Organization of the first year Work
Changes to the GanttChart

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WP1: Prototype Construction & Production Validation
Beneficiary: PRIELE (I)

Objectives
- Construction of AM Board SLP prototypes (Serial Link technology)
- Standalone validation of SLP-2 prototypes
- Standalone validation of FTK production
- Transfer of knowledge to PRIELE for board assembly and validation
- Transfer of knowledge among all research institutions about Associative Memory technology

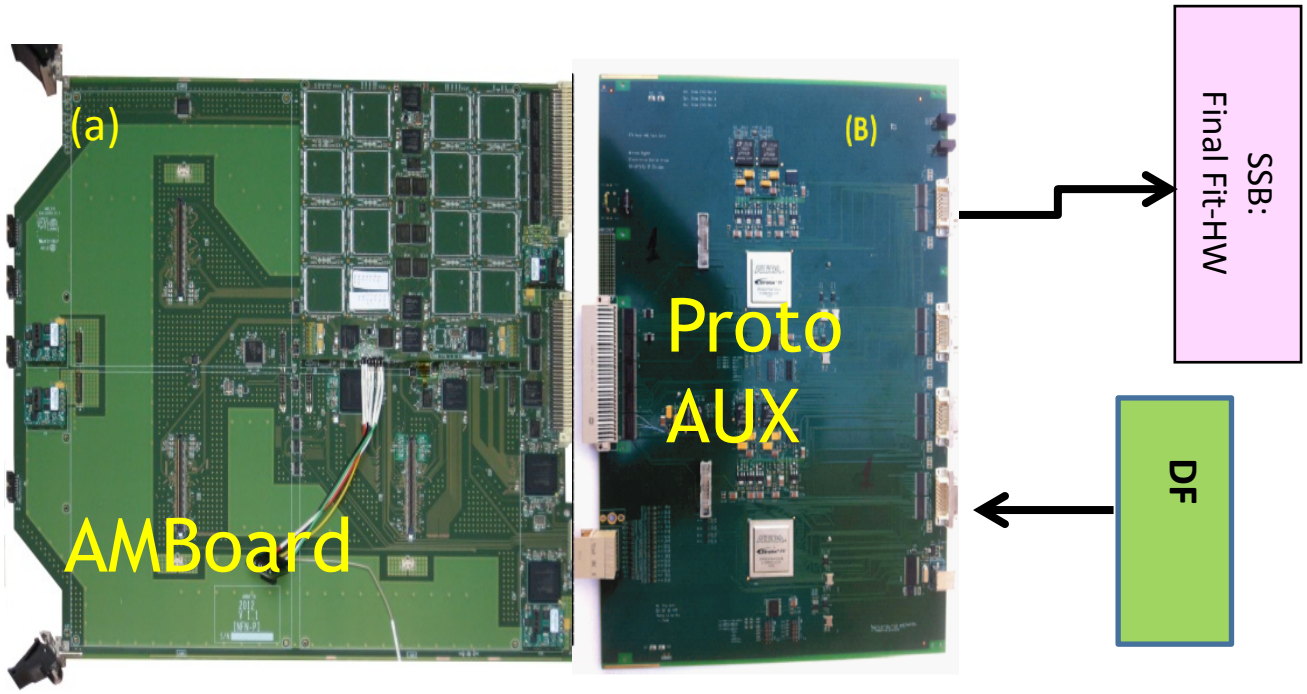
Deliverables/Milestones/Description of work for the first year
- SLP-2 prototype constructed at PRIELE **(M12)**
- SLP-2 prototype validated at PRIELE **(M12)**
  - Installation of an FTK test stand at PRIELE for board validation test
  - Design of SLP-2 PC board (schematic capture/routing with Cadence)
  - Design of SLP-2 firmware (HDLs language and use of Xilinx CAD)

- FTK Technical Design Report: Atlas evaluation of FTK prototypes **(M12)**

WP1: Prototype Construction & Production Validation
Beneficiary: PRIELE Electronics (II)

