



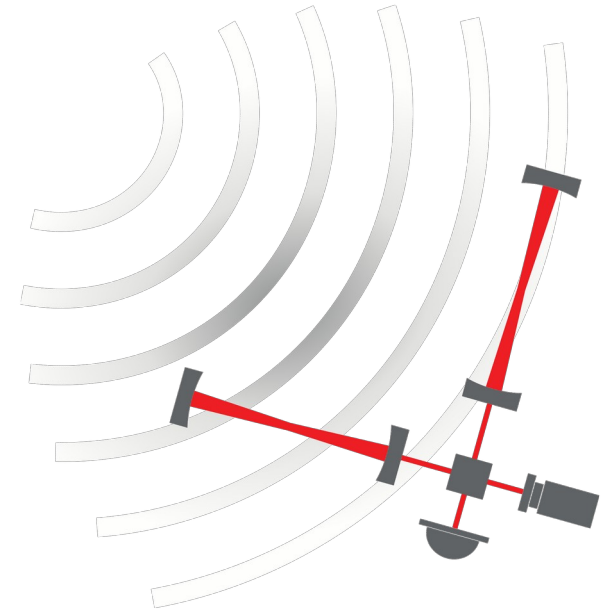
EINSTEIN
TELESCOPE

ET-COMPASS

Report on Task 2.3 activities planning meeting

Wed. May 6 - 9:15

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INFN- PD



Motivations

- Today, we initiated the preparatory work that is necessary to be ready for a rapid start-up of the ET-COMPASS project on January 2027.
- Task 2.3 is a good case to start with, since:
 - it's a complex task
 - its activities are tightly embedded in those that ETO is carrying out now and will have to carry out with high priority also in the coming years
 - it's important to understand the type of contributions and resources that might be of best value for ETO
 - but also, it's important that available competences the partners can offer are exploited at best
- Similar exercises will be planned in the coming months also for (most) of the other ET-COMPASS tasks.

Agenda

- Introduction (Mauro M.) [5']
- **The ETO vision** (A. Variola) [30']:
 - General strategy for cost and risk assessments for the ET project
 - Ongoing ETO C&R assessment activities for the geometry evaluation: goals, plans, challenges
 - Scenarios for ETO C&R assessment activities in 2027-8: updated scope and tentative work plan; most effective contributions that ET-COMPASS could provide
- **Competences and resources that the ET-COMPASS partners can provide for the task 2.3 activities**
 - IFAE (M. Martinez) [5']
 - MUL (R. Galler) [5']
 - UNIRI (S. D. Jovančević) [5']
- **Roadmap for getting ready to start the task activities in ET-COMPASS** (Mario M., Alessandro V.) [20']

The GCR Cost Estimate. Main assumptions

- **Costing site independent** – the goal is to have a **comparison** between the cost for the triangle and the 2L **independently from the site dependent factors**.

ASSUMPTIONS:

- Design maturity level, no project structure (WBS), short timeframe -> hardware cost drivers. **Methodology to be adapted**
- **GCR will not take into account safety cost** (if not integrated), missing a safety plan.
- **YES Integration costs when possible, where defined**. **Attention**, site independent so integration hardware in Euro, manpower in FTE, lifecycle in units (kw..)
- **Costing based on PBS**, What PBS? Vacuum Arm -> CERN. Detector -> task force use the integrated system PBS (next slides) This will allow to easier the possible estimation of the integration efforts and to assure the completeness of the items' lists.
- Lifecycle costs have also been requested. -> commissioning and operation. **Dismantling is not included** for many reasons.
- For the PBS we identified as **cost drivers : Nodes, Arm Vacuum, IT, Others (tbd), Lifecycle associated costs**.
- At present GCR is **not supposed to provide any quotation about civil and technical infrastructures** that are in the Host Consortia attribution. A communication channel has been opened.
- **It is not a design to cost or trade off analysis**: cost is not a constraint or an optimization parameter. We will work with the 'dummy list' of elements

Summary

At the end of this exercise what we have?

- 1) A well-defined detector PBS based on integrated systems
 - 2) A reviewed version of the IT PBS
 - 3) A WBS skeleton proposal for Detector, IT, CI and TI...still work to be done
 - 4) An underestimate cost estimate for the detector, IT, Interfaces, lifecycle
 - 5) HC will have costs for CI and TI (when final version?). Release Bid constrained
 - 6) We will not anyway have a project structure
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- With this what we can do in COMPASS?

COMPASS: Two scenarios

- 1) Restart the whole process to have a rigorous (standard) cost estimate based on a WBS
- 2) Further develop the integrated system PBS, defining also the interfaces and maintain the present cost estimate methodology. WBS will be harmonized later

