

TC-office Report

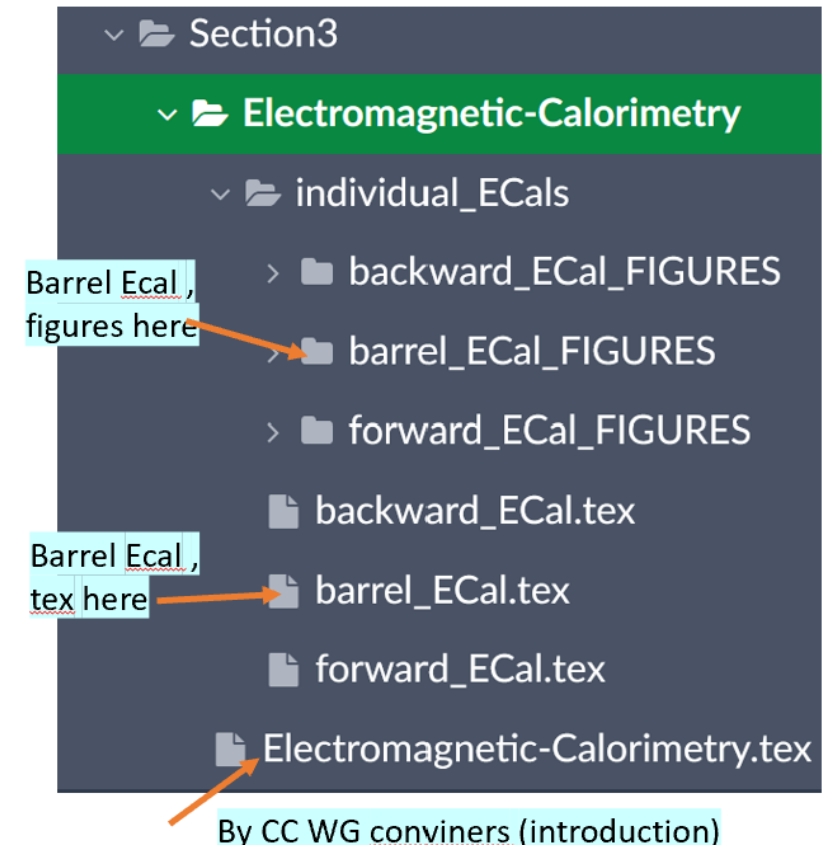
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ePIC General Meeting, July 12, 2024

- **Monitoring the DSC progresses with periodic reports at the TIC meetings**
 - Most recently
 - 6/3: Tracking
 - 6/10: PID
 - 6/24: FF
 - 7/1: FB
 - 7/15: Calorimetry; electronics/r-o/DAQ

TC-office and preTDR – overleaf frame

- Acknowledging the overleaf project creation by Douglas Higinbotham
- DSC contributions are included in the chapter/section 8.3
- Preparing the frame in overleaf for the DSC material
 - Authorized for text editing
 - DSLs, DSCTs
 - CC WG conveners
 - Technical aspects
 - the project is structured so that, while progressing in your editing, you do not need to recompile the whole of it at each step: recompiling a subsection is enough;
 - Directories organize to facilitate the parallel work of the various CC WGs/ DSC



TC-office and preTDR – overleaf frame, cont.

- The structure discussed at 2 TIC meetings and finally approved is in: please, preserve it!

8.3.5.2 The barrel electromagnetic calorimeter

Subsystem mechanics and integration: Add text here.

Requirements

Calibration, alignment and monitoring: Add text here.

Requirements from physics: Add text here.

Status and remaining design effort:

Requirements from Radiation Hardness: Add text here.

R&D effort: Add text here.

Requirements from Data Rates: Add text here.

E&D status and outlook: Add text here.

Justification

Other activity needed for the design completion: Add text here.

Device concept and technological choice: Add text here.

Status of maturity of the subsystem: Add text here.

Subsystem description:

Environmental, Safety and Health (ES&H) aspects and Quality Assessment
ning: Add text here.

General device description: Add text here.

Construction and assembly planning: Add text here.

Sensors: Add text here.

FEE: Add text here.

Other components: Add text here.

Collaborators and their role, resources and workforce: Add text here.

Requirements from Data Rates: Add text here.

Risks and mitigation strategy: Add text here.

Implementation

Additional Material Add text here.

Services: Add text here.

