

Detector Team Update

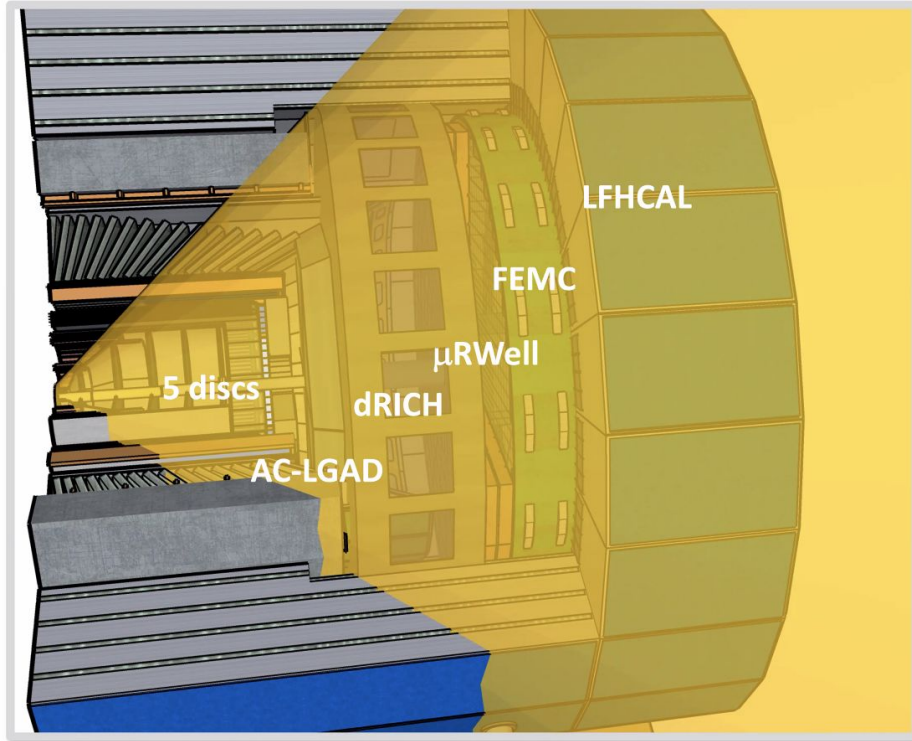
8 November 2021



ECCE Detector Team Updates

- Complete ECCE detector configuration finalized. ✓
- Detector Geant4 model updated to reflect final configuration for 3rd simulation campaign. ✓
- Final radial and longitudinal subsystem envelopes specified: ✓
 - https://docs.google.com/spreadsheets/d/e/2PACX-1vSHiMqzqiY5ZY8uvdvtVbMp_5Erv9AKvkbUBKO-5JLQAIYkuZ6SYQtN8KJ8e4cJyNhIfkGtRDUyYfk/pubhtml
 - https://wiki.bnl.gov/eicug/index.php/ECCE_Simulations_Working_Group#October_2021_Concept
- Upgrade options identified. ✓
- Internal review of all of ECCE Cost & Planning held November 4 using internal SharePoint site for data and presentations. ✓
- Follow-up internal review of planning data by experienced project management professionals on November 11.

ECCE Detector Configuration



Barrel: ITS3 MAPS Si, AC-LGAD, hpDIRC, MPGD μ RWELL, SciGlass ECAL, Fe/Sc HCAL (sPHENIX re-use)

Backward (electron direction): Si, MPGD μ RWELL, modular-RICH, AC-LGAD, PbWO₄ crystals ECAL, ~~Fe/Sc HCAL (STAR re-use)~~

Forward (hadron direction): Si, AC-LGAD, dual-RICH, MPGD μ RWELL, Pb/ScFi shashlik ECAL, longitudinally segmented HCAL

Far forward: B0, Off-momentum detectors, Roman Pots, ZDC

Far backward low: low Q^2 taggers, luminosity monitor

ECCE Detector Final Configuration

Update with the Oct-25 Biweekly ECCE meeting

Top level layers	R-in [cm]	R-out [cm]	R-Thickness
Magnet	140	170	30
EMCal support (instrumented)	134	140	6
EMCal Readout (near eta=0)	125.5	134	8.5
EMCal Glass	80	125.5	45.5
EMCal Inner support	79.5	80	0.5
muRwell (plane type)	77	79.5	2.5
Outer Frame	74.5	77	2.5
DIRC (10bar * 12 sector)	71.5	76.6	5.1
Inner Frame	65	71.5	6.5
AC LGAD ToF tracker	63	65	2
(Not used, low mass BdL)	50	60	10
Inner tracker	3	50	47

