

Module-0

PDS Electronics exchange

Manuel & Flavio & and inputs from Dante, Sabrina, Jaime, Dave C.

- Remove 8 Cathode Modules (bridge in place) from NP02:
 - **Total 3 days + PD Team** (3 people: 1 on the bridge & 2 people on the floor) - bridge and PD module dismounting procedure to be defined in detail (and in contact w/ NP & CRP grp)
- 8 Cathode Modules moved and stored in the PD Lab (*dedicated rack in the tent*):
 - Electronics DCEM 1.1 → DCEM 1.3 swap one by one (*PD Lab*)
 - Test of PD Module w/ new Electronics Board in LAr (*Test set-up in front of PD Lab*):
 - **1 module test/day - Total 2 weeks for 8 PD Modules test + PD Team (3-4 people)**
 - PD Module back to storage (rack in the tent) in PD Lab after test
- Fiber (tip cleaning) & Test (Pwr Meter & Laser box):
 - **32 fibers (PoF & SoF) + spares: 1 day + PD Team (3 people - one-two inside NP02 and one on top)**
- Reinstall 8 Cathode Modules (bridge in place) in NP02:
 - **1 day/module - Total (max) 2 weeks + PD Team** (3 people: 1 on the bridge & 2 people on the floor)

PD Team for pDUNE Mod-0 exchange/refurbishment:

under formation - need to know “absolute timing” and constraint from NP

Components for exchange:

Baseline option (use existing production for motherboard and daughter card)

- 4x DCEM 1.3 (w/ SoF driver daughter card - **w/ Bipolar OpAmp**)
 - 2x available immediately after April CB end
 - 2x available at CERN by mid-May (after bench test at FNAL)
- 4x DCEM 1.3 (w/ SoF driver daughter card - **w/ standard CMOS OpAmp**)
 - 2x available at CERN now (from last CB run in Jan).
 - 2x available immediately after April CB end

Alternative option under evaluation: new production for both (or either) DCEM motherboard and SoF daughter card

- 8x shield Boxes for Electronics:
 - Existing boxes from current Module-0 installation are available (but need some refurbishment to improve light tightness)
 - Under consideration production of 8 new light tight Boxes & OPC new enclosures for replacement