Schedule, Budget and Conclusions

Raphaël Dupré

Institut de Physique Nucléaire d'Orsay

CNRS-IN2P3

Université Paris-Sud

Unité mixte de recherche

CNRS-IN2P3
Université Paris-Sud

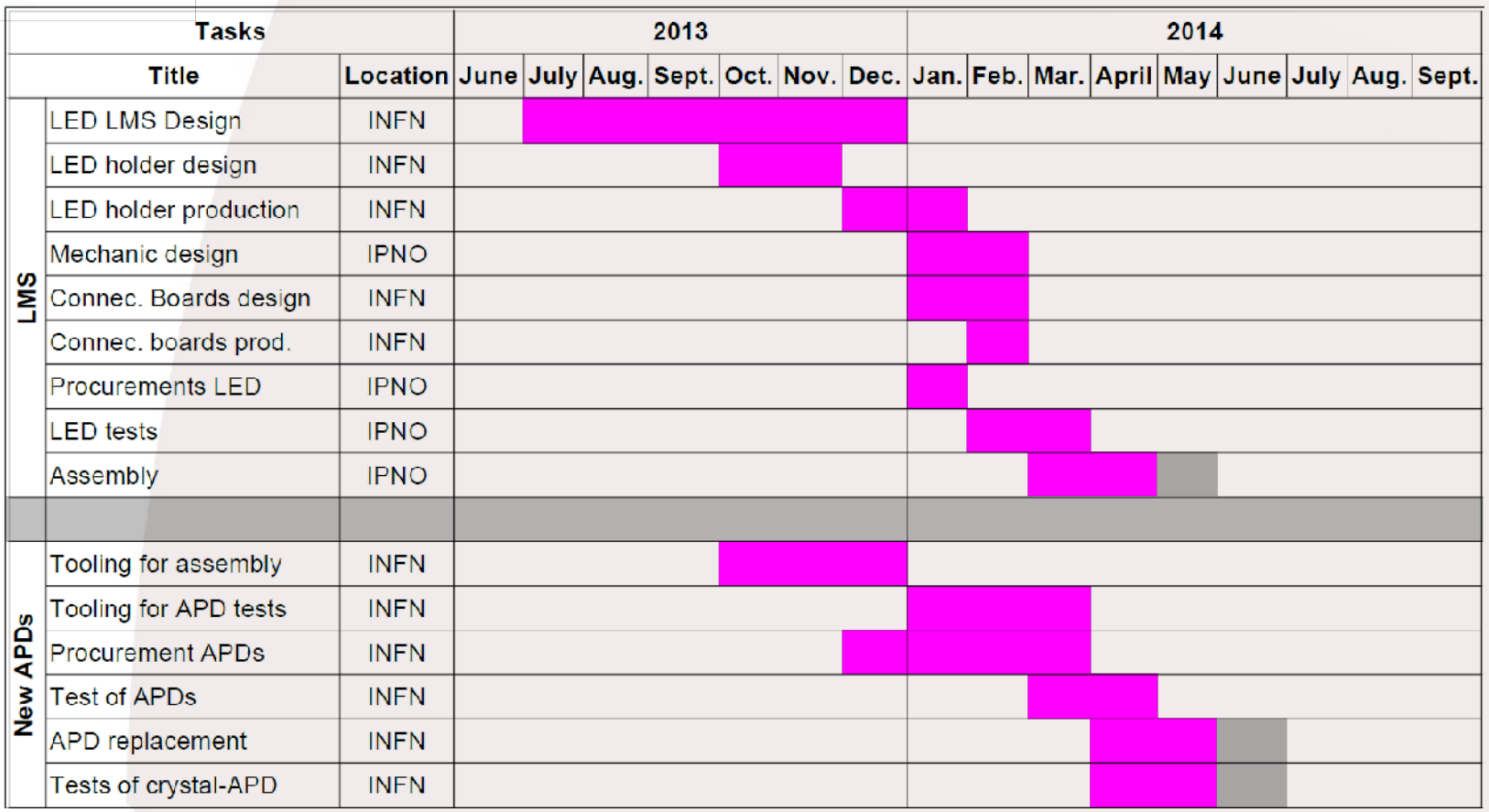
91406 Orsay cedex
Tél. : +33 1 69 15 73 40
Fax : +33 1 69 15 64 70
http://ipnweb.in2p3.fr