ECCE Detector Final Configuration

Top level layers	z_min [cm]	z_max [cm]	z_center [cm]	max radius [cm]	dZ [cm]
Backward HCal	-410	-300	-360	267	110
Backward EMCal	-235	-175	-185	64	60
Backward TOF/Tracker	-171	-161	-169, -172	64	10
mRICH	-161	-135	-148	64	26
Backward MPGD	-130	-120	-130	64	10
Backward Silicon tracker	-120	-30	z=-35, -57.5, -80, -107.1 cm		90
Vertex tracker	-30	30	0		60
Forward Silicon tracker	30	150	z=35, 57.5, 80, 115, 125 cm		120
Forward AC LGAD Tof/Tracker	156	180	178	80	25
dRICH	180	280	230	195	100
Forward MPGD	281	291	285	180	10
Forward EMCal	328	366	310	190	38
Forward HCal	328	500	404	267	172

		Thursday, November 4, 2021	
		Zoom Link	
		Local Meeting Room	
<u>Time (EDT)</u>	<u>Duration</u>	<u>Presentation</u>	<u>Speaker</u>
9:00	0:30	Introduction and Overview	K. Read
9:30	0:30	ECE06.10.01 Detector Management	
10:00	0:30	ECE06.10.07 Magnet	R. Rajput-Ghoshal
10:30	0:30	ECE06.10.05 Electromagnetic Calorimetry	F. Bock
11:00	0:30	ECE06.10.06 Hadronic Calorimetry	F. Bock
11:30	0:30	LUNCH BREAK	
12:00	1:00	ECE06.10.04 PID	G. Kalicy, X. He
13:00	0:30	ECE06.10.02 Detector R&D	
13:30	0:30	ECE06.10.08 Electronics	C. Cuevas
14:00	0:30	ECE06.10.09 DAQ-Computing	M. Purschke
14:30	0:30	ECE06.10.03 Tracking	X. Li, N. Liyanage
15:00	0:30	ECE06.10.10 Infrastructure and Integration	J. Haggerty
15:30	0:15	ECE06.10.11 Auxilliary Detectors	M. Murray
15:45	0:15	ECE06.10.14 Luminosity Monitors	M. Murray
16:00	1:00	Discussion and Feedback	
17:00		Adjourn	

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Cost & Schedule Review

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 Charge and Agenda	October 29	Cunningham, John	
 Cost Estimate Documents	October 29	Cunningham, John	
 Planning Supplements	October 29	Cunningham, John	
 Presentations	October 29	Cunningham, John	
 Schedule Documents	October 29	Cunningham, John	

- Detector Team, all DWG co-conveners, and SC reviewed presentation from each subsystem.
- Subsystem presentations included with subsystem description, labelled 3D model drawing, necessary R&D, scope description, high-level WBS table, execution strategy, cost breakdown, cost metrics (in-kind fraction, cost profile by FY), basis of estimate, schedule metrics (milestones, “ready to install” date, critical path analysis), resource type fractions, risks and mitigations.
- Reviewed total cost, in-kind fraction, schedule.

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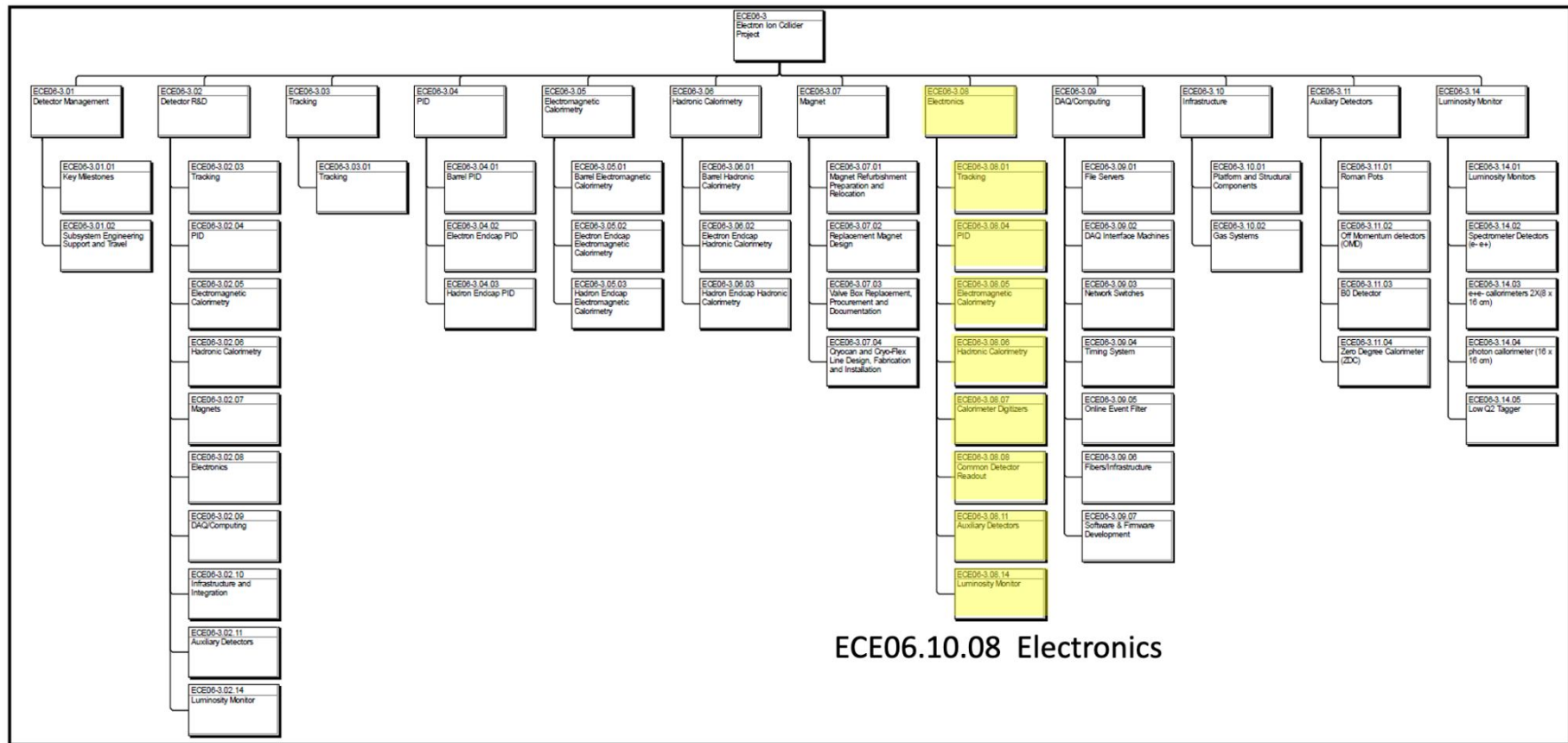
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Cost & Schedule Review > Presentations > Subsystem Manager Presentations