Secondments

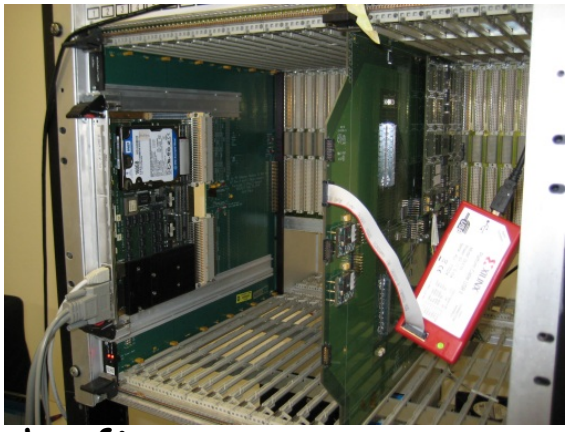
- (ER) From PRIELE to UniPisa (Sakellariou M3-M4/ Dimas M5-M6)
  Expertise: Schematic capturing/Physical layout of multilayer PCB/ Embedded devices and firmware
  Tasks: SLP-2/SLP-1 PCB and firmware design



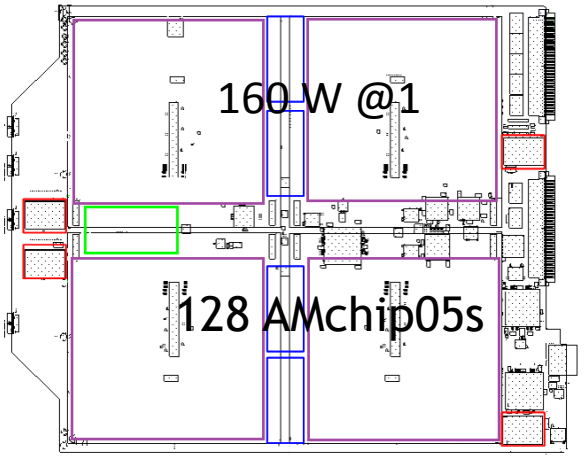
WP1: Prototype Construction & Production Validation
Beneficiary: PRIELE Electronics (II)

Secondments

- (ER) From PRIELE to AUTH (Dimas M8-M9)
  Tasks: SLP-2 firmware for ToK (SLP-1 for muons ?)
- (MER) From UniPisa to PRIELE (Piendibene M7-M8/Donati M8-M9)
  Expertise: AM system/PCB/firmware/quality assurance
  Tasks: SLP2 prototype constructed/validate at PRIELE
- (ER) From AUTH to PRIELE (Gentsos M8-M11/Sotiropoulou M11-M12)
  Expertise: Low power instrumentation systems
  Design of Reconfigurable Processors
  Tasks: SLP-2 constructed/validated at PRIELE
  SLP-2 firmware (SLP-1 for muons ?)



AMBSLP
for AMC05



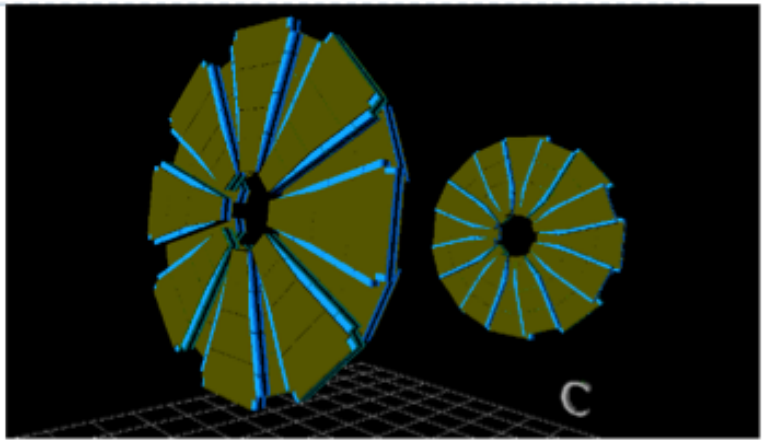
Recruitments

No recruitments in the first year

NSW: New Small Wheel (SLP for Level 1)

