200806 - SCD Projects Meeting - CMS report

- ESnet requirements review
  - 3 documents, deadline August 14
    - #11: CMS
    - #12: Operations, tools, etc. (meant to be joint with USATLAS, agreed with Paolo and Kaushik to first write them separately)
    - #13: HL-LHC (meant to be joint with USATLAS, agreed with Paolo and Kaushik to first write them separately)
  - Considering 3 time periods:
    - now (2020-2021)
    - Run3 (2022-2024)
    - Run 4 (2028-2030)
  - ESnet already scheduled meetings with us on Aug. 17 and 27 to talk about the documents
- U.S. CMS budget for 20201
  - Finalizing scrubbing with all the WBS areas
  - Working on
    - M&S spending for Fermilab and Tier-2 facilities
    - Effort table
    - Milestone table
    - Performance goal table
    - Risk table
  - Approach:
    - Associate all effort to either milestone or performance goal
- CMS resource request for 2022 draft available for collaboration internal review
  - Lower than planned before, because of
    - 2021 will not have data taking and resource request was not changed (pre-buy)
    - Pileup in 2022 will be significantly lower than anticipated (35 now vs. 55 planned)
  - But data taking rate is higher by 300 Hz ➜ 1.3 kHz
    - 100 Hz Long-lived particle triggers
    - 100 Hz higher center-of-mass energy
    - 100 Hz commissioning of new detectors
  - CMS also plans for significant parking and scouting activities, but these stay physically at CERN.
- CMS sees evidence for the higgs boson decaying into muons
  - http://cms.cern/news/cms-sees-evidence-higgs-boson-decaying-muons
  - Measuring the interaction of the Higgs boson with the muon, with a mass nearly two thousand times smaller than that of the top quark, is the next experimental

frontier. Doing so will allow examining the Higgs field interactions with particles belonging to a different generation for the first time, and at a so-far untested mass scale.

- CERN press release about CMS and ATLAS seeing evidence for higgs boson decaying into muons
    - https://home.cern/news/press-release/physics/cern-experiments-announce-first-indications-rare-higgs-boson-process