Report on Value of non-traditional resources

Noting that:

- Until now WLCG has estimated the value of compute resources with an agreed set of benchmarks, assuming a basic underlying architectural equivalency between offered resources. This has enabled the use of a single benchmark (Currently HEP-SPEC06) to be used to value the pledges and to account for the delivered resources;
- The WLCG is likely to be offered non-traditional architectures in future as part of the pledged resources in some countries;
- The most likely types of resource to be offered in the near term will be various types of GPU, and HPC systems (which may have non-X86 CPU, may have GPU);

Charge

The Management Board requests to the benchmarking and cost modelling working groups to work together to address the following questions:

- How can we benchmark and account for the value of such new resources?
    - What are the relevant units?
    - Could HS06 provide an indicator or is something more appropriate required?
- Do we need a benchmark per workflow(per experiment)/per architecture?
- What would be good enough given that there is today an uncertainty of perhaps 10% or more on current benchmarks for different types of work?
- Can we use such resources for all workloads, or should we explicitly state to the providers that such new types of pledge are only cost effective for a specific set of workloads (e.g. MC, etc.)?

Timeline:

- We would like a first proposal with some background and justifications for the October RRB, which would imply a first report is needed for September 2019.