

Architects Forum Meeting

Date / Time: 02 April 2020, 14:00

Agenda: <https://indico.cern.ch/event/892102/>

Present:

Remote: P Buncic (EP-SFT, chair, minutes), Axel Naumann (EP-SFT,ROOT), Gerardo Ganis (EP-SFT, FCC), Andre Sailer (EP-LCD), Pere Mato (EP-SFT), Walter Lampl, Jakob Blomer (EP-SFT), Michal Simon (IT-ST), Graeme Stewart (EP-SFT, HSF), Charles Delort (IT-DB), Giulio Eulisse (EP-AIP), Alberto Di Meglio (CERN openlab), Edward Moyse, Gabriele Cosmo (EP-SFT)

Excused:

Next meeting: 07 May 2020

Announcements and upcoming events

Draft minutes of the last meeting can be found [here](#).
Minutes of the previous meetings can be found [here](#).

21-25 September 2020	HSF/WLCG Workshop @ Lund - meeting has been provisionally rescheduled for 21-25 September 2020, but this will be confirmed later (dependent on COVID-19 situation) We are planning a short <i>virtual Lund</i> meeting, 11-13 May on New Architectures, Portability, and Sustainability . 2 hours per day, 16-18h to be TZ and concentration span friendly.
9-11 June 2020	ROOT Workshop @ Fermilab Postponed until 2021
14-16 July 2020	Xrootd Workshop in Ljubljana
1-3 February 2021	CernVM workshop

SFT Line Management

- Nothing to report. The whole group is working from home in confinement. The impression I have is that productivity is as good, if not even better, as working in the offices.

Report from the SFT Projects

ROOT	<ul style="list-style-type: none">● 6.20/04 released; 6.22/00 scheduled for May with release candidate this month● Workshop postponed until 2021● Almost unaffected by confinement● Hoping for solution to CERN subsistence issue
Simulation	<ul style="list-style-type: none">● The new development release of Geant4, including the developments of the last month was deployed this week and is installed on CVMFS at CERN.● A Geant4 Technical Forum was held on March 23rd, where the 2020 Geant4 program of work was discussed. There've also been reports from the experiments, about the validation going on the latest Geant4 release 10.6, and a request from ALICE for having implemented treatment of hyper-tritons in the simulation: https://indico.cern.ch/event/895400/timetable/#20200323.detailed The 2020 work-plan is available on web: http://cern.ch/geant4/support/planned_features● The Advanced Geant4 course organised by the CERN Technical Training and originally scheduled for end of March has been finally postponed to late September.
CernVM	<ul style="list-style-type: none">● Preparing CernVM 4.4 (new versions of condor, shoal)● Ongoing work with LHCb on setting up the nightly builds with multiple publishers (gateway setup)● Expect CernVM-FS 2.7.2 patch release in April 2020● Ongoing work on the next CernVM-FS feature release, including re-engineering of the server code
SPI	<ul style="list-style-type: none">● LCG_97, based on ROOT v6.20/02, was finally released on March 25th for the core

layer and the bulk of platforms. These include Python 2 and Python 3 builds, and a Python 3 build for cuda10. Three layers dedicated to ATLAS, FCC and LHCb were ready at same time.

- Clang10 build available since last Friday; included in dev4.
- Started looking at CentOS8

Related Projects & IT

Xrootd

- 4.11.3 - released last week: XrdHttp: use Mozilla cipher list (OpenSSL 1.0.2+), Python: make rpath relative to the bindings, proper debian package naming, few adjustments allowing EOS to support HTTP TPC
- 5.0.0 RC2 - released this week: we warmly invite everyone to test (especially encryption!)
- I noticed there are proof class dependant on old XRootD client (XrdClient) that is deprecated and will be discontinued with R5, e.g.:
<https://github.com/root-project/root/blob/master/proof/proofx/inc/TXSocket.h>
- 4.11.4 - will be released shortly as there are some new important fixes and enhancements for Alice (error recovery with Metalinks) and OSG (XrdHttp)

HSF

- Meetings are all virtual these days, but most WGs are quite active. LHCC [Common Tools and Community Software document](#) is ready for comment and review. There will be a [review discussion meeting](#), 16 April.

