

CMS

CERN-Korea Meeting

14 Apr 2008

Introduction
Status of CMS (see RRB Talk)
Funding and Rescoping Endcap RPCs

Compact Muon Solenoid

T. Virdee
CERN/Imperial College



New Collaborator

At the February meeting of the CMS Collaboration Board Inkyu Park presented the application for full membership of the University of Seoul. This Institute would replace the Seoul National University of Education. Interests: Heavy Ion physics, jet finding, Tier-2, Offline, Computing

A vote on the application would be held at the next Collaboration Board meeting in June.

It was agreed that 2 FTE would work in the area of software/computing identified in M&O Cat B.



Progress Since Last Meeting

Hardware:

DAQ: From KNU: All monitoring flatscreens for SCX have been delivered and installed. Remaining monies (400 kCHF): 200 kCHF should be sent soon (issue of exchange rate), other 200 kCHF next year.

RPCs: All “Initial CMS Detector” chambers have now been installed. 6 RE1/1 chambers delivered. Work still needed before installation.

Offline, Computing:

~ 2 FTE working on core offline and computing tasks (M&O Cat B)

Physics:

Around 13 scientists (senior, postdoc and students) are currently working at CERN.

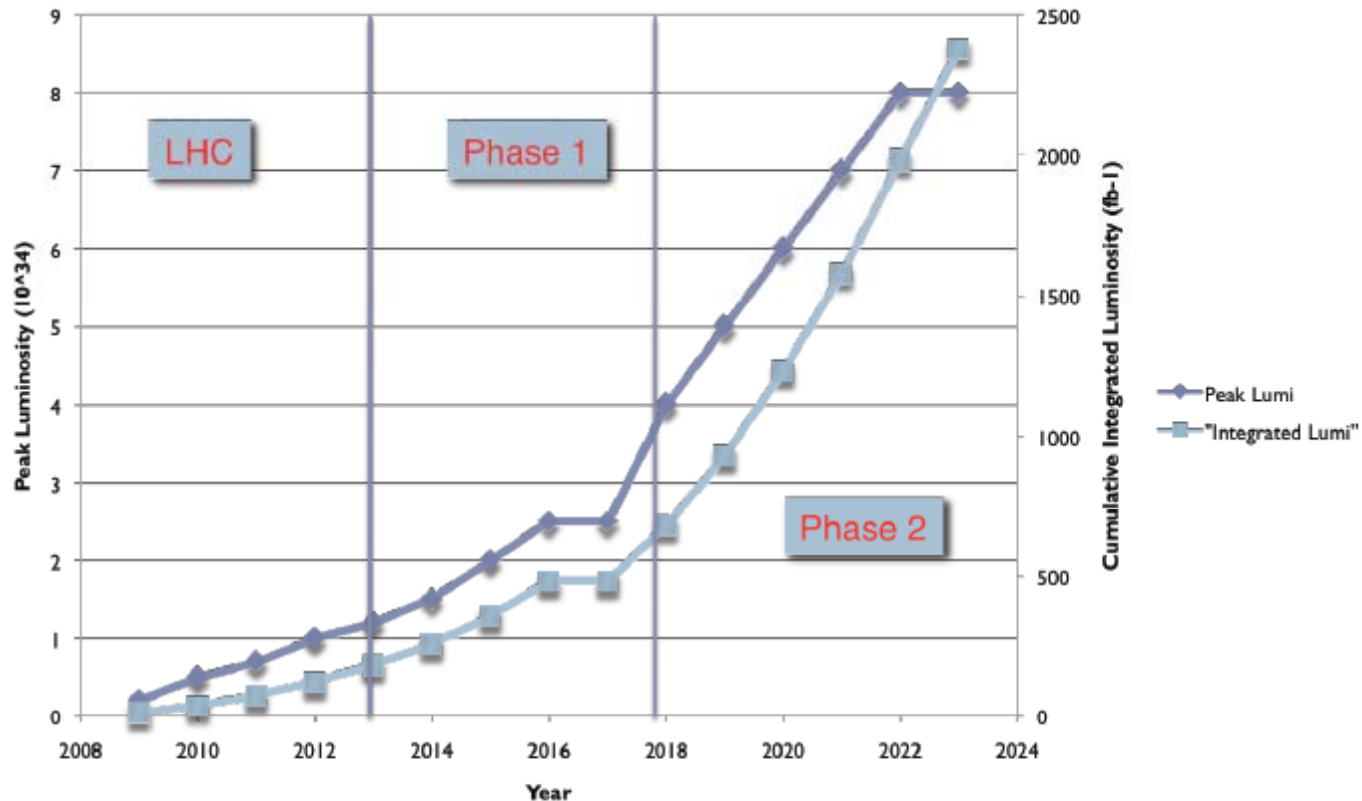
Currently discussing how to reinforce contributions to commissioning and operation of RPC system (and ECAL).

