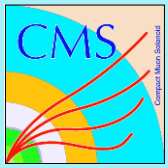


ME2/1 - GE2/1 GEM-CSC Interface

USCMS Muon Upgrade Meeting
December 7, 2016



GE2/1 planned for installation in LS3.

Design is *roughly* similar to GE1/1

- Two independent detectors sandwiched together to form a “superchamber”
 - Each chamber has independent electronics and readout.
- 20 degree chambers (instead of 10 on GE1/1).
 - Twice as many strips (768), twice as many front-end boards (48) vs. GE1/1
 - Twice as many (2) “Optohybrid” data-concentrator cards per chamber.
- Twice the chamber, twice the boards --- *what about the bandwidth?*
 - GE1/1 has 4 trigger fibers per superchamber
 - With current design, ME2/1 OTMB will have 7 unused fibers per super chamber
 - Can use 2 fibers for the inner OH, 1 fiber for the outer OH (6 fibers per superchamber)
 - Need to plan this in conjunction with segmentation, and look at expected rates.
 - Leaves 1 spare fiber on OTMB.
- There should be significant, but not complete overlap of firmware:
 - Modifications for different # of fibers, and potentially for a next generation OTMB.
 - Need to study and test firmware for backwards compatibility to non ME11, 5 CFEB TMB..
 - ME1/1 is hardcoded! Need to reimplement support for other chambers :-(
 - Changes required but the total extent is not certain.