

Getting the Ball Rolling

Baseline Configuration(s) and Next Steps

TU

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Status

- PWG are still in Yellow Report Mode
 - ▶ Need well defined key measurements that address detector performance
 - ▶ Have to setup validation scheme and workflow so that further iterations are fast
 - ▶ WGs need clear directions and charge
- DWG
 - ▶ Many options discussed (too many, too few?)
 - ▶ No down-select so far
 - ▶ No effort in areas where we have clear issues
- ATHENA
 - ▶ We are behind and need to get going
 - ▶ Need better integration with project (engineering!)
- Software
 - ▶ I might be biased but this is one of our strengths

Baseline (THIS WILL NOT BE THE FINAL DETECTOR)

- Define a baseline configuration
 - ▶ Not too far from CDR/YR
 - ▶ **Simple and basic (can be implemented today)**
 - ▶ Serve as a reference for further iterations and costing
 - ▶ Use only subsystems where we have relatively (?) stable performance parameters
- Note
 - ▶ In the proposal selection process we will be asked why configuration A versus B and we need answers in terms of cost and performance.
- Workflow:
 1. Subsystem parameters \Rightarrow DWG
 2. Services/Integration \Rightarrow DWG + project
 3. Geant \Rightarrow Software Group
 4. Verification \Rightarrow DWG + project
 5. Basic performance \Rightarrow DWG
 6. Physics performance & validation \Rightarrow PWG

Labels

- Need unambiguous ID of specific configuration.
- Label according to their coverage (using existing letters from software group)
 - ▶ B = Barrel
 - ▶ P = forward, Positive endcap
 - ▶ N = backward, Negative endcap
- Followed by a two-digit version number M.N
 - ▶ M defines specific subsystem composition (change if subsystem add or remove)
 - ▶ N labels the geometry(e.g. pixel size, thickness, service material etc) are changed within a given overall configuration M.
- If needed the software group can add a 3rd number (M.N.V) for software version or the like - up to them

Proposed Baseline

- Barrel **B-0.0**

- ▶ All-Silicon Tracker^{1*}
- ▶ HP-DIRC
- ▶ EMCAL (...)
- ▶ HCAL (Fe/Sc)

- Barrel **B-1.0**

- ▶ Silicon Tracker*
- ▶ MPGD (cylindrical) Layer*
- ▶ HP-DIRC
- ▶ EMCAL (...)
- ▶ HCAL (Fe/Sc)

- Forward **P-0.0**

- ▶ Si-Disks
- ▶ GEM/MMG Layer
- ▶ dRICH
- ▶ EMCAL (W powder/ ScFi)
- ▶ HCAL (Fe/Sc)
- ▶ B0
- ▶ Off-Momentum
- ▶ Roman Pots
- ▶ ZDC

- Backward **N-0.0**

- ▶ Si-Disks
- ▶ GEM/MMG Layer
- ▶ mRICH
- ▶ iEMCAL (PbWO₄)
- ▶ oEMCAL (PbWO₄^{*}) – SciGlass possible if specs available?
- ▶ HCAL (Fe/Sc)
- ▶ Low-Q₂ Tagger

Magnet: Solenoidal Configuration

* Deviates from CDR/YR version

¹ Really all silicon (no MPGD)