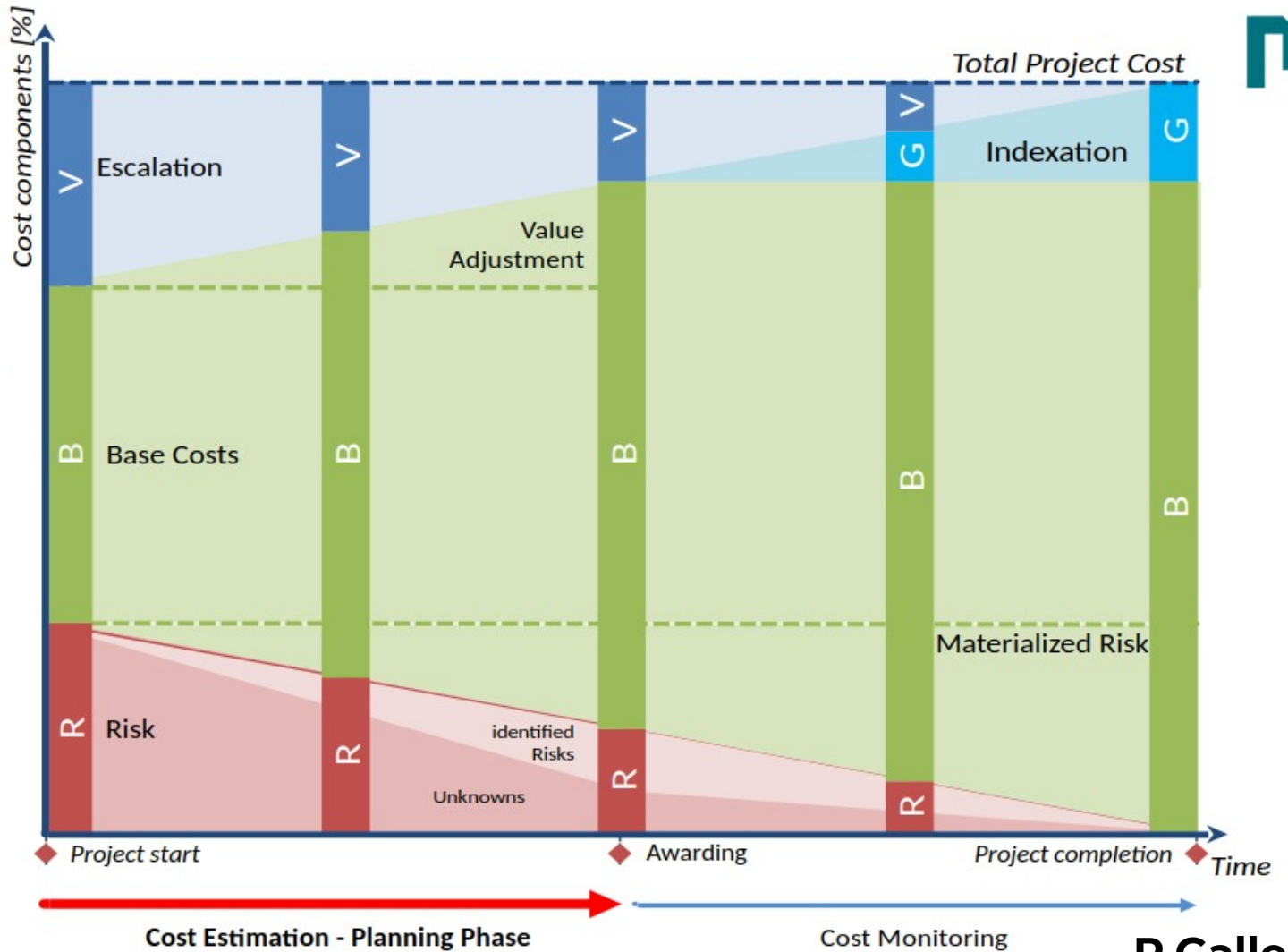
Concluding...How to proceed?

- We have to start to discuss what model we want to apply...and decide, we have 8 months to be ready!
- Whatever decision needs a rapid feedback to stakeholders to engage the possible resources, to be ready to start with a good plan. This must be coherent with the present context!
- We must be operative, so free to manage activities and resources across the different organizational bodies.
- We cannot proceed haphazardly. These are the only possible scenarios, and the course of action must be discussed and APPROVED by ETO.
- We have to work as a single body, respecting organizational structures, involved stakeholders, existing processes and procedures and carefully considering the work already done.

Cost components

Schematic illustration of cost components to determine forecasted project costs

Identified risks + unknown = risk costs (R)



R.Galler

Competence and Resources

- IFAE has a strong engineering department and close connections to ALBA
 - The idea is to engage an IFAE senior system engineer with a limited dedication for consulting
- IFAE has been tentatively allocated sufficient funds from Madrid (Ministry) to hire personnel in 2026 to reinforce the ET-COMPASS T2.3 activities in the second half of the year
 - We should be in the position to hire a full dedicated person now
 - Money could be also used to reinforce the competences with consulting services
 - Intention would be to hire — in consultation with A. Variola — a young system engineer to help in surveying ongoing cost estimates and methodologies, developing guidelines for integrating these into a preliminary Project Breakdown Structure (PBS)-based cost management plan. He/she would also contribute to risk assessment.
- But is unclear to us is the link with the existing ETO efforts on the Geometry Comparison and the work done by the SiSeC
 - We hope to get a better picture in this meeting

ET-COMPASS can provide...

- **competences in Civil Engineering, applied to tunnel design/construction**
 - Montanuniversität Leoben (Robert Galler)
 - University of Rieka (Sanja Dugonjić Jovančević)
 - cost/risk estimates in this sector are now in the hands of the Engineering Companies working for the Host Consortia
 - however there can be
 - possible contributions in the coming months to help ETO in pursuing the goal of unifying cost methodologies
 - involvement in examination and exploitation of the cost assessments presented by the Host Consortia in their bids (from mid-2027)
- **competences in mechanical engineering** (part time) and **system engineering (full time)** already from mid-2026 to strengthen the ETO team working on cost assessments

Next steps

- **Launch periodical meetings** to align ETO — ET-COMPASS — Civil Engineering
 - compatible with ETO personnel availability [Spring/Summer]
- **Decision by ETO on PBS vs WBS** [Summer]
- Organize a **kick-off meeting of the T2.3 activities** [second half of October 2026]
 - Important documents should be ready by that time:
 - Report of the ETO Geometry Comparison as delivered to BGR
 - Report from the SiSeC as delivered to BGR
 - Align the plan with ETO
 - Mapping of available resources in ET-COMPASS
 - Decide on the need for additional resources or consulting services
 - **Prepare a tentative work plan for the first half of 2027**, updating the milestones and deliverables schedule if necessary — to be re-evaluated in summer 2027