Follow-up on the Focus Session on Analysis Facilities held at the 154th LHCC in June 2023

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Agreed with: LHCC and HL-LHC sw & computing panel

Context

A focus session on Analysis Facilities has been organized during the 154th LHCC week, where the current R&D work happening within the community and discussed in the HSF Analysis Facilities Forum has been presented. The LHCC reported the following:

- The HSF Analysis Facilities Forum has focused on the technical building blocks that can make the user experience more productive. Novel concepts of Analysis Facilities, integrating interactivity, scalability (off-load) and Machine Learning tools are being built.

- The LHCC **recommends** that experiments engage in the process of developing and defining the structure of the future Analysis Facilities and requests they produce a document which defines the use cases in order to establish realistic benchmarks. This process should be coordinated with the HL-LHC Computing and SW review panel. The document is expected to be regularly updated in the process towards HL-LHC.

Charge

To follow-up on the LHCC recommendation cited above, the experiments, the sites and the HSF Analysis Facilities Forum must engage in a dialogue towards defining use cases and establishing realistic benchmarks for Analysis Facilities. The LHCC is charging WLCG to oversee this continuous process and to report regularly to the LHCC on the progress and steps taken as described below.

1- Establishing a list of questions

Analysis Facilities is a broad topic. The use cases and the expectation of the experiments, and of the analysers may evolve over time. The scope and the expected content of the document to be provided by the experiments must be clearly defined. To this end, a list of questions must be defined first that seek to define the expectations from experiments for Analysis Facilities. The questions, to be answered by experiments, must be picked such that the answers are useful for sites and are representative of a broad spectrum of analyses and analysers. The list of questions might evolve in the future.

The LHCC charges WLCG with establishing such a list. This process will be iterative and must involve the HSF Analysis Facilities Forum, the sites and the experiments.

The monthly GDB (Grid Deployment Board) meetings of WLCG could be a place for the relevant discussions to occur, but it is up to WLCG to establish the appropriate mechanism.

A first list will be established by the June 2024 LHCC meeting and presented by a WLCG representative at the LHCC to the LHCC for comments.

2- Producing the documents

A document (one per experiment) with the replies to the agreed questions will be required from ALICE, ATLAS, CMS and LHCb starting in November 2024 for an initial review by the LHCC.

These documents will be made available for the sites which are engaged (participating in the HSF Analysis Facilities Forum) or might engage in the future (current WLCG sites) in providing Analysis Facilities for the analysis of data from the LHC experiments.

These documents will be updated in synchronization with the updated list of questions on a yearly basis.