**Taskforce Weekly Plenary Meeting**
***Minutes and Actions, 12 May 2025***

**Meeting time:** 14:30 – 16:00 CET

**Zoom meeting room:**

[Zoom link](https://cern.zoom.us/j/61274255815?pwd=2fwGbaMrZAYmUfpUfMCjKwpoYzPCKd.1)

Attendees: All task force members

Chair: Fiodor Sorentino

**Key Takeaways:**

* Main and supporting documents need final updates and refinements this week;
* Technical annexes and external files to be organized and referenced consistently;
* Triangle configuration analysis to be completed, mirroring 2L approach where possible;
* Team to target having near-final versions ready by next Monday's meeting.

**Next Steps:**

* Authors to finalize remaining sections in extended document;
* Review and incorporate comments on current document versions;
* Organize and standardize technical annexes and external file references;
* Target near-final versions of both documents by next Monday's meeting;
* Schedule follow-up discussions on specific sections as needed (e.g., integrated towers).
* **Update on noise budget and science case**

***14:30-14:45 CET***

**Point presented by:** Ulyana Dupletsa and Valeria Sequino

**Point submitted for:** information

Background to be provided by the speaker.

**Summary of discussion:**

Ulyana provided an update on the final list of sensitivity curves, including the reference 2024 sensitivity and the new baseline design sensitivity. She discussed the intermediate cases for suspension and coating temperatures, filter cavity length, and worst-case scenarios for beam tube pressure, chamber pressure, and other parameters. Ulyana noted a small discrepancy between the reference 2024 sensitivity curves used in the first batch of results versus the latest version and explained the plan to rerun the analysis with the updated curves.

Steffen raised a concern about the feasibility of operating at 70 Kelvin for the mirror suspensions, noting the technical challenges with thermal conductivity at that temperature. Mikhail clarified that the 70 Kelvin case was included to parameterize the impact on noise, rather than representing a realistic technical solution.

Ulyana explained that the main document still needs to be updated with the results using the new design baseline, which will be available soon. The extended document will also need to be updated with the final tables and plots once the new analysis is complete.

**Takeaways:**

* New sensitivity curves finalized for 2L and triangular geometries;
* Slight discrepancy (0.04%) found between old and new 2024 reference curves at high frequencies;
* Results with old curve retained; new runs scheduled for updated curves;
* Main document updated with available results; full updates pending cluster computations.
* **Update on risk and flexibility analysis**

***14:45-15:00 CET***

**Point presented by:** Ghada Mahmoud

**Point submitted for:** information

Background to be provided by the speaker.

**Summary of discussion:**

Ghada provided an update on the risk analysis, noting that the main document will focus on a high-level summary, while the extended document will provide more detail on the risk register, design structure matrix, and penalty of change analysis. She highlighted key risk areas such as the periscope, suspension height, and fiber optic explosions.

**Takeaways:**

* Risk register and analysis mostly complete for 2L configuration;
* Triangle configuration analysis to mirror 2L approach where possible;
* TRL (Technology Readiness Level) study details to be added to extended document.
* Simplified flexibility analysis can be included too, showing the structure of rigidity matrix and evaluation of penalty of change for sample events
* **Update on civil engineering criteria**

***15:00-15:15 CET***

**Point presented by:** Jonathan Bratanata

**Point submitted for:** information

Background to be provided by the speaker.

**Summary of discussion:**

Jonathan summarized the civil infrastructure criteria and cost estimates, including the functional volumes and key cost drivers for the baseline, 2024 reference, and triangle configurations. He noted that the main document will focus on the high-level results, while the extended document will provide more detailed explanations.

**Takeaways:**

* Functional volumes and key cost drivers to be added to main document;
* 26.5% volume reduction and ~30% cost reduction achieved in new triangular design vs 2024 reference;
* Detailed impact analysis of major design changes (e.g., moving filter cavities) still needed.
* **Review of output documents and next steps**

***15:15-16:00 CET***

**Point presented by:** Fiodor Sorrentino

**Point submitted for:** information and discussion

Background to be provided by speaker.

**Summary of discussion:**

Fiodor outlined the plan to finalize the main document and supporting document by the end of the week, with a focus on incorporating feedback, finalizing the technical annexes, and ensuring coherence between the two documents. He encouraged all participants to review the current versions and provide comments.

**Takeaways:**

* External files to be listed in both main and supporting documents
* Team to decide on consistent referencing method (LaTeX labels likely)
* Output tables to be provided in CSV format and as PDF extracts in supporting document
* 3D detector layout models to be provided in standard formats (e.g., DWG)

***To do’s:***

* Design concepts for alternative designs (benches, soft suspensions) to be added
* Clean room specifications and tower access details to be incorporated, likely in detector layout section