

ECCE Computing Plan

first comments

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My Thoughts

Scope of document

- Does 'Computing' include the development of software for reconstruction and simulation? 'yes?'
- Where do we draw the boundary between DAQ and Computing?
 - Streaming readout is complicating the picture
 - I like the definition: it fails and the detector cannot take data == NOT computing project
- Computing is build late in the game because the landscape develops rapidly: uncertainty and contingency need to be build in and what are the core pieces we need to define?

Intent of the document

- Where does our budget come from and what do we need to show?
- Are we interested in a conservative or aggressive cost estimate?
- How are we including human resource?

My Thoughts

Comparison points

- It would be good to be able to connect with experience from existing experiments: LHC and RHIC
- A lot of studies of future computing and experience for all kind of questions we have exist

Basic computing/software

- How much storage space do we need (Disk and Tape)?
- How much processing power do we estimate and what type?
- Important items
 - Limited knowledge of detector design and reconstruction software
 - Can we benefit from existing software: sPHENIX, ATLAS (BNL) or others?
 - How many reco passes of the data? Calibration/Alignment plan?
 - How much Monte Carlo needs to be available?
 - Do we need distributed computing?
 - How many copies of data? Anything special for analysis?

Proposal

Online

- Only quotes data rates: we need **event rates** and separately **event sizes** each with uncertainties
- Pure data pushing performance is of course enough for storage, but not for CPU time
- What part of this is really relevant for the computing and software proposal

Offline

- A lot of detailed information is given on process and procedure but number of reco passes and data formats and potential reduction over time not addressed
- Key information comes very late in the document as a summary

Proposal

AI section

- Machine Learning for the design of the detector is not traditionally a computing plan item
- AI should be an essential tool for, trigger, data reduction, data reconstruction, and simulation
- Also in analysis it will play a big role
- Propose to absorb this as a paragraph in the intro and make reference in the proposal where appropriate
- Separate note on AI and detector design?

Overall comment

- Balance between proposal scope and amount of detail needs work
- Leading off with our data processing experience and developing numbers from there would be my recommended strategy
- event rate and size are important so we can easier react to updates