Presentations and Document Overview for the August 25, 2021, Annual Review of the NSF MREFC CMS HL-LHC Upgrades

This document provides a brief overview of the documents and presentations prepared for the first annual review on Aug. 25, 2021, of the CMS NSF scope HL-LHC upgrades. The main charge questions addressed by the documents are indicated, e.g. [Ch 3c].

Presentations (each presentation indicate the charge questions addressed in the slides)

* Project Overview (A. Ryd)
* Risk Analysis and Covid-19 (L. Taylor)
* Systems Engineering and QA/QA (K. Smolenski)
* BCAL Progress (C. Jessop)
* Muon Progress (A. Safonov)
* TFPX Progress (K. Ecklund)
* Trigger Progress (K. Ulmer)

Project Plans

* NSF Project Execution Plan – This version is updated with respect to the FDR version to respond to recommendations and comments from the NSF EVM certification prior to starting the award on April 1, 2020. This version was used in the terms of the cooperative agreement. [Ch 2a]
* Key Assumptions – This version has minor updates to reflect, e.g., updated escalation rates currently used by the project.
* Cost Estimating Plan – FDR version
* Quality Assurance Plan – Minor updates to plan and more specific plans for L2 area QA/QC. [Ch 2d]
* Systems Engineering Management Plan – Minor updates with respect to FDR version
* Project Organization Charts – With updates to the project organization since FDR
* Configuration Management and Change Control Plan – FDR version [Ch 2a]
* MREFC SOWs for FY2020 – The SOWs for subawards in FY2020 [Ch 2a]
* MREFC SOWs for FY2021 – The SOWs for subawards in FY2021 [Ch 2a]
* NSF Covid-19 Rebaselining Guidance – Guidance from NSF how to handle Covid impacts and plans for baselining.
* Abbreviations and Acronyms – List of commonly used acronyms in the project documents.

Scope

* Summary of Scoping Options – Updated with current schedule. [Ch 2c]
* Work Breakdown Structure – FDR version

Technical

* Science Goals and Requirements – FDR version
* 402.3 Barrel Colorimeter – Requirements and Interfaces – Minor updates.
* 402.5 Muons – Requirements and Interfaces – Minor updates.
* 402.7 TFPX – Requirements and Interfaces – Minor updates.
* 402.9 Trigger – Requirements and Interfaces – Updates reflecting CMS trigger TDR changes.

Cost

* BoEs – Basis of Estimate – Main updates in Trigger BOEs to reflect TDR updates
* Control Accounts and Chargeable Task Codes – FDR version

Schedule

* Project Schedule – Summary views – Updated for current schedule
* P6 Schedule (Gantt) – Updated for current schedule

Risk and Covid-19 Modelling

* Risk Register – Latest risk register as of July 1, 2021. [Ch 2c]
* Risk Management Plan and Contingency Analysis – Updated cost and schedule MC following updates to risk register and the baseline schedule including implementing Covid-19 impacts. [Ch 2c, 3a]
* Covid-19 impact modelling – This document describes the project’s approach to modelling the impacts of Covid-19. [Ch 3a]

Change Control and Reporting

* Monthly Reports – The monthly reports to NSF. [Ch 2a]
* Baseline Change Control Log – The BCR log. [Ch 2a]
* NSF MREFC Baseline Change Requests – The BCRs. [Ch 2a]

CMS Documents

* TDR – the Phase-2 Upgrade of the CMS Tracker
* TDR – the Phase-2 Upgrade of the CMS Barrel Calorimeters
* TDR - the Phase-2 Upgrade of the Muon Detectors
* TDR – the Phase-2 Upgrade of the CMS Trigger

Previous Reviews

* NSF Final Design Review Report. [Ch 1a]
* Response to FDR Recommendations – A summary of our responses to the recommendations from the FDR. [Ch 1a]