

M1-November Schedule

M0 – closing list

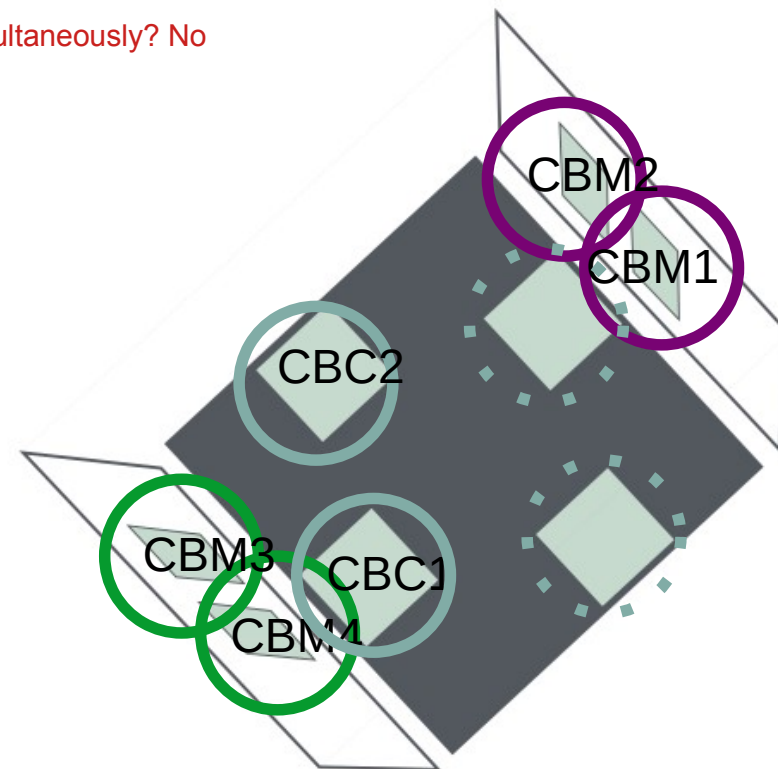
M0/M1 meeting - 18/10/2024

Module 0 closing and running

- Closing list → should be uploaded to EDMS
- LAr transfer starting week of Nov 25th , but LAr top-up early 2025
 - period with the detector half-full, level above cathode
- Should be possible to use the PDS system
 - Check of membrane and cathode
 - SPE measurements?
 - Breakdown vs temperature?
- DAPHNE availability: 1 or 2 extra freed from NP04 (in addition to the Milano + extra already modified for coldbox) → pending discussion on modifications.
 - Also 1 felix link missing but being worked on by the DAQ group
- Software: WAFFLES tutorial? To be organised/discussed.
- We should have a discussion on what analysis we want to do