Simulation and physics cases

- **Simulation:**
  - A complete ATHENA/Geant NSW exists
  - With not final support structues
  - No detector internal structures yet
  - Need to converge to a layout here too
  - Digitization ongoing
  - Need to start performance studies for TDR (not yet clear how to handle bkg simulation)



- **Physics case studies:**
  - Need to study some physics case for TDR
  - With NSW parametrization compared with present SW: reproduce the result for WH (H→bb) using present H→bb analysis
  - Analyze other decay channels WH (H→ τ τ and H→WW) to produce a trigger table similar to what has been done for H→bb for LOI

	Efficiency (%)	Rate (kHz)
E_t^{μ} > 20 GeV old SW	82	40
E_t^{μ} > 20 GeV NSW	78	15
E_t^{μ} > 40 GeV old SW	50	18

Appendix 1 Gantt chart of recruitments and secondments per researcher

[Hosting institution] [Recruiting institution] [Country] [Comm. sector Y/N]	[Sending institution] [Country] [Comm. sector Y/N]	Active in WP	Type	Total PM	Year 1												Year 2											
					1	2	3	4	5	6	7	8	9	10	11	12	1 13	2 14	3 15	4 16	5 17	6 18	7 19	8 20	9 21	10 22	11 23	12 24
[PRIELE], [Greece], [Y]	[UniPisa], [Italy], [N]	1	MER1	2							1	2																
[CAEN], [Italy], [Y]	[UniPisa], [Italy], [N]	2	MER1	16										3	4	5	6	7	8	9	10	11	12	13				
[PRIELE], [Greece], [Y]	[UniPisa], [Italy], [N]	1	MER2	4								1	2													3	4	
[PRIELE], [Greece], [Y]	[AUTH], [Greece], [N]	1	ER3	6								1	2	3	4									5	6			
[PRIELE], [Greece], [Y]	[AUTH], [Greece], [N]	1	ER1	2											3	4												
[UniPisa], [Italy], [N]	[PRIELE], [Greece],[Y]	1	ER5	2					1	2																		
[AUTH], [Greece], [N]	[PRIELE], [Greece],[Y]	1	ER5	2								3	4															
[UniPisa], [Italy], [N]	[PRIELE], [Greece],[Y]	1	ER6	6			1	2																				
[AUTH], [Greece], [N]	[PRIELE], [Greece],[Y]	1	ER6	2																						3	4	
[UniPisa], [Italy], [N]	[PRIELE], [Greece],[Y]	1	ESR8	2														1	2									
[CERN], [Switzerl.], [N]	[PRIELE], [Greece],[Y]	3	ESR8	2																		3	4					

WP2: Infrastrucure & Integration
Beneficiary: CAEN (I)

Objectives
- Infrastructure construction and validation (racks, crates, power supplies, cooling)
- Validation/integration of prototypes from Europe, Japan and USA
- Software development for system test/control/monitoring
- Transfer of Knowledge among CAEN and research institutions

Deliverables/Milestones/Description of work for the first year
- Vertical slice infrastructure installation at CAEN for FTK demonstrator integration **(M6 - July 2013)**
  Installation of a vertical slice at CAEN for board integration/validation tests

- FTK demonstrator fully integrated with old power supplies and running at CAEN **(M12)**
  Software development for vertical slice test
  Tests and validation of the baseline FTK system for the demonstrator
  Tests and validation of the SLP-2 based system

WP2: Infrastrucure & Integration
Beneficiary: CAEN (II)

