

## Schedule, Budget and Conclusions

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## Schedule (1/4)

	Tasks					<b>20</b> 13								2014	1			
	Title	Location	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Aprll	Мау	June	July	Aug.	Sept.
ş	Mechanics for MBs	IPNO																
Boards	MB Design	INFN																
	MB Construction	INFN																
Mother	MB Test	INFN																
Σ	Ship to IPN Orsay	INFN																
s	PA tests	IPNO																
ifier	Procurement PA parts	IPNO																
l d u	PA Production	IPNO																
Preamplifiers	PA Tests	IPNO																
<b>–</b>	Ship to JLab	IPNO																

- Mechanics for MB have been extended following a change in concept (from 8 to 4 boards)
  - Mechanical design now finished
  - Project in good shape, no R&D or development needed
  - Will be delivered to Orsay in January for assembly to the rest of the ECal boxes
- Preamplifiers change of plan shortened significantly the procurement time and production time
  - Will be shipped to JLab together with the ECal boxes



## Schedule (2/4)

		Tasks					2013								2014	L			
	Titl	e	Location	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
	LED LMS De	esign	INFN																
	LED holder (	design	INFN																
	LED holder	production	INFN																
	Mechanic de	əsign	IPNO																
LMS	Connec. Boa	ards design	INFN																
-	Connec. boa	ards prod.	INFN																
	Procuremen	ts LED	IPNO																
	LED tests		IPNO																
	Assembly		IPNO																
	Tooling for a	issembly	INFN																
s	Tooling for A	PD tests	INFN																
APDs	Procuremen	t APDs	INFN																
New J	Test of APD	s	INFN																
Ž	APD re <mark>place</mark>	ement	INFN																
	Tests of crys	stal-APD	INFN																

- LED system design is underway
  - Will need important efforts in early 2014

#### APD change

 Internal paperwork for procurement have already began in both INFN and IPNO



## Schedule (3/4)

	Tasks					2013								2014	ı			
	Title	Location	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	Мау	June	July	Aug.	Sept.
	Dismounting ECal	IPNO																
	Ship to IPN Orsay	IPNO																
s S	Thermal box work	IPNO																
Mechanics	Structure parts	IPNO																
ech	Mounting system desig	in IPNO																
Σ	Preamps rails	IPNO																
	MS construction	IPNO																
	Ship to Jlab	IPNO																
۷l	Assemble ECal	JLab																
Assembly	ECal comm <mark>issioning</mark>	JLab																
Ass	ECal installation	JLab																

- Mechanics will be modified mainly in Orsay in early 2014
  - Work begin 12th of November with the complete dismounting of the calorimeter
- Reassembly of the calorimeter could begin in May if all parts are ready in time
  - One month contingency is inserted at that point



# Schedule (4/4)

#### jeudi 17 octobre 2013

- Schedule build for installation in September
- Schedule is tight in some places, but...
- Schedule allows for one month of contingency for each independent parts

								jeudi 1	/ OCTO	bre 201	3
	Tasks				2013				201	4	
	Title	Location	June	July Aug	. Sept.	Oct. Nov.	Dec.	Jan. Feb. Mar.	April May	June July	Aug. Se
۵	Mechanics for MBs	IPNO									
bard	MB Design	INFN									
Mother Boards	MB Construction	INEN									
the	MB Test	INFN									
ž	Ship to IPN Orsay	INFN									
ø	A Production IPNO A Tests IPNO										
je.	Procurement PA parts	IPNO									
Ē	PA Production	IPNO									
Preamplifiers	PA Tests	IPNO									
•	Ship to JLab	IPNO									
	LED LMS Design	INFN									
	LED holder design	INFN									
	LED holder production	INFN									
	Mechanic design	IPNO									
LMS	Connec. Boards design	INFN									
_	Connec. boards prod.	INEN									
	Procurements LED	IPNO									
	LED tests	IPNO									
	Assembly	IPNO								_	
	Tooling for assembly	INFN									
\$	Tooling for APD tests	INFN									
APD	Procurement APDs	INFN									
New APDs	Test of APDs	INFN									
Z	APD replacement	INFN									
	Tests of crystal-APD	INFN									
	Dismounting ECal	IPNO									
	Ship to IPN Orsay	IPNO									
8	Thermal box work	IPNO									
anlo	Structure parts	IPNO									
Mechanics	Mounting system design	IPNO									
Σ	Preamps rails	IPNO									
	MS construction	IPNO									
	Ship to Jlab	IPNO									
											1
<b>b</b>	Assemble ECal	JLab									
Assembly	ECal commissioning	JLab									
As	ECal installation	JLab									



# Budget (1/3)

- Not accounting for manpower and travels
- Mother boards (INFN)
  - Construction 12k€
  - Tools for tests 3k€
- Preamplifiers (IPNO)
  - Electronics 1.5k€
  - Shipping 0.5k€
- Light monitoring system (INFN)
  - LED holder 10k€
  - Boards production 16k€
  - LEDs and wires 3k€
  - Tools for tests 3k€



## Budget (2/3)

- APD replacement (shared)
  - APDs 215k€
  - Tooling for assembly and tests 30k€
  - Shipping of the tools 5k€
- Mechanics (IPNO)
  - 4.5k€ of equipment
  - 1.5k€ shipping
- Installation and Commissioning
  - Mostly travels



#### Budget (3/3)

- Totals (no salaries included)
  - IPNO → 133k€ (+ 45k€ travels)
  - INFN → 172k€ (+ 60k€ travels)
  - Total is 410k€
  - Contingency funds available in IPNO up to 100k€
- All money accounted here is secured, both for IPNO and INFN
- The success with grants in both France and Italy allows us to go with all best options identified at the beginning of the project



#### Conclusions

- The goals for each part of the project are now clear
- Design is already well advanced and meets all our requirements
- The interfaces with the rest of the HPS project are identified
- We have a full schedule with 1 month contingency for each part of the project
- We are already exploring several calibration techniques for the ECal
- No R&D is necessary anymore at this stage
- We have all necessary funds secured with contingency
- No formal quality insurance, but cross checks between INFN and Orsay engineers
- The groups of INFN and Orsay collaborate closely to develop the design and share the construction work