

Major hardware components to be built :

PPr Module (PPM)	Schematics done
Analog Input Board (AIB)	Prototype ready and tested
PPrMCM	Prototype ready and assembled
PPrASIC	Prototype ready and under test
LVDS Cable Driver (LCD)	Working option available
TCM-PPr Interface	To be done
PPr ROD	Prototype-1 tested
Pipeline Bus Backplane	To be done

... so far most efforts went into MCM / PPrASIC as key components ...

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# Latest planning : PPr Module ready end 2002, slice test spring 2003

# **Reasons for a revised time planning :**

Problems in recruiting Ph.D.'s and Post-Doc's

Deadtime due to institute removal much larger than planned (loss for ATLAS estimated 9-12 man months, about 3 - 4 months in real time)

# Things will get better due to :

Full professorship for ATLAS will be filled by summer 2003 Institute removal will be finished by the end of 2002 Keep trying to find suitable diploma/Ph.D./Post-Doc



#### Subsystem Tests - ASIC Production - MCM Production

	4q_02	1q_	03	2q_03	3q_03	4q_0	3	1q_04	2q_04	3q_04	4q_04	1q_0;	5 2q_0	5 3q_05
													-	
Tests														
Alternative: LFAN / Virtex_50E														
ASIC Test on MCM test board														
ASIC Test on Wafer-Prober														
ASIC -die power-tests for 100 MCMs @HASEC (Slice-test)														
ASIC Production														
Verilog-Code Modifications			::::											
Re-Synthesis and Layout														
Submission and Test							::							
Verify 0.6mu process availability	::::::::::		_											
MCM Production														
3 Proto-MCMs			_											
100 Slice-test MCMs @HASEC														
Produce FULL quantity (>3866) MCM-subtrates														
Final Production with "inline" test														

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## HARDWARE : Mother and Daughters (1) - The PPr Boards

	4q_02	1q_03	2q_03	3q_03	4q_03	1q_04	2q_04	3q_04	4q_04	1q_05	2q_05
PPModule Board											
Schematics											
PCB Layout											
Pre-Production (4 for Slice-Test)											
Full Production											
Assembly; Full Test											
Anin Board (AIB)											
Assembly for Asic/MCM test boards		1									
Pre-Production (16 for Slice-Test)											
Full Production											



## HARDWARE : Mother and Daughters (2) - The PPr Boards

	4q_0	2 1q_03	2q_03	3q_03	4q_03	1q_04	2q_04	3q_04	4q_04	1q_05	2q_05
Lvds Cable Driver (LCD)											
Schematics											
PCB Layout											
Pre-Production (4 for Slice-Test)											
Full Production											
TCM-PPr Interface											
Schematics											
PCB Layout											
Pre-Production (2 for Slice-Test)											
Full Production											



### HARDWARE : The Readout System

		4q_	02	1q	03	2q_	03	3q_	03	4q_	03	1q	04	2q_	04	3q_	04	4q_	04	1q	05	2q_	05
PPr ROD																							
Reduction of PPM to ROD-function									::::														
PCB Layout																							
Pre-Production (2 for Slice-Test)										1111 (	: : : :												
Full Production																							
PLBus Backplane Plug-ons																							
simple "wrap-around" (Slice-Test)																							
final "interleaved" version																							
	-																						



### Software and Firmware

		4q_	02	1q_03	2q_03	3q_03	4q_03	1q_04	2q_04	3q_04	4q_04	1q_05	2q_05
Firmware	_												
PPr ROD: PLBus Master FPGA													
PPM: RemFPGA													
LCD: Fanout													
PPM / PPrROD: VME _Interface													
Test System (WaferProbe / MCM)													
Software													
LabView for WaferProbe test	_			:::::::::									
C-Software for MCM test													
MCM test for HASEC inline-test													
DAQ-1 to be used in Slice-test													
(Module) Part-descriptions for HDMC													
Monitoring and Control													
System Emulation													

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## Spending money : Purchase of components

	4q_02	1q_03	2q_03	3q_03	4q_03	1q_04	2q_04	3q_04	4q_04	1q_05	2q_05
Purchases											
Parts for AnIn boards											
LVDS 60MHz dies											
MCM Connectors											
Analog Cables (Saclay)	777										
MCM Substrates (100 for Slice-Test)											
Crates											

- Almost all commercial components will be available by the end od 2002 (including all spares)
- Crate purchase delayed to 2005
- ASIC production is a key issue for 2002 (availability of 0.6 µm technology)
- Last major cost item is production and assembly of MCM and PCB's
- Saclay status is unclear
- SPENDING PROFILE REMAINS UNCHANGED



# **Conclusions :**

Realistic re-scheduling taking into account current lack of manpower and losses due to removal of the institute sets the date for the first PPM back from spring 2003 to beginning 0f 2004.

Current efforts concentrate on a solid test of the core components (MCM / PPrASIC) which do heavilly depend on the availability of current technologies.

Staff situation is expected to improve substantially next year.