

ETO Task force for ET detector layout - 16th weekly meeting

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Status of output documents

- **Deadline** for delivery to review team postponed to end of **Friday 23/5** (at 22:30)
- Minor comments from ETO directors
 - discuss triangle before 2L wherever applicable
 - delta -> triangle
 - Cost estimate: make clear this is just for internal use in detector layouting, not an ETO costing for ET
 - Same for risk analysis: make clear it's a simplified test for the sake of the study, official risk analysis for ET is done elsewhere
 - Dirty rooms besides noisy rooms?
- Current status of main document:
 - 64 pages, structure is very close to final, some details to be changed/added
 - Optical layout: IOO data to be checked?
 - Detector layout: access to critical towers? Noisy rooms?
 - Civil infrastructure: Key items from the design change that had high impacts
 - Science case: looking for output from calculations; can we add a few curves to the pipeline? Incorporate results during the review if computation is not ready by Friday.
- Current status of extended supporting document:
 - 107 pages, structure might need some reshuffling, several sections to be edited/completed
 - Cryogenic infrastructure: move from integrated towers to detector layout/technical infrastructure
 - Detector layout:
 - describe alternative configurations? In particular, double cavern
 - flexibility envelope?
 - Risk analysis to be completed?

Status of output documents

- Current status of technical annexes:
 - 2D drawings done
 - 3D models: Trimble links available (possibly move the ones for 2024 reference to background information), shall we include CAD or DWG files?
 - Output tables: a few missing
 - TRL table, risk register, DSM, POC tables done
 - Anything more? Plots?
- Some points deserving clarification:
 - Cross referencing between main and extended supporting document
 - Summary of main requirements on design parameters - add table and short explaining paragraph? E.g.:
 - size of larger mirrors (from optical stability, coating thermal noise, thermal aberrations)
 - Arm pipe tilt (from vertical thermal noise)
 - Access to a few critical towers
- Copies of current drafts on Gitlab for ETC comments are being updated daily
 - No feedback so far from ETC

Background information

- Terms of Reference of External Review Committee (pdf);
- ETO Task Force mandate (pdf);
- Optical layout 2024 document for triangle (pdf);
- Optical layout 2024 document for 2L (pdf);
- 2D drawing of optical layout 2024 for triangle (pdf);
- 2D drawing of optical layout 2024 for 2L (pdf);
- **Flexibility analysis of the ET-LF Squeezing Filter Cavities (pdf);**
- Detector layout 2024 document for the triangle (pdf);
- Detector layout 2024 document for the 2L (pdf);
- 3D model of 2024 detector layout for the triangle (trimble connect);
- 3D model of 2024 detector layout for the 2L (trimble connect);
- Trimble guideline (pdf);
- ESFRI proposal: 2020 CDR (pdf);
- Tunnel diameter requirements (pdf);
- Reference document for cryogenic system (pdf);
- LF TM suspension document (draft pdf);
- Suspension system classification (pdf) - completely changed in ETO Task Force work, highlight relevant sections;
- Science case: COBA paper (pdf);
- ET noise budget: sensitivity curve update (pdf);
- Civil Engineering criteria and Cost Estimation (pdf);
- **Guideline how to read the documents.**



Next steps

- We'll interact with writing tasks owners until Friday to finalise delivery to review team
 - general overview and consistency checks: FS + all writing task owners, help welcome by anyone in task force.
- Next week:
 - ET Symposium
 - no weekly meeting
 - task force parallel session on Monday morning
 - other talks in ETO parallel session on Tuesday and plenary session on Thursday
- No weekly meeting on June 2 (National holiday in Italy)
- Next weekly meeting on June 9 - focus on reaction to review team's feedback
- Likely at least one more weekly meeting on June 16