Secondments

- (ER) From AUTH to CAEN (Sotiropoulou M4-M5/M3/M6)
  Expertise: Design of reconfigurable processors
  Multiprocessing systems
  Tasks: Installation of Vertical Slice
  Test/Validation of baseline FTK system for demonstrator
- (MER) From AUTH to CAEN (Kostas M4-M5/M3/M6)
  Expertise: Trigger and Data Acquisition
  Tasks: FTK Demo test
  Study of SLP-1 architecture
- (ER) From CNRS to CAEN (Crescioli M7-M8)
  Expertise: AM system/firmware/tests/software/GRID
  Tasks: Test/Validation of baseline FTK system for demonstrator
-(MER) From UniPi to CAEN (Piendibene M10-M20)
  Software development/Validation of baseline FTK
  Validation of SLP-2 based FTK (Integration with USA boards ?)

Recruitments

No recruitments in the first year

Appendix 1 Gantt chart of recruitments and secondments per researcher

[Hosting institution] [Recruiting institution] [Country] [Comm. sector Y/N]	[Sending institution] [Country] [Comm. sector Y/N]	Active in WP	Type	Total PM	Year 1												Year 2											
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[PRIELE], [Greece], [Y]	[UniPisa], [Italy], [N]	1	MER2	4								1	2													3	4
[CAEN], [Italy], [Y]	[UniPisa], [Italy], [N]	2	MER1	16										3	4	5	6	7	8	9	10	11	12	13				
[PRIELE], [Greece], [Y]	[AUTH], [Greece], [N]	1	ER3	6								1	2	3	4									5	6			
[PRIELE], [Greece], [Y]	[AUTH], [Greece], [N]	1	ER13	2											3	4												
[UniPisa], [Italy], [N]	[PRIELE], [Greece],[Y]	1	ER5	2					1	2																		
[AUTH], [Greece], [N]	[PRIELE], [Greece],[Y]	1	ER5	2								3	4															
[UniPisa], [Italy], [N]	[PRIELE], [Greece],[Y]	1	ER6	6			1	2																				
[AUTH], [Greece], [N]	[PRIELE], [Greece],[Y]	1	ER6	2																						3	4	
[AUTH], [Greece], [N]	[PRIELE], [Greece],[Y]	1	ER7	2																								
[UniPisa], [Italy], [N]	[PRIELE], [Greece],[Y]	1	ESR8	2														1	2									
[CERN], [Switzerl.], [N]	[PRIELE], [Greece],[Y]	3	ESR8	2																		3	4					
[AUTH], [Greece], [N]		1,3,4	ER9	24													1	2	3	4	5	6	7	8	9	10	11	12
[CAEN], [Italy], [Y]	[AUTH], [Greece], [N]	2	MER11	4				1	2																			
[CAEN], [Italy], [Y]	[AUTH], [Greece], [N]	2, 4	MER12	4															1	2								
[CAEN], [Italy], [Y]	[AUTH], [Greece], [N]	2, 4	ESR13	6															1	2	3							
[CAEN], [Italy], [Y]	[AUTH], [Greece], [N]	2	ER19	8			1	2	3	4									3	4	5	6	7					
[CAEN], [Italy], [Y]	[CNRS], [France], [N]	2	ER14	8							1	2				3	4							5	6			
[UniPisa], [Italy], [N]		4	ER15	20										1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[CAEN], [Italy], [Y]	[CNRS], [France], [N]	6	MER17	4							1	2																
[CNRS], [France], [N]		6,2	MER18	12						1	2	3	4	5	6	7	8	9	10	11	12							