- The length each DSC subsection is expected to be within **10-15 page** → **Executive summary format**

BUT

- **Additional Material, as wide as needed;** all the extra material exceeding the compact format of the pre-TDR document. At a later time, this extra material, which can be abundant, will be moved in appropriate **Appendices.**

TC-office and preTDR - hardware studies

- **Following the lab / testbeam / rad-hard studies**
 - At recent TIC meetings
 - 5/13: **photosensors for PID Cherenkov subsystems**, updates of hardware studies
 - Constant progress in establishing SiPms for these applications
 - Initial characterization of the first HRPPD units
 - 5/20: progress of **ASTROPIX** development
 - 6/3: a report concerning the delivery of the **BaBar quartz bars** at Jlab
 - 6/17: news from the **first ITS3 testbeam**
 - 6/24: news from the **dRICH test beam**; **TimePix4** news
 - 7/8: forward **HCal insert/ZDC prototype** testbeam at STAR; **rad-hard studies** for the calorimetry SiPM, an update

TC-office and preTDR - suggested priorities for simulation studies

- Studies for subsystems where there are technical aspects still open:
 - simulations dedicated to soft gamma and to vector meson production in order to optimize the **ZDC configuration**
 - UCR and Regina U. robustly at work;
 - motivation and requirements for the **backward HCal**
 - the activity needs to move towards a better focus and more robust organization;
 - needs in term of space resolution for the **outer MPGD**
 - In progress (typically discussed at the MPGD-DSC-Simulation meetings);
 - impact on physics of **dRICH with single vessel vs dRICH with split vessel**
 - In an extremely preliminary status.

At TIC meeting on June 17:

- **Highlights of the 12th Forum on Tracking Detector Mechanics**



The “forum” spirit...

- 50-50 split or higher for engineers vs physicists
- 3 days including a poster session and R&D sessions
- Long talks and ample time for discussion
- Discuss what went wrong not just what was a success
- ~~Duplicated effort~~ and learn from other, community building

Andy Jung

In evidence: important advantages and work progress when engineers and physicist work together in brainstorming mode novel



**An innovate Work fest at the coming ePIC meeting at Lehigh U. :
"Integration and Installation"**

proposed by Prakhar Garg, co-organized with Silvia Dalla Torre

“Integration and Installation” Work Fest, agenda (almost finalized)

Thu 25/07

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13:00	Introduction/ Current status of ePIC Detector & discussion <i>Rahul Sharma</i> <i>Rm 151, Rauch Business Center</i> 13:00 - 13:40
14:00	Central Detectors Installation and supports & discussion <i>Nathaniel Speece-Moyer et al.</i> <i>Rm 151, Rauch Business Center</i> 13:40 - 14:20
14:00	Far detectors installation and support & discussion <i>Dan Cacace et al.</i> <i>Rm 151, Rauch Business Center</i> 14:20 - 15:00
15:00	Routing Plans for Cooling and Services & discussion <i>Rm 151, Rauch Business Center</i> 15:00 - 15:40
15:00	BOT and ECT (uRwell detectors) design and integration for the MPGD <i>Seung Joon Lee</i> <i>Rm 151, Rauch Business Center</i> 15:40 - 15:55
16:00	pfRICH Engineering Update <i>Alex Eslinger</i> <i>Rm 151, Rauch Business Center</i> 15:55 - 16:10
16:00	Barrel EMCAL Engineering Update <i>Kevin Bailey et al.</i> <i>Rm 151, Rauch Business Center</i> 16:10 - 16:25
16:00	nEMCal Engineering Design Update <i>Carlos Munoz Camacho</i> <i>Rm 151, Rauch Business Center</i> 16:25 - 16:40

❖ Participation of Several Project Engineers confirmed

From subsystems:

- ❖ BOT and ECT (uRwell detectors)
- ❖ EEEMCAL
- ❖ pfRICH
- ❖ BIC (Barrel Imaging Calorimeter)
- ❖ TOF support/ GST/ IST (expected)

Slow Control, a starting step at TIC meeting on July 1st

- **Project proposal:**
 - **Slow Control based on the opensource EPICS software tools**
 - **the hart of the hardware is a set of PLCs, which will**
 - **issue interlock**
 - **apply slow control commands**
 - **monitoring and storage of detector parameters (T, currents, magnetic filed, pressures, ...)**
 - **Data from the Slow Control system also be acquired by the DAQ system to be included in the output data stream.**
- **Needed to progress**
 - **A more advanced conceptual model**
 - **A centralized PLC software development**
 - **A centralized selection of the PLC family**
 - **A better-defined model of interplay between Slow Control and DAQ architecture**
- **Following steps, after a more advanced model is made available:**
 - **Form a slow control-dedicated task force with contributors from DSCs ?**

Keywords for ePIC Zenodo effort, ONLY detector sector

- **Proposed list presented at TIC meeting on July 8**
 - **Useful feedback from several DSCs (thank you!)**
- **Request based on technical aspect from Maxim Potekhin:**
 - **use only small letters and alphanumeric characters**
 - **A “translation attempted”**
- **Next step: the “translated” keyword will be posted as Proposed keywords in the ePIC web page**
 - **Further feedback will be welcome**