CERN openlab	<ul style="list-style-type: none"> ● oneAPI workshop last week was turned from physical to one-day online training. Discussions with Intel on possible projects going on, proposals being collected ● Many discussions on the Summer Students Programme, so far no final decision taken, but the same decision will apply to all Programmes. Considering alternatives. ● A session of the R&D Steering Committee will take place next week. Helge sent around an announcement. Mandate of the Committee and future activities being discussed ● Quantum Technology Initiative update: a proposal to assess whether quantum technologies might have a role in HEP and how CERN should take part is being prepared. General principles have been presented (most recently at the Scientific Computing Forum) and approved, a more detailed proposal must now be prepared together with the community
IT-SC-RD	<ul style="list-style-type: none"> ● Reminder: we have two positions open in our group (one LD staff and one fellow). We will still accept applications for two more weeks. <ul style="list-style-type: none"> ○ Software Engineer (staff) : https://smrtr.io/3Xv8N ○ Software and System Performance Analysis Specialist (fellow) : https://smrtr.io/3W-H5 ● Generators/GPU: progressing in prototyping a port of MadGraph to GPUs, in collaboration with a MG developer and a team at Argonne. Solved a few memory issues in matrix element calculation, will try some performance comparisons between GPU and CPU. MG developer is working on integrating code upstream in the automatic code generation engine. ● Generators/WG: integrated WG contribution in the HSF document for LHCC, now

	receiving feedback from the wider HSF community. In parallel, working on a longer version in overleaf as a standalone arxiv or paper.
EP R&D	<ul style="list-style-type: none"> Will recruit two fellows, one for the analysis project and one for the simulation project in this round.

Stakeholders feedback	
ALICE	<ul style="list-style-type: none"> Starting O2 builds for Centos 8.
ATLAS	<ul style="list-style-type: none"> Trying to migrate to LCG97 and layered stack. Will need to request _ATLAS_2 soon
CMS	<ul style="list-style-type: none">
LHCB	<ul style="list-style-type: none">
CLIC	<ul style="list-style-type: none"> Creating iLCSoft installation based on LCG_97 to have consistent compilation usable with Gaudi in view of moving to Key4hep
FCC	<ul style="list-style-type: none"> Start replacing HEPPY (CMS, fully Python based) with RDataFrame for TTree reduction and final analysis; concepts/technology later usable for Key4hep

- Rebuilding FCCSW against LCG_97_FCC_1

Discussion summary

There were no comments to the minutes from the meeting on 05/03/2020 which are now approved.

The SFT project presented a short status report summarized in the respective sections of this document. In spite of confinement, the work in projects is progressing well. Graeme announced the first version of HSF input for the LHCC review. Comments are expected and will be resolved in the live document, in case if there are controversial points, they will be highlighted and discussed in the meeting before formal submission of the document.

Alberto mentioned the forthcoming IT R&D Steering Committee that was scheduled for the 2nd week of April saying that the mandate of the Committee and future activities will be discussed. Since in the past only Techlab activities were discussed, the question was raised how is the mandate of this committee going to change? Alberto pointed out that the original mandate included Techlab and openLab R&D activities.

There was nothing new to say on QC initiative, he will give a status report to GDB next week and invite people to check the presentation. At present, the project budget assumes funding for 4-6 doctoral students for 3 years plus budget for hardware resources, starting modest in the first year and then ramping up. This was discussed with EP management and some individuals who expressed interest in the project. It was planned to organize the Workshop that was meant to be the place to get wider input from the community but that had to be postponed in the current circumstances. Alberto agreed to present the QC initiative to this forum in one of the upcoming meetings.

There were no comments to the reports from the experiments (LHCb and CMS were not present). Next meeting will be on May 7th where we expect to hear from CMS about their plans for the future (TBC).

Action items

