







# Tracking requirements

- Basics tracking requirements:

Tracking requirements from PWGs							
			Momentum res.	Material budget	Minimum pT	Transverse pointing res.	
$\eta$							
-3.5 to -3.0	Central Detector	Backward Detector	$\sigma/p \sim 0.1\% \times p \oplus 0.5\%$	$\sim 5\% X_0$ or less	100-150 MeV/c	$dca(xy) \sim 30/pT \mu\text{m} \oplus 40 \mu\text{m}$	
-3.0 to -2.5			100-150 MeV/c				
-2.5 to -2.0			100-150 MeV/c		$dca(xy) \sim 30/pT \mu\text{m} \oplus 20 \mu\text{m}$		
-2.0 to -1.5			100-150 MeV/c				
-1.5 to -1.0		100-150 MeV/c					
-1.0 to -0.5		Barrel	$\sigma/p \sim 0.05\% \times p \oplus 0.5\%$		100-150 MeV/c	$dca(xy) \sim 20/pT \mu\text{m} \oplus 5 \mu\text{m}$	
-0.5 to 0			Forward Detector		$\sigma/p \sim 0.05\% \times p \oplus 1\%$	100-150 MeV/c	$dca(xy) \sim 30/pT \mu\text{m} \oplus 20 \mu\text{m}$
0 to 0.5					100-150 MeV/c		
0.5 to 1.0		100-150 MeV/c			$dca(xy) \sim 30/pT \mu\text{m} \oplus 40 \mu\text{m}$		
1.0 to 1.5		$\sigma/p \sim 0.1\% \times p \oplus 2\%$	100-150 MeV/c			$dca(xy) \sim 30/pT \mu\text{m} \oplus 60 \mu\text{m}$	
1.5 to 2.0					100-150 MeV/c		
2.0 to 2.5					100-150 MeV/c		
2.5 to 3.0					100-150 MeV/c		
3.0 to 3.5					100-150 MeV/c		

*From YR 11.2.2 at  
arXiv:2103.05419*

- Additional features

- PID, bunch crossing timing info, ...

# Backup

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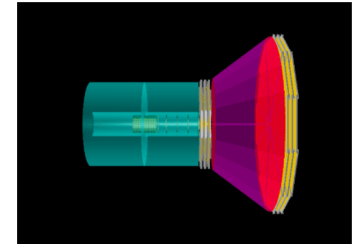
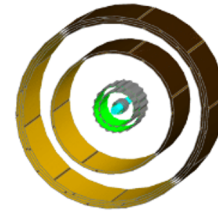
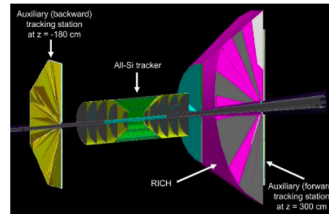
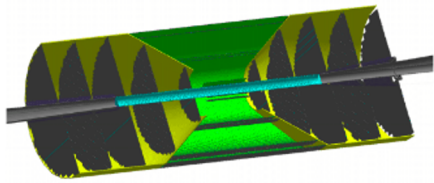
# Detector working group deliverables

## 1. Technology choice

- Identify no more than two options from the various systems and technologies that will be costed and integrated into full simulation framework.
- The choice will depend strongly upon scientific input, assessments of technical capabilities, available workforce and technology readiness
- Technology choices should be supported with simulation work.

## 2. Estimate of services, supports + active materials

- Required services, readout, and mech. supports could play important role in selecting technologies.
- Experts are encouraged to work with tracking working group to provide information