Schedule (1/4)

Tasks			2013							2014								
	Title	Location	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
Mother Boards	Mechanics for MBs	IPNO																
	MB Design	INFN																
	MB Construction	INFN																
	MB Test	INFN																
	Ship to IPN Orsay	INFN																
Preamplifiers	PA tests	IPNO																
	Procurement PA parts	IPNO																
	PA Production	IPNO																
	PA Tests	IPNO																
	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**

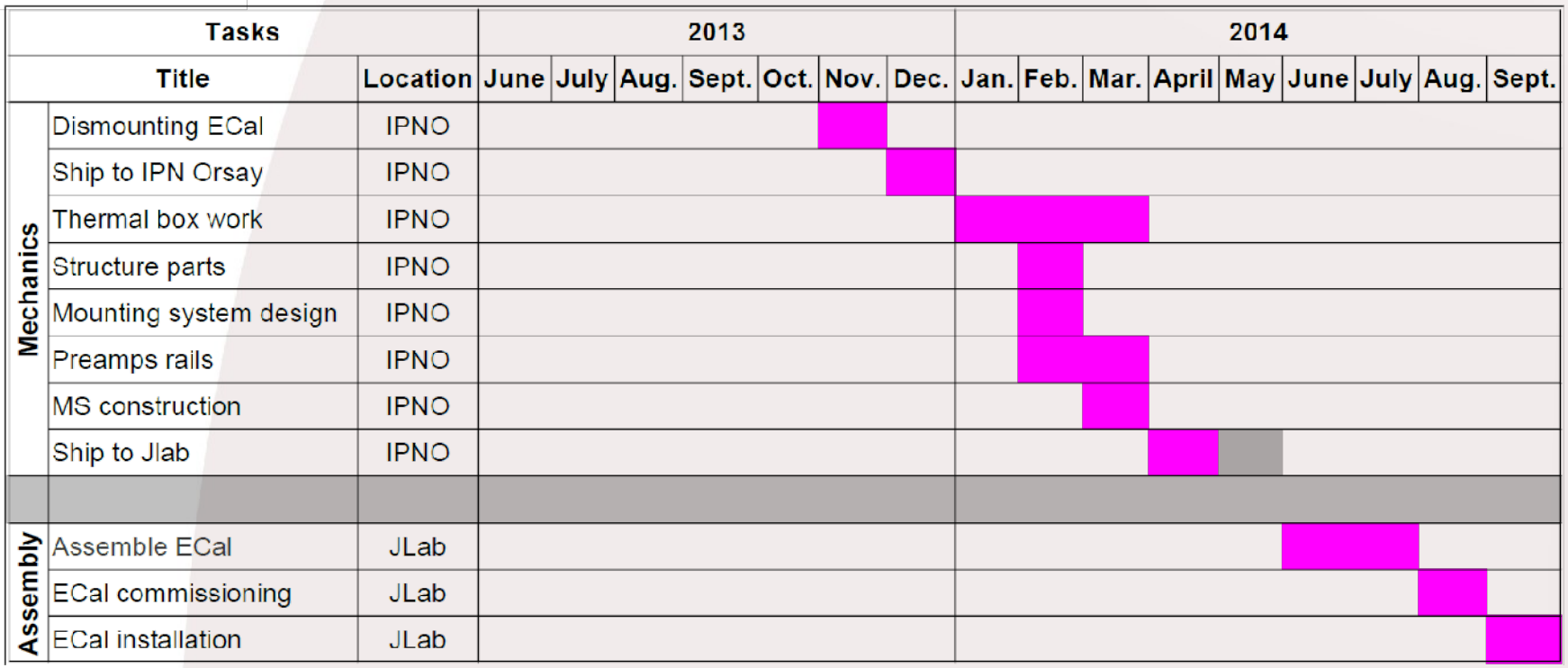
Schedule (2/4)



	Tasks		2013							2014								
	Title	Location	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
LMS	LED LMS Design	INFN																
	LED holder design	INFN																
	LED holder production	INFN																
	Mechanic design	IPNO																
	Connec. Boards design	INFN																
	Connec. boards prod.	INFN																
	Procurements LED	IPNO																
	LED tests	IPNO																
	Assembly	IPNO																
New APDs	Tooling for assembly	INFN																
	Tooling for APD tests	INFN																
	Procurement APDs	INFN																
	Test of APDs	INFN																
	APD replacement	INFN																
	Tests of crystal-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)

