



# HL-LHC CMS Upgrades

## **L2 prep for the DOE Risk Management Board on the 24<sup>th</sup> of February**

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17<sup>th</sup> February 2021

# L2 prep for the DOE Risk Management Board

*RMB for DOE scope risks, Wed 24th Feb, 11:00 – 13:00 CT*

- **Prior to the RMB meeting:**
  - Full details of each risk (1 risk per page) have been extracted from the Web risk register in MS Word format (see next slide)
    - This MS Word file is attached to this Indico agenda
  - Each L2 should review each of their risks one-by-one with their team and annotate each risk in the MS Word file, for example:
    - *“Risk reviewed: need to update P ( $\rightarrow$  x%), cost ( $\rightarrow$  \$y), risk owner, etc.”*
    - *“Risk reviewed: need to improve description of risk mitigations”*
    - *“Risk reviewed: risk can be retired because ...xxx”*
- **During the RMB meeting:**
  - For each risk, the **Risk Owner** will speak to their annotations
  - RMB will give its feedback and then approve changes
- **After the RMB meeting:**
  - L2s will ensure all their risks are updated in the web risk register according to the proposed annotations and the outcome of the RMB

# Example of an annotated risk

RT-402-2-66-D OT - BTST: problem with the outside manufacturing partner of the BTST

NEW: to be reviewed, updated, approved

<b>Risk Rank:</b>	3 (High)	<b>Scores:</b> Probability : 3 (M) ; Cost: 3 (H) Schedule: 2 (M))	<b>Risk Status:</b>	Proposed
<b>Summary:</b>	An outside manufacturing partner will manufacture the BTST in collaboration with Purdue CMSC. Given the early stage of the project it is not yet certain that partner is able to finish the project within the tolerances required. The existing market survey done by Purdue CMSC in Fall 2019 to Spring 2020 has revealed only one more viable partner. However, the manufacturing method and preliminary cost represent a risk to the project given a change in procedure and considerable higher costs.			
<b>Risk Type:</b>	Threat	<b>Owner:</b>	Andreas Jung	
<b>WBS:</b>	402.2 OT - Outer Tracker	<b>Risk Area:</b>	External Risk / Vendors	
<b>Probability (P):</b>	25%	<b>Technical Impact:</b>	0 (N) - negligible technical impact	
<b>Cost Impact:</b>	PDF = 1-point - single value Minimum = k\$ Most likely = 3,500 k\$ Maximum = k\$ Mean = 3,500 k\$ P * <Impact> = 875 k\$	<b>Schedule Impact:</b>	PDF = 3-point - triangular Minimum = 1 months Most likely = 3 months Maximum = 6 months Mean = 3.33 months P * <Impact> = 0.8 months	
<b>Basis of Estimate:</b>	The market survey performed in Fall 2019 to Spring 2020 only leaves one alternate outside vendor to carry out the manufacturing task. Currently the cost for that process is estimated to be around 4.3 million so about 3,300k\$			Big impact – needs more detail
<b>Cause or Trigger:</b>		<b>Impacted Activities:</b>	BTST structure as a whole <u>Need risk hook info</u>	
<b>Start date:</b>	16/Nov/2020	<b>End date:</b>	31/Dec/2024	
<b>Risk Mitigations:</b>				
<b>Risk Responses:</b>	Need to provide text describing risk mitigations (in baseline) and risk contingency response plans			
<b>More details:</b>				