Can look forward to an effective participation from the Korean scientists. Funding to be based at CERN is helping a great deal.



Long Term Future

LHC Upgrades will be carried out in phases. Kick-off Meeting at CERN 9 Apr.
Phase 1: ≥ 2013 - Concentrates on a change to the insertion to allow $2 \cdot 10^{34} \text{ cm}^{-2}\text{s}^{-1}$.
Phase 2: ≥ 2017 Concentrates on upgrade of injector chain to go to $\sim 10^{35} \text{ cm}^{-2}\text{s}^{-1}$.
CMS is organizing the work to take this into account. More details at next RRB.





Funding

CMS wishes to thank MoST for pledging to contribute 552 kCHF covering the outstanding CtC2 (147 kCHF) and the Steps 1, 2 and 3 contributions (405 kCHF).



CMS Funding

Table 2: Status of Requests for Additional Funding (kCHF)

	Step 1	Step 2	Step 3	Comment
Austria	211	45	171	←
Belgium-FNRS	136	77		
Belgium-FWO	136	34		
Brazil	n.a.			Request made for Step 2
Bulgaria				Awaiting response
CERN	4,569	297	1,119	
China	Endcap RPC	Endcap RPC	Endcap RPC	
Croatia	15			
Cyprus				Awaiting response
Estonia	5	8		
Finland	272	49		Funding in 2010 and 2011
France-CEA	341	58	218	← Step 3 likely in 2009
France-IN2P3	n.a.	2,000	n.a.	
Germany BMBF	919	169	637	
Germany DESY	n.a.	2,000	n.a.	
Greece				News in Oct RRB
Hungary				Discussing
India	Endcap RPC	Endcap RPC	Endcap RPC	Request Submitted, News in Oct RRB
Iran	Endcap RPC	Endcap RPC	Endcap RPC	Discussing
Ireland	n.a.	4	16	
Italy	2,500			Step 1 likely to be partially covered
Korea	Endcap RPC	Endcap RPC	Endcap RPC	←
Mexico	n.a.			Awaiting Response
New Zealand	n.a.	12		Discussing Step 3
Pakistan	Endcap RPC	Endcap RPC	Endcap RPC	
Poland	132	49		
Portugal	108	21		
RDMS-DMS				Discussing
RDMS-Russia				Discussing
Serbia	20			
Spain	344	140		
Switzerland	n.a.	124	466	
Taipei	121	45		
Turkey	47	74		← Request for Steps 1&2 in 2009/2010
U.K.	575	202	762	
USA-DoE/NSF	5,252	1,722		
Sum	15720	7130	3390	
Requested	17,530	8,400	16,600	
% covered	90%	85%	20%	

Table 3: The state of funding of the restoration of the forward RPC system.

FUNDING Countries	Contributions kCHF	Comments
Belgium	420	Likely to use its Step 3 funds for RPC system
China	500	
India	800	Request made. News in Oct.
Iran		Discussing. Request made in Oct06 RRB was for 800 kCHF
Korea	522	
Pakistan	1250	

Bold: Input since the October 2007 RRB.

**RE- Phase 1 upscope:
Detailed cost estimate and sharing
will be presented to the Oct 08 RRB**

Bold: Input since the October 2007 RRB.



Conclusions

- CMS is continuing to make good progress. All CMS detectors are installed except for pixels and endcap ECAL.
- CMS is aiming to close the experiment at the end of June and take cosmics data at operating field (3.8T).
- In June all detectors should be installed except for one ECAL endcap. Critical path goes through the installation of the beam-pipe.
- Commissioning, including using cosmics, with evermore complete setups (complexity and functionality) proceeding apace. Work already carried out so far gives confidence that CMS will operate with the expected (TDR) performance.
- **CMS is eager to take collision data at nominal or close to nominal energy.**

CMS Korean scientists are making a contribution at CERN. Some work is still required to become fully effective.

CMS thanks MoST for pledging the funds for CtC2 and Steps 1,2 & 3.