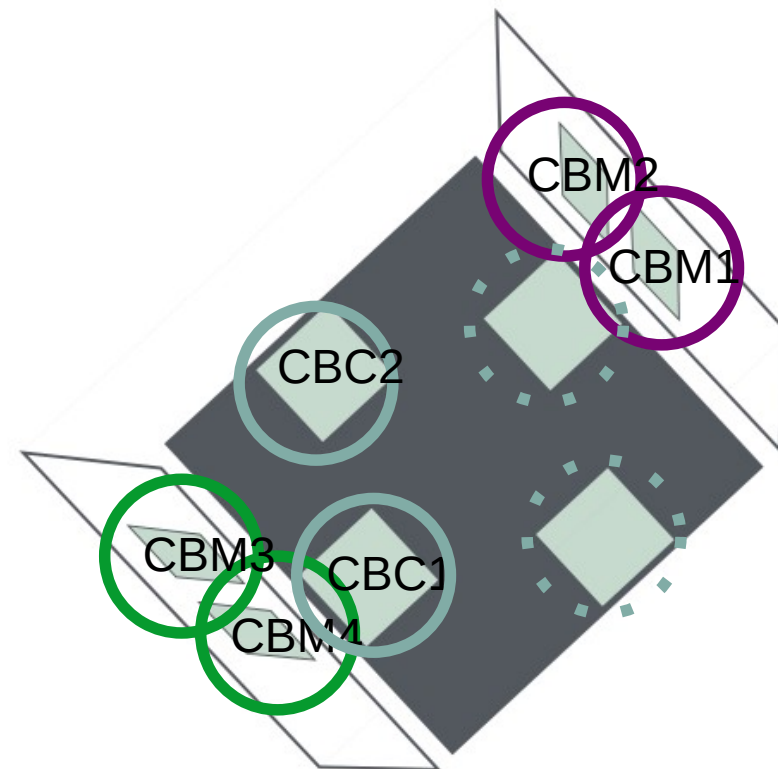
Module Assembly Plan

- **NP02 new schedule: LAr transfer 25/11 → when should we close?**
 - **Reminder: NP02 fill means 2 weeks of restricted access (and maybe CB can't fill simultaneously? No mention of this from Filippo). Access for LED calib reduced if using SSP.**
- **HPK membrane: assembly on-going or done? Test?**
 - Ready first → use mounting frame and blue cables in place
 - CBM1:
 - 8 flexis from Module1
 - all other components from Module1 in hand (CBC3 frame + new WLS)→ done
 - CBM2:
 - 4 new flexis+4 Fermilab,
 - all other components from M1 (to be done)
 - Testing + installation next week? **Or waiting for new DVDMs?** (Oct 28?)
- **FBK membrane: waiting for new FBK early November. Quantity: 12 or 16?**
 - New frames delivery by ~25/10
 - WLS: delivery date not confirmed, option to use w/dimples
 - New cables at NIU, delivery with frames?
 - New blue cables in production? Delivery with frames?
 - New membrane support in production, delivery?
 - **Assembly and testing could happen week of Nov 11th if flexis arrive, if not use M0 ones.**



Module Assembly Plan

- **FBK cathode:** build at least 2, maybe 4 for PNS?
 - Start assembly now (most components in hand)
 - C1:
 - 8 M1 FBK,
 - Frame, WLS, etc from CBC1
 - C2:
 - 8 new FBK flexis
 - Frame WLS etc from CB??
 - Electronics:
 - DCDC?
 - PoF in hand, SoF too
 - Eboxes: 2, potentially... early November?
 - Need boxes to finalize assembly and test
 - Target week of Nov 4th for testing and installation in cathode?
 - Fiber routing and meshes in cathode → could be started (mesh in IJCLab's box)
 - Options:
 - Not wait for new boxes → earlier assembly and testing
 - Assembly of 2 extra modules with “old components” now?



	Mon	Tues	Wed	Thu	Fri	Sat	Sun
43	21 October Assembly of 1 HPK module done Assembly of cathode FBK modules + 1 HPK module	22	23	24	25 Decide: wait for eBoxes? 2 or 4 cathode modules?	26	27 Daylight Saving Time ends
44	MON 28 Cathode and flange works (fibers, mesh, D15 grounds)	TUE 29 New support comp.	WED 30 Blue cables 2 frames New SiPM cables Membrane support	THU 31 All Saints' Day	FRI 1 Nov 1 All Saints' Day	SAT 2	SUN 3
45	4	5	One shipment from CSU	7	8	9	10
46	11 Armistice Day FBK flexis Assembly+ test of membrane FBK modules – installation in CB	12	13	14	15	16	17
47	18	19	20	21	22 CLOSE	23 DVDM WLS? 2 eBoxes	24 +2 frames

Module Configs (CB=coldbox)

	SiPM	Frame	WLS	Filters (all @ CERN)	Electronics	Missing items
M1	HPK M1	CBC3	New at CERN	Zaot CBM1	DMEM	DVDMC&W, blue cable, support components
M2	HPK new+ D	CB??	CB??	Zaot CBM2	DMEM	DVDMC&W, blue cable, support components
M3	FBK new	New, ship 18/10	New (ship?)	Zaot CBC1	DVDM C&W	Flexis early Nov., WLS, frame, support, blue cables
M4	FBK new	New, ship 18/10	New (ship?)	glass/ptp	DVDM C&W	Flexis early Nov., WLS, frame, support, blue cables
C1	FBK M0C3 *	CBC1 *or FBK metal in trench?	CBC1	glass/ptp	SoF- LMH	SoF, PoF, install fibers and mesh, e-box?
C2	FBK M0C7	CB??	CB??	glass/ptp	SoF- LMH	SoF, PoF, WLS, install fibers, mesh, e-box?

