

## Minutes of the 05.03.2015 meeting: discussion of the Work Package “Alternatives to liquid fluorocarbons for detector cooling applications at CERN”

Present: M. Battistin, E.Thomas, P. Gorbounov

### Context:

- The draft WP document v. 0.1 had been prepared for the first round of checking.
- M.Taborelli (TE-VSC-SEE) announced that, following the discussion within the section and the group, his team won't be able to play any active role in the project. This requires the current version 0.1 of the WP to be modified, as it was based on the implicit assumption that all principal chemical studies (pre- and post-irradiation) will be performed by the TE-VSC-SEE team.
- The first “round table” meeting with the interested groups (ATLAS, CMS) was held at PH-DT on 27.02.2015.

### The minutes

1. E.T. proposed to remove M.Taborelli from the approval list and add S.Bertolucci, leaving placeholders for the signatures on behalf of EN and TE.
2. M.B. suggested to start contacting external chemical labs; proposed ILK (Dresden), the group that made the initial studies for C6F14 in the 2000's and collaborated with the DCP .
3. P.G. informed about the outcome of the 27.02.2015 meeting with ATLAS (represented by L.Zwalinski and colleagues) and CMS (represented by R.Tropea). L.Z. is determined to start an independent study of Novec 649 as a drop-in replacement of C6F14 in the ATLAS Thermosyphon cooling system. A CERN fellow (Dina Giakoumi) was appointed to supervise this project and the budget has been allocated (*Remark:* the draft proposal [1] was distributed by D.G. on 6.03.2015).
4. MB opined that it would be more appropriate to coordinate the N649-related activities within the DCP.
5. E.T. remarked that, given the short time frame of the present WP and the imperatives imposed by the SciFi upgrade schedule, the focus of the present WP should be on low-radiation dose applications.
6. We agreed to allocate a permanent time-slot for short weekly meetings on the WP (Mondays 9 am at MB's office). *Remark:* PG volunteers to manage the agenda and minutes.

### **Executive summary**

1. E.T. (+M.B.) will fix an appointment with S.Bertolucci to decide on the implementation strategy of this WP, with or without participation of CERN chemists. It will be essential to secure the support of the departments involved (PH, EN, possibly TE) and assign an explicit priority (high, medium, low) to the project. -- ASAP
2. P.G. will prepare an updated version of the WP document for this appointment . – done, [2]
3. P.G. will prepare a detailed summary of the characterizations and analyses to be made by the chemical lab for the purpose of this WP. – ASAP (possibly, by 9.03)
4. As soon as this summary is ready, M.B. will contact ILK and negotiate their possible participation in this WP, using this summary as the starting point. In parallel, P.G. will identify and contact possible Swiss contractors, both academic (EPFL, UniGE, ...) and industrial. – ASAP, see p.3

5. M.B. will meet with leading members of the DCP club to discuss coordination of the N649-related activities and interaction of the interested parties. Also: cost sharing (e.g. for Novec649 procurement and a common fluid pool), constructing a common test bench with typical chiller, pump(s), valves, tubing, seals etc, rather than several dedicated test setups for material compatibility studies. -- ASAP
6. P.G. will try to meet with M.Taborelli, in order to negotiate a limited participation of his section in the WP activities, for example: participation in the WP meetings as consultants or observers, preparation of the containers (cleaning?) and fluid samples for irradiation, occasional consultancy in matters of chemistry. – Week 9-16.03 (confirmed by M.T.)

## References

[1] The draft proposal for Novec 649 in the ATLAS Thermosyphon and Minutes of the 27.02.2015 meeting, [https://twiki.cern.ch/twiki/pub/LHCb/C6K/Dina\\_Giakumi\\_Proposal\\_6.03.2015.pdf](https://twiki.cern.ch/twiki/pub/LHCb/C6K/Dina_Giakumi_Proposal_6.03.2015.pdf)

[2] The draft WP document, version 0.2 (5.03.2015),  
[https://twiki.cern.ch/twiki/pub/LHCb/C6K/EDMS\\_work\\_package\\_0.2.pdf](https://twiki.cern.ch/twiki/pub/LHCb/C6K/EDMS_work_package_0.2.pdf)