

# Technical Update


David Warner

Photon Detector Consortium Meeting

March 26, 2024

# Photon Detection Consortium meeting



 Tuesday Mar 26, 2024, 8:00 AM → 9:00 AM US/Mountain

**8:00 AM** → 8:10 AM **Future Consortium meeting plans, project overview**

**Speaker:** David Warner (Colorado State University)

 10m



**8:10 AM** → 8:30 AM **HD ProtoDUNE status**

**Speaker:** Anselmo Cervera (IFIC-Valencia)

 20m



**8:30 AM** → 8:50 AM **VD CERN testing & M0 electronics swap plan**

**Speaker:** Flavio Cavanna (Fermilab)

 20m



# Outline

- Re-launch of Consortium Meetings
- HD – VD Detector Installation Order Swap
  - Impact on DUNE FD installation schedule
  - Initial impact on HD PDS schedule
  - Initial impact on VD PDS schedule
  - Summary of PRR changes
- Upcoming Events

# Re-Launch of Consortium Meetings

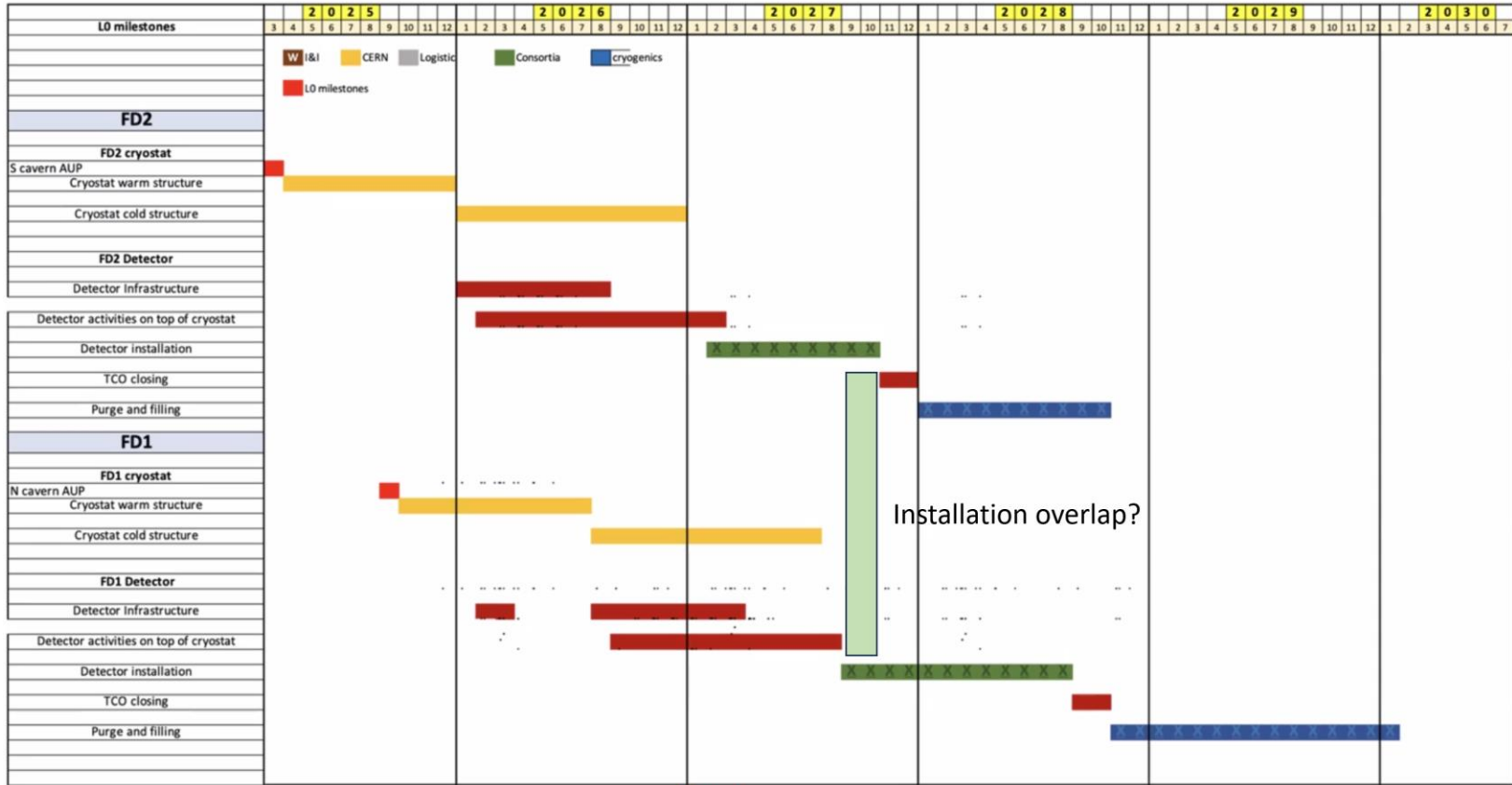
- We are re-launching consortium meetings in an attempt to improve communication within the consortium at this critical time.
  - Every other week, starting March 26 2024.
    - 9AM CDT, 16:00 CET (in general)\*
- \*Note that meetings will follow US time zone
- We plan to include three roughly 20-minute presentations per meeting: One project information meeting, one HD PDS centered, one VD PDS centered presentation.
    - We will attempt to highlight work of younger collaborators every second meeting.
    - We will try to stick to 1-hour duration.
  - We are looking for suggestions for presentations for future meetings!
    - Please contact Ettore/Dave Warner with suggestions.

