Plans for Rad Testing New Components (LS2)

1. Produce Artix 7 based test boards
   a) Mezzanine board for test PROMs (PC28F128P30T, XCF128X, XCF32P(JTAG connection only))
   b) Connectors/socket options for optical transceivers (need specifications)
   c) Options for testing Artix 7 features
   d) Produce enough for rad testing at TAMU and UC Davis, and general testing at multiple sites.
2. Exposure plan
   a) Tests at TAMU (neutrons up to 10 MeV)
      1) Incremental exposure up to 30 KRads (5 KRad increments?)
      2) Powered with ability to test at intervals
      3) Test multiple PROMs of each type (how many?) (simultaneous testing with multiple boards?)
   b) Tests at UC Davis (Protons at 63 MeV)
      1) TID and SEU testing (continuous read back of PROM)
      2) Erase/Reprogram tests at incremental stages up to 30 KRads
      3) Test multiple PROMs of each type (simultaneous testing with multiple boards?)
      4) Test Artix 7 FPGA for TID (SEU testing of CRAM, BRAM, fabric ?)
3. Other components need testing?

ME1/1 DCFEBs, OTMBs, and ODMBs

1. ME1/1 DCFEBs
   a) Retrieve DCFEBs from extracted chambers during YETS
   b) Ship DCFEBs to OSU for study (OSU RP requests CERN for transport)
   c) Ship MPC mezzanine boards to Rice for study (Rice RP requests CERN for transport)
   d) Firmware updates during Run2 and Run3 (Weigh importance against risk)
2. OTMB design for LS2 – choose PROM option for mezzanine board
3. OTMB/ODMB during Run 2 and Run 3
   a) If PROM issues arise, Swap boards, replace PROM
   b) Implies need to buy XCF128's while we can (qty ?)
4. DCFEBs on ME1/1 during LS3 (options if PROM issues continue)
   a) Replace DCFEBs with upgraded version:
      - Would be most economical to double production now
   b) Replace all PROMs with new XCF128, (need to buy >504 now)
   c) Replace all PROMs with PC28F128PC30T (requires adapter board, feasibility?)