

# Questions to ECCE Collaboration from Detector Advisory Committee

## Tracking

TR1) The proposed silicon tracker is based on the 65 nm MAPS technology currently under development at ALICE. What are the impacts on the silicon tracker design and its physics performance if ALICE has to fall back on 180nm technology?

TR2) Based on knowledge and operational experience from currently installed/operating silicon-based systems, estimate the number (or fraction) of dead channels to be expected in your proposed tracker (as function of time, if possible). Estimate the impact of this typical number of dead pixels/sectors on physics results. What fraction of the MAPS units will be active (versus passive balconies)?

TR3) The  $\mu$ RWell foils are a more recent technology; large installations on a 1m scale are proposed for ATHENA. Does there exist experience with long-term operation of such large trackers?

## Electronics/DAQ

EL1) Summarize (e.g., in a tabular form) the current stage of development of the readout chain of each individual sub-detector technology, and also of the DAQ system. Examples of development stages can include "R&D", "conceptual design", "pre-prototype", "full functionality prototype", "integration tests with detector", "ready for production", etc.

EL2) Provide a summary (e.g., in tabular format) of the specific R&D goals and development timescale for each individual ASIC, including each fallback option. For each ASIC, include estimate of when the decision needs to be taken whether to go with the baseline ASIC or the fallback option.

EL3) Describe the development plan and timeline for the customization and prototyping of electronics specific to each sub-detector concept.

EL4) For the various detector types, what are the requirements for precision and stability of timing signals delivered to front-end electronics? How will these requirements be addressed by the timing distribution system?

EL5) Describe possible staging options to the readout/DAQ/computing systems.

EL6) Provide the list of institutes with interest in directly contributing to the development of the  
a) different frontend electronics and different ASICs, for each detector technology;  
b) common DAQ components

### **Auxiliary Detectors**

AX1) Could you provide some more detail on how these detectors' costs compare to those estimated in the Yellow Report?

### **Costs**

CR1) When would decisions need to be taken on upgrade vs baseline technologies (for each decision)? What is the cost related to carrying the baseline development to those dates?