# Far Detector Installation Order Swap

- In March 2023 the Executive Board voted to swap the order of FD installation.
- The intention of the project is to accelerate the production rate for VD PDS components, while not delaying the fabrication of HD PDS components more than is necessary to meet VD PDS production.
- With the swap, VD PDS will be installed in CY27, and HD PDS in late 2027-early 2028.
- The detector swap requirements were included in the VD PDS P6 schedule re-write implemented in late 2023/early 2024.
- The HD PDS P6 schedule will be updated in April 2024.

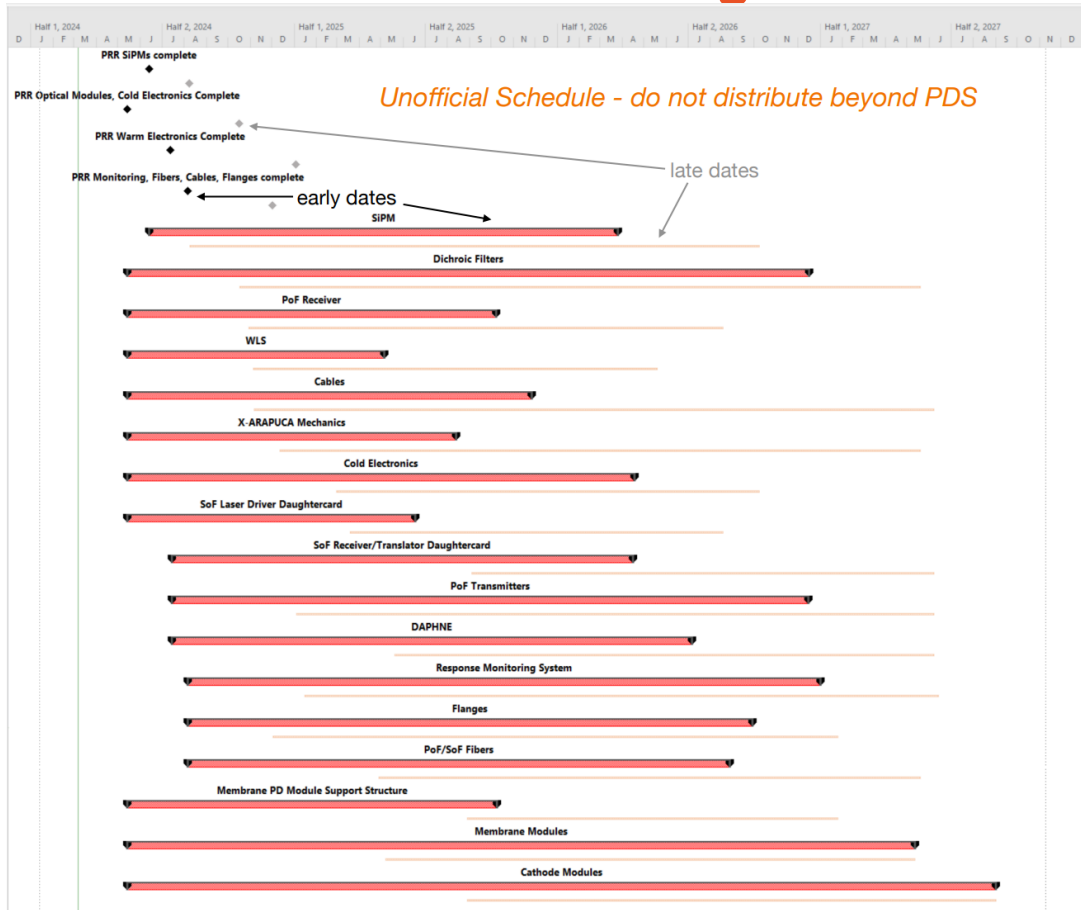
# Far Detector Installation Order Swap

CY



n.b.: There is no official project swap schedule yet.

# DRAFT VD PDS Schedule Following Installation Order Swap



\*We are still confirming the implications of this schedule with PDS teams. Will hold discussions with relevant people.

Peter will present schedule details at next consortium meeting.

# HD PDS Impact from Installation Order Swap

- PRR (remaining scope)
  - Remaining scope PRR currently scheduled for June 2024.
  - Potential changes-
    - Merge dichroic filter PRR with VD (August 2024).
    - Merge DAPHNE PRR with VD (October 2024) (n.b.: complicated production interactions, may raise issues with production schedule).
    - Possibly delay HD PRR to October 2024.
- Production impact
  - SiPMs
    - Testing HD PDS SiPMs unlikely to interact with VD (separate test setups).
  - HD Module Production
    - DUNE Project goal is to avoid delaying production of HD components, to allow more time for any potential issues.
      - Dichroic filters will be ordered as close to the original schedule as possible.
