Report 2

April- June 2009

Summary

- Work on demonstrator (digitiser, pre-processing and control software)
- Preparation for work in the phase after the demonstrator
- Tasks for next 6 months
- Timescales
- Risks
- Issues

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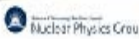


Digitiser work for demonstrator

- Firmware upgrade done to shut down automatically if temperature reaches 40C (previously relied on software)
- Delivery status:

Task	Done	Shipped	To do
Assemble Digitisers (UK)	25	0	0
Functional Test of digitisers (UK)	28	13	0
Performance test of digitisers (France)	7	7	12*
Delivery to AGATA (from France)	7	7	11

* Out of these 12 digitisers, 3 are in Italy, 3 are in France, 1 in UK

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Pre-processing work for demonstrator


- Management of team only; no hardware or firmware work except advice/consultancy as required.
- Video conference every 2 weeks - AGATA week team meeting face to face.
- Status:
 - Carrier cards- 25 delivered (8 mid-June), 9 commissioned and working
 - Segment manufacturers- 50 delivered (60 mid-June) 33 working
 - OTS- 20 due end of June (4 prototypes in use)
 - LedsO- 10 due end of June (5 in use)
 - LedsO dual end- prototype manufacture now, production estimated Aug-Sep 2009



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Slow control and GUI work for demonstrator

- Recent decision by the team to adopt Vic's software philosophy for Digitiser control as the standard for all AGATA front end electronics control.
- Commands sent to hardware known as "Vic Orders"
- Vic has written example code against which to test application code written by others.
- Schedule (from Eric Legay)
 - Until end of September 2009 : Analysis, setting priority, Analysis, setting priority, and specification
 - First quarter of 2010 : Delivery of highest priority items Delivery of highest priority items
 - Later : Other items

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Digitiser work for next phase

- Strasbourg no longer involved (Duchene, 2nd April meeting). This reduces the amount of digitiser redesign work that can be done.
- Rest of collaboration needs to fund 8 of the 12 digitisers needed for end 2010. Funds for only 2 (+4 in UK) available. So only 24 of the 30 expected crystals can be instrumented. 6 missing
- AMB suggests August date for conclusion about next AGATA electronics is optimistic- could be December = 4 month slip in end date to Jan 2013.



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WP6 Slides

WP6: Mechanical Work Package Daresbury, Liverpool

- Tasks:
 - Support for AGATA at Legnaro
 - Installation of detectors



Detector still doesn't come down square in jig, but the situation is much improved



Improved lifting equipment tested



Detectors within specification when installed.
Report to be written



Support jig measured with tracker. Results to be compiled

Table 2: Information for the next 6 months			
Task	Start Date	End Date	Owner
Task 1	2009	2009	2009
Task 2	2009	2009	2009
Task 3	2009	2009	2009

Tasks over next 6 months:
Determine the source of the deflections using FEA.
Modify necessary components.

Decisions:
Awaiting decision on the location of the next host lab.