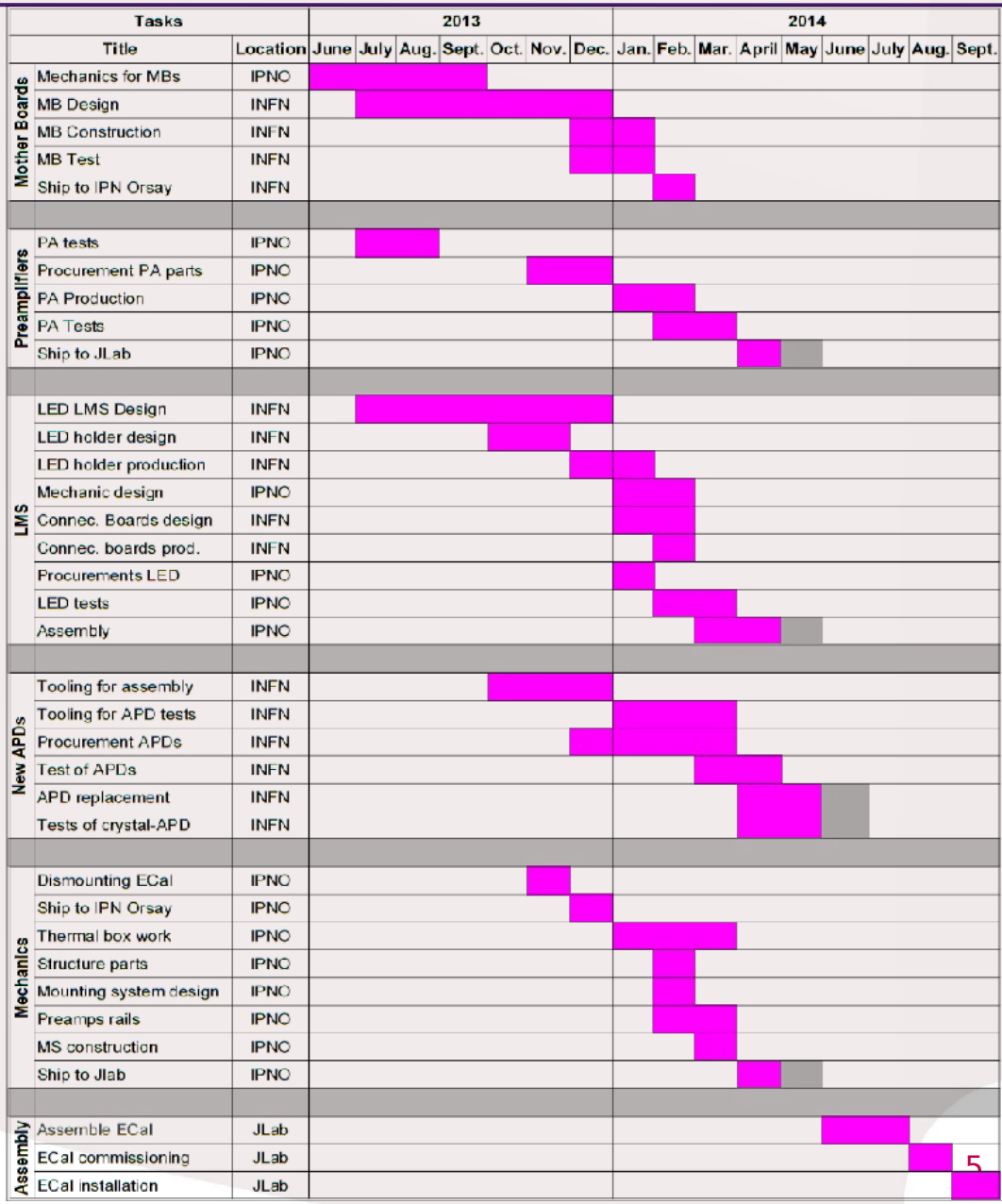


- **Mechanics will be modified mainly in Orsay in early 2014**
  - **Work begin 12th of November with the complete dismounting of the calorimeter**
- **Reassembly of the calorimeter could begin in May if all parts are ready in time**
  - **One month contingency is inserted at that point**

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**



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