      - Coating of HD filters may be delayed to allow VD filters to be coated at UNICAMP.
      - Validation planning for WLS plates to be completed ASAP (need to understand how to conclude split WLS option validation).
      - PRR will be completed for these items ASAP, with ordering sticking to non-swap schedule as much as possible.
  - Installation
    - There is currently no official post-swap project schedule.
    - Draft versions show some overlap between VD and HD – need to understand personnel issues.)



# Upcoming Production Readiness Reviews

- DUNE Production Readiness Reviews need to be completed in advance of initiating component **procurement** for the far detector.
  - Site visits will follow PRRs to evaluate pre-production activities.
- HD PDS Rail and Cable, DAPHNE components and HD PDS SiPMs completed PRRs, and have begun procurement activities.
- Production Readiness Reviews for all remaining sub-systems need to be completed in 2024 to remain on schedule.
- Review and production schedule will be re-visited once HD-VD installation plan finalized.

# Remaining PRR Schedule

Review	P6 Date
HD Remaining Component PRR	October 2024 (proposed)
VD SiPM PRR	June 2024
VD module & CE	August 2024
VD Warm Electronics	October 2024
October	October 2024

Note: We will re-schedule reviews to reduce FD1-FD2 overlap once detector installation schedule is finalized

# Upcoming Events Calendar

- Reviews:
  - See slide 9 for PRR review summary.
- Physics/performance validation runs:
  - Cold box runs:
    - HD PDS June 2024.
    - VD PDS (Module 1 run) April 2024, June/July 2024
  - ProtoDUNEs (See other presentations this meeting).
- Collaboration meeting:
  - May 20-24 (Fermilab).
  - Possible PDS workshop May 17/18 at FNAL?