

## dRICH costing



What you find in current version (20211024) [ very close to final ]:

- sensors area made consistent with DD4hep 3.3 m<sup>2</sup>
- # of channels according actual dimension of a target tile (Hamamatsu 8x8) taking into account dead space (317440)
- aerogel cost significantly updated / consistent with DD4hep (5 m<sup>2</sup> – 4 cm thick)
- gas cost capped at 3 fillls (+ recollection system), then we assume on M&O costs
- mirror area updated consistently with DD4hep 15 m<sup>2</sup>
- cooling system total cost from LHCb and assigned dRICH share at 57% (based on power share) the rest should go to eRICH
- tentative timeline targets end of construction by 12/2029 → early CD-4a [Q3-2030] (so 1 year and half contingency for the much more likely CD-4a [Q3-2031]). For a more accurate timeline much more information needed, by ATHENA, by the project and from the outcomes of R&D
- R&D & prototyping reshuffled and made consistent with requests presented in eRD102 (dRICH) and eRD110 (SiPM part only)
- many other items fixed (split lines for material/labour, improved note field, removal of vendor quotes, etc.)

### Current overall numbers:

Total cost: 14.0 M\$ (excalated by Mr Excel at 17.3 M\$)

Total material direct costs: 9.2 M\$. Total labour costs: 4.8 M\$

Project: 4.9 M\$ (3.6 M\$ material, 1.3 M\$ labour)

In-Kind: 9.1 M\$ (5.6 M\$ material, 3.5 M\$ labour)

Sharing costs between project and in-kind (for material/direct costs) reflects non-binding INFN EoI envelope (for dRICH "somewhere between 5-6 M\$") → this translates currently in request to project about certain items (mirrors & mechanics & gas system mainly) + labour costs.

*Thanks to many people ("expert opinions") & a special thank to Chris!*

P. Antonioli/on behalf of dRICH