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AGATA Pre-processing team report

AGATA Week, April 2009

Overview of talk

- The team
- Progress on carrier
- Progress on mezzanines
- Test Status
- Delivery schedule
- Conclusion

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Team meetings

- Regular VC meeting every 2 weeks
- 1 face to face team meeting Nov 2008 in LNL
- Regular visits of CSNSM and IPN engineers to Padua/LNL for code development and testing.
- 1 meeting with slow control group plus informal discussions.

Reminder of team and responsibilities

- IPN Orsay
  - Carrier VHDL design (FPGA2- trigger distribution)
  - Carrier VHDL production code
  - Carrier commissioning (production run of 34 cards)
  - Original carrier design
- INFN Padua
  - Carrier rework (prototype and pre-production)
  - Carrier VHDL (release 0 for initial tests)
  - Carrier VHDL (FPGA 0- data readout)
  - Delivery of 6 tested carriers for Triple Cluster tests
  - GTS Mezzanine
- CSNSM Orsay
  - Segment mezzanine (hardware and VHDL)
  - Core mezzanine (hardware and VHDL)
  - Production run of core and segment mezzanines
- IPHC Strasbourg
  - Supply of MWD code for use in core and segment mezzanines in “black box” format
- STFC RAL and LPC CAEN
  - VHDL code for carrier readout (PCIe and proprietry “FASTER” protocols)
- Team size
  - On average between 10 and 15 people are working on this project at the moment.

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Progress since last AGATA week- Carrier

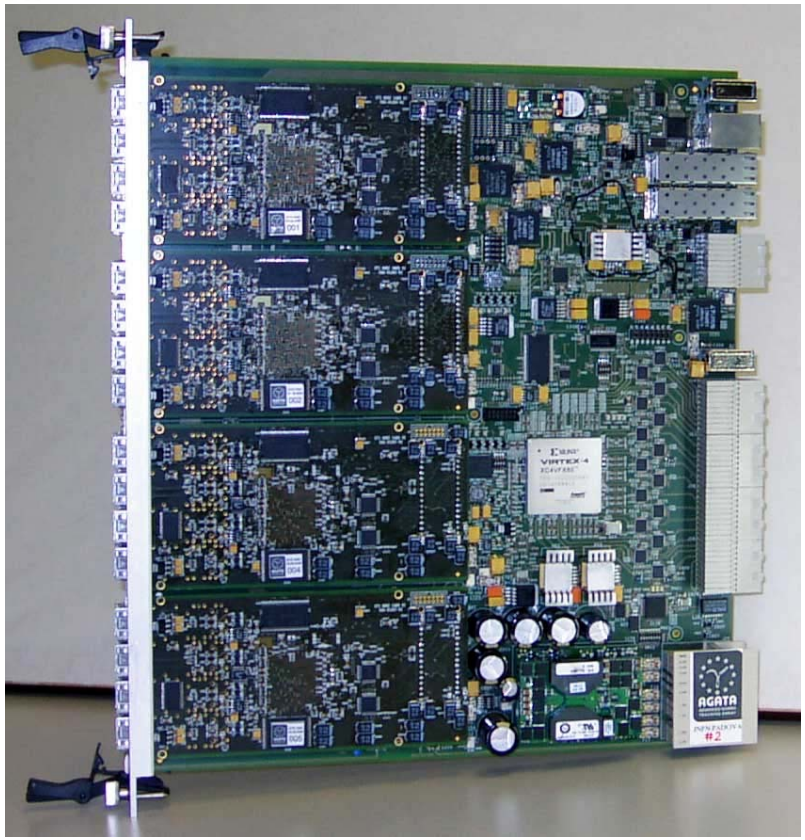

Photo- INFN Padova

- Padua have made 5 production carriers plus 2 pre-production cards which have been used in LNL for triple cluster tests.
  - 5 are fully working
  - 1 is useable at low rates (bad DPRAM)
  - 1 is awaiting repair.
- IPN/Emelec have made 3 more production cards; the full batch will be made in April and tested from April to June. Delivery date- end June 2009.

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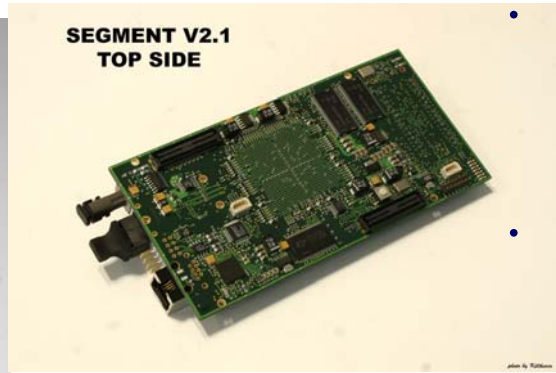
Progress since last AGATA week- Mezzanines



Photos- CSNSM Orsay

- Segment mezzanines have been built and installed for 6 carriers including extra cards for core signals.
- Segment mezzanine production run started- first batch of 20 cards delivered; under test this week before making the remaining 90 cards (20 more later)
- Core mezzanine- limited testing (no problems found but focussing effort on segment)

Status of tests (1)

- As reported elsewhere, week 12 tests ran successfully using:
  - 6 carriers
  - 21 segment mezzanines (3 replacing core mezzanines)
  - 3 GTS in pre-processing (2 others used in GTS system)
  - 2 ATCA crates

Status of tests (2)

- There is still code to be written but clear progress is being made:
  - Run control- big steps forward made already by Damiano Bortolato (talk later)
  - Segment mezzanine code- slow control via Ethernet and other upgrades/bug fixes (Xavier Lafay, talk by Nabil Karkour- slow control)
  - “Shopping list” of priorities for code development will be reviewed in team meeting this afternoon.

Delivery schedule

- Manufacturing (in addition to 1st 3 crystals already instrumented)
  - Carriers: 1st production cards tested; full production starts early April, ends mid-April. Commissioning due to be complete end of June
  - Segment mezzanines: 20 cards delivered now for test before launching full production of 90 cards by end April. 110 commissioned cards delivered by end of June.
  - GTS mezzanines: Production launch May; commissioned cards delivered July. (Also depends on commissioning 3 level hierarchy successfully (same people))

Open Questions

- 1st line support *(technicians should be trained while system commissioning is taking place)*
- 2nd line support *(availability of existing engineers to make new cards or maintain existing ones either because of fixed term contracts or questions over future participation in AGATA)*
- Link to slow control- *meetings and discussions started and now making some progress (late start- busy with tests)*
- Need a full Xilinx PCIe core licence in LNL or Padua for to enable continuous running.
- Priority list of outstanding code development

Conclusions

- Progress is good
- Team still working very hard
- Willingness to travel is a key aspect- thanks to people who have spent many weeks away from home in LNL.
- Hardware delivery due before summer holidays for 6 triple clusters.