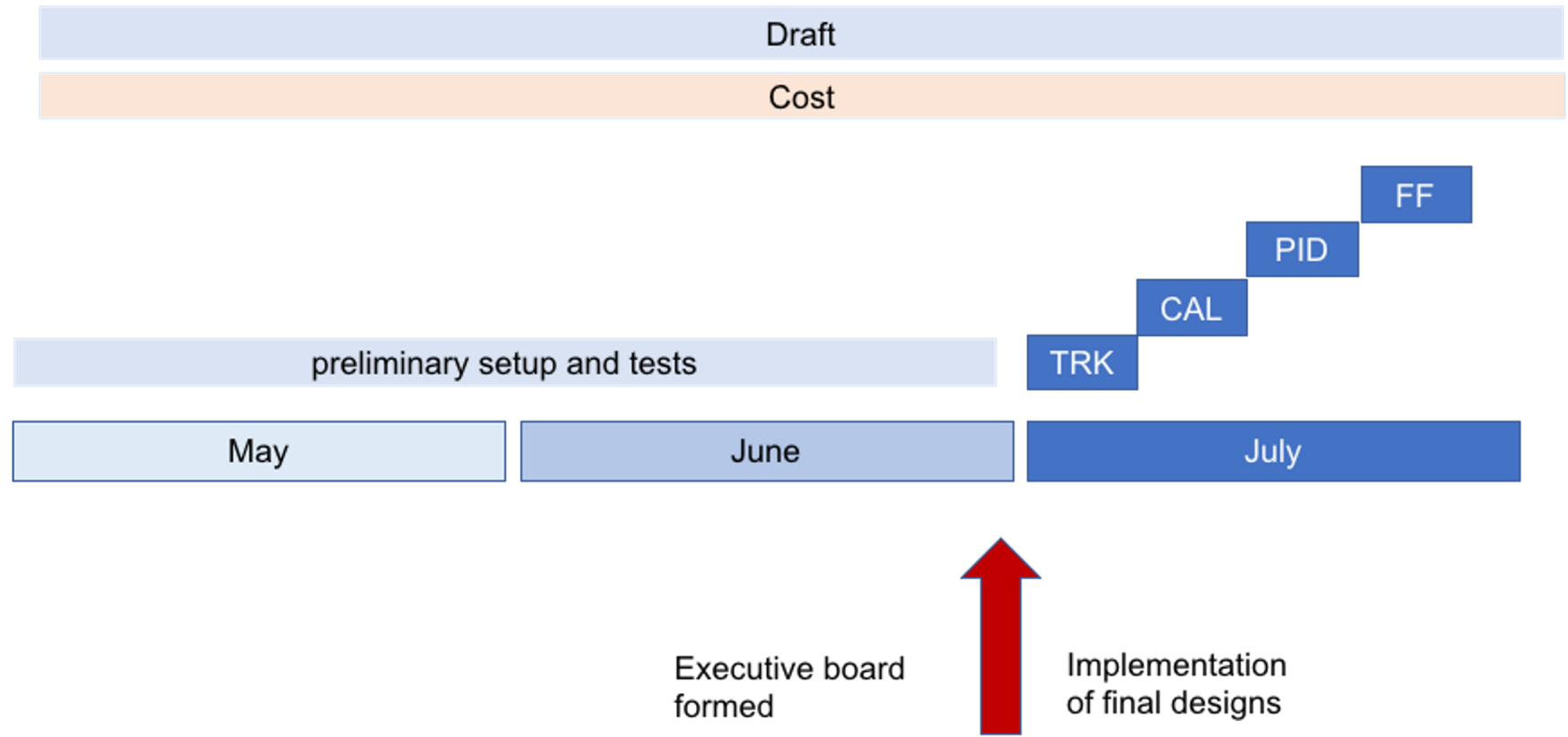
These are the most urgent items to address and will be the focus of the next few meetings

# Detector working group deliverables

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3. Implementation into the global experiment model
  - Integration group will be formed: member from each detector WG, experts on IR, physics, and engineers
4. Simulation of subsystems performance in the global experiment
  - Integrated detector concept will be implemented into full simulation framework (central DD4HEP-based development by the SWG)
  - Assess performance and quantify impact of active and non-active materials on the physics performance.
  - WG should assign someone to take lead on overseeing this is done accurately.
5. Costing of each sub-system
  - Costing group will be formed consisting of at least one member per detector WG and costing experts.
6. Consider what else the WG can contribute to help producing a winning proposal
  - Identify the number of anticipated readout channels, data rate, readout electronics used, etc.

# Timeline towards the proposal



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