SiPM info from Flavio

Quantity	Type	Where	From	Id#	To	Id#
8 flex	HPK S13360-9935	@CERN	Jan/Apr/Jun Mod-1-CB	C3	Nov Mod-1-CB	M1
4 flex	HPK S13360-9935	@CERN	New - MiBi	-	Nov Mod-1-CB	M2
4 flex	HPK S13360-9935	@FNAL	ColdTest SetUp	-	Nov Mod-1-CB	
4 flex	FBK TT - current size	@CERN	Jan/Apr/Jun Mod-1-CB	M1	Nov Mod-1-CB	M3
4 flex	FBK TT - current size	@CERN	Jan/Apr/Jun Mod-1-CB	M2	Nov Mod-1-CB	
8 flex	FBK TT - current size	@CERN	New - MiBi	-	Nov Mod-1-CB	M4
8 flex	FBK TT - current size	@CERN	Jan23 Mod-0	C3	Nov Mod-1-CB	C1
8 flex	FBK TT - current size	@CERN	Jan23 Mod-0	C7	Nov Mod-1-CB	C2
8 flex	FBK MetTrench	@CERN	Jan/Apr/Jun Mod-1-CB	C1	Nov Mod-1-CB	C3
0 flex	FBK TT				Nov Mod-1-CB	C4
1 flex	HPK S13360-9935	@UCSB	Test	-	Nov Mod-1-CB	spare HPK
4 flex	FBK TT - current size	In transit to FNAL	ColdTest SetUp	-	Nov Mod-1-CB	spare FBK
xx flex (20?)	FBK TT - final size	To be delivered to MiBi (by 28-Oct)	FBK new prod		Nov Mod-1-CB	Tbd

Inventory: mechanics

- 4x M1-style single sided frames in fabrication → **2 shipping 25/10 (cathode)**, other 2 (assembled) at NIU and shipped later (not used this run)
 - 2 membrane and 2 cathode in hand (from M1) to be refurbished
- 2x cold electronics enclosures **M1 style**: fabrication not confirmed
 - PoF enclosure fabricated fits both square and tapered boxes (M0 and M1 style)
- New membrane setup:
 - New support in fabrication
 - 90deg mounting needs extra components, also in fabrication
- **Blue cable**: 2 cold and 2 warm to be fabricated at CSU
 - Pinout (doc in edms)

Inventory: optics

- FBK “small area”:
 - 12 new soldering received in September (4 at Fermilab)
 - Old available 8 from M1 16 from M0 (3 full modules)
- 12+12 FBK “large area” late October (12 for sure, the rest... not sure)
- HPK:
 - ~~20 flexis arriving 30/09~~ → 4 flexis only
 - 8 flexis left from M1
- WLS:
 - 1x 5.5mm 40mg/kg WLS now at CERN free
 - From M1: 2 in membrane modules, 2 in cathode – one has ptp on it. → to be used for membrane modules
 - **6 new in prod, delivery date to be known next week**
- Filters:
 - All modules single sided: 128 filters for top
 - 64 ZAOT Dfilters from Module 1 at CERN → at least one broken
 - 16 ZAOT Dfilters with Carla
 - ptp glass: 105 coated at CERN, 64 to be used in ProtoDUNE → there should be 41 available
 - CIEMAT provides 8 missing glass substrates, hand carried week of 7/10

Inventory: membrane electronics

- HD-style readout for 4 membrane channels:
 - 4 cold amplifiers (one needs the tuning?) + 1 DMEM in hand
 - Readout 2 channels per board → 2 electronic boxes
 - Warm stage to be tested?
- VD-style readout for 4 membrane channels:
 - 2 boards available (1 not populated) BUT 2022 version
 - New version would not be ready for Nov 4th.. but for 25th?
 - New warm stage in dev.
- White cables → fabricated, Kurt has them. Shipping with frames from CSU.
 - 2 new membrane modules: need 8 short, 8 long
 - 2 membrane going from 4 to 8 flexis: need 8 long
 - 2 cathode modules (for future installation) 8 short, 8 long

Inventory cathode electronics

- 4 SOF readout boards:
 - 4 DCEM v1.31 → in hand. 4 at APC, N at Fermilab
 - 4 laser adapter 2 stage → in hand at APC and Fermilab
 - 8 lasers → in hand. use TalBO spares or new ones at APC
 - 4 DCDC → need new? (and what voltage) → need to produce (\$)
- Fibers: current ones in good state, but
 - Potential to install all continuous fibers like in C1?
 - Long fibers for 3 modules (12 + spares)
 - Change of flange?
- PoF
 - 16 OPCs (4 OPC boards) → available from M1 plus other spares around.
 - 4x PoF enclosure: no enclosure used before. Need new ones... compatible with existing PCBs?

Warm electronics

- SoF:
 - 1x DAPHNES V2 from Milano (one)
 - Cathode needs 4 AFE (2 channels per AFE limitation)
 - >4x 2-channel SoF receivers available (now 5 at APC, 1 Milano, 1 Fermi?) - CSU one not available
 - Goal to do a first test of 8-channel receiver → requires new board fabrication and large modification of one AFE – never done before.
 - Proposal: Milano DAPHNE as usual
- Membrane:
 - 1x DAPHNE v2 from NP02 already modified at Milano
 - 2x warm boards VD and HD?