WP4: Simulation
Beneficiary: University of Pisa

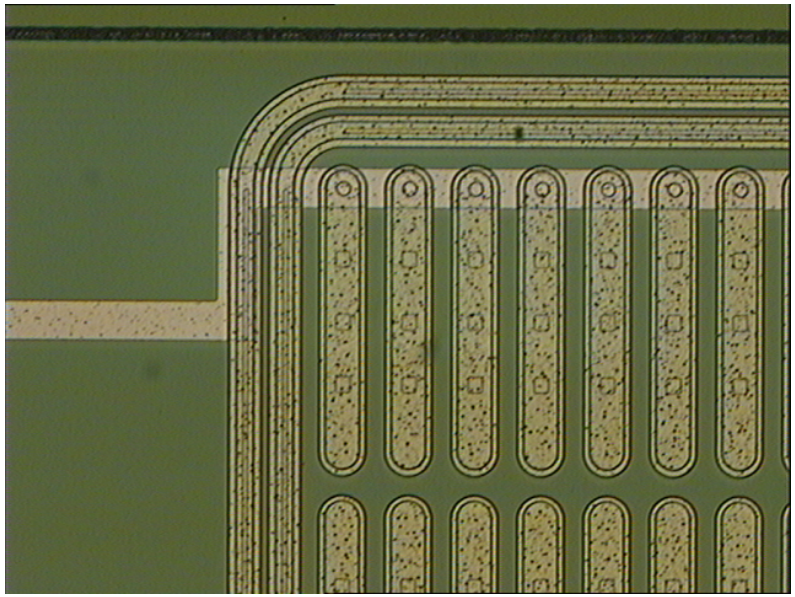
Objectives
Production of test vectors to validate hardware configurations
Definition of Level 1/Level 2 architectures to optimize physics reach

Deliverables/Milestones/Description of work for the first year
-FTK demonstrator detailed simulation (M9)
Software simulation of the hardware details of the FTK demonstrator
-Test vectors for the FTK demonstrator (M10)
-Test vectors for the SLP-2 based FTK (M16)
Work in progress by the Pisa-Engineers group

Secondments
No secondments in the first year

Recruitments
One recruitment in Pisa in the first year

WP6:Silicon Detectors
Beneficiary: CNRS



Objectives

Optimization of CAEN power supply for LHC pixel detectors (phase-II)

Deliverables/Milestones/Description of work for the first year

- Test bench **(M12)**

  Setup a test bench for power supply performance evaluation at CAEN

Secondments

- (MER) From CNRS to CAEN (Calderini **M7-M8**, August-September 2013)

  Expertise: Silicon detectors development/test/commissioning and maintenance

  Tasks: Test of power supplies

  Optimization of power supplies with irradiated devices

Recruitments

One recruitment at CNRS in the first year

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[PRIELE], [Greece], [Y]	[AUTH], [Greece], [N]	1	ER1b	2											3	4												
[UniPisa], [Italy], [N]	[PRIELE], [Greece],[Y]	1	ER5	2					1	2																		
[AUTH], [Greece], [N]	[PRIELE], [Greece],[Y]	1	ER5	2								3	4															
[UniPisa], [Italy], [N]	[PRIELE], [Greece],[Y]	1	ER6	6			1	2																				
[AUTH], [Greece], [N]	[PRIELE], [Greece],[Y]	1	ER6	2																						3	4	
[AUTH], [Greece], [N]	[PRIELE], [Greece],[Y]	1	ER7	2																								
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[CERN], [Switzerl.], [N]		1,3	ER10	12																								
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[CAEN], [Italy], [Y]	[AUTH], [Greece], [N]	2, 4	MER12	4															1	2								
[CAEN], [Italy], [Y]	[AUTH], [Greece], [N]	2, 4	ESR13	6															1	2	3							
[CAEN], [Italy], [Y]	[AUTH], [Greece], [N]	2	ER19	9			1	2	3	4									5	6	7	8	9					
[CAEN], [Italy], [Y]	[CNRS], [France], [N]	2	ER14	8							1	2				3	4							5	6			
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[UniPisa], [Italy], [N]		4	ER15	20										1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[redacted]		[redacted]	[redacted]	[redacted]																								
[CAEN], [Italy], [Y]	[CNRS], [France], [N]	6	MER17	4							1	2																
[CNRS], [France], [N]		6.2	MER18	12						1	2	3	4	5	6	7	8	9	10	11	12							

Backup