📄 Name ▾	Modified ▾	Modified By ▾	+ Add column ▾
📁 Archived Presentations	3 days ago	Read Jr, Kenneth F.	
📄 10.01 ECCE Cost-Schedule Presentation - Detector Management.pptx	4 days ago	Cunningham, John	
📄 10.03 ECCE Cost-Schedule Presentation - Tracking.pptx	4 days ago	Li, Xuan	
📄 10.04ECCECostSchedulePresentationPID.pptx	4 days ago	Grzegorz Kalicy	
📄 10.05 ECCE Cost-Schedule Presentation - Electromagnetic Calorimetry2.pptx	4 days ago	Read Jr, Kenneth F.	
📄 10.06 ECCE Cost-Schedule Presentation - Hadronic Calorimetryv2.pptx	4 days ago	Bock, Friederike	
📄 10.07 ECCE Cost-Schedule Presentation - Magnet_Renuka_v2.pptx	4 days ago	Cunningham, John	
📄 10.08 ECCE Cost-Schedule Presentation - Electronics.pptx	4 days ago	Read Jr, Kenneth F.	
📄 10.09 ECCE Cost-Schedule Presentation - DAQ-Computing.pptx	5 days ago	Purschke, Martin	
📄 10.10 ECCE Cost-Schedule Presentation - Infrastructure.pptx	5 days ago	Cunningham, John	
📄 10.11 ECCE Cost-Schedule Presentation - Auxiliary Detectors.pptx	5 days ago	Murray, Michael J	
📄 10.14 ECCE Cost-Schedule Presentation - Luminosity Monitors.pptx	5 days ago	Cunningham, John	

ECCE WBS structure



Detector Team Working Meeting Tuesday

- **Working Meeting** scheduled for Tuesday 10 am - 1 pm EDT:
 - Attendance from DWG co-conveners, Detector Team, SC
 - Review, edit, polish the six detector documents together
 - <https://indico.bnl.gov/event/13772/>
 - https://docs.google.com/spreadsheets/d/1Nuke_bu3tKajKQoNEF50UzSZk2lpTMqrs2Xk5KjaduE/edit?usp=sharing
- *If you would like to help*, please make sure you can open and edit the particular detector note Overleaf documents(s).
- **Goals:**
 - Identify any key missing plots or information.
 - Fix LaTeX bugs, polish the text, upload figures, and note any other items that could be addressed prior to review.
- Much material is available from excellent subsystem presentations from Nov. 4 Cost Review. Need to appropriately capture material in the Detector Notes in Overleaf.

ECCE Detector Notes

ECCE ID	Topic	Contact		
ecce-note-det-2021-01	Magnet	John Lajoie	https://github	https://www
ecce-note-det-2021-02	Calorimetry	Friederike Bock & Yongsun Kim	https://github	https://www
ecce-note-det-2021-03	Tracking	Xuan Li & Nilange Liyanage	https://github	https://www
ecce-note-det-2021-04	PID	Greg Kalicy & Xiaochun He	https://github	https://www
ecce-note-det-2021-05	Readout/DAQ	Chris Cuevas & Martin Purschke	https://github	https://www
ecce-note-det-2021-06	Far forward/Far backward	Michael Murray, Yuji Goto	https://github	https://www
ecce-note-det-2021-07	Costing	Doug Higinbotham & Ken Read		

BACKUP