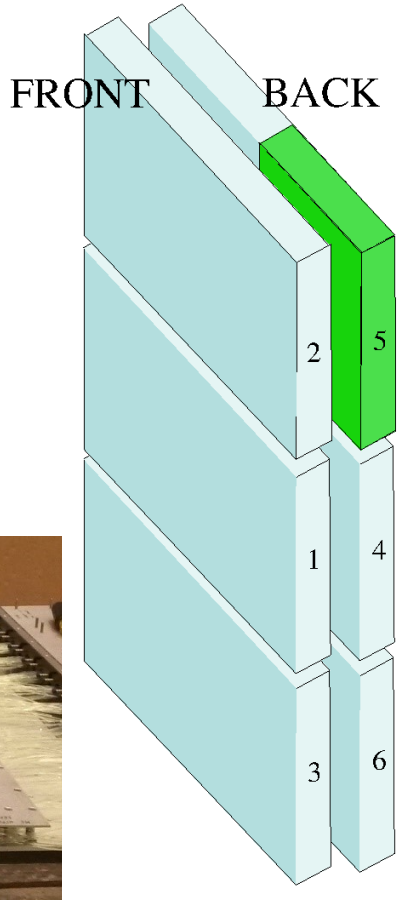
Coordinate Detector Status Update

Peter Monaghan
Christopher Newport University

SBS Weekly Meeting
25th July 2022

Coordinate Detector Configuration

- Left/Right split by mirror.
- Paddles angular spread $\pm 17°$
- Detector over 3 m tall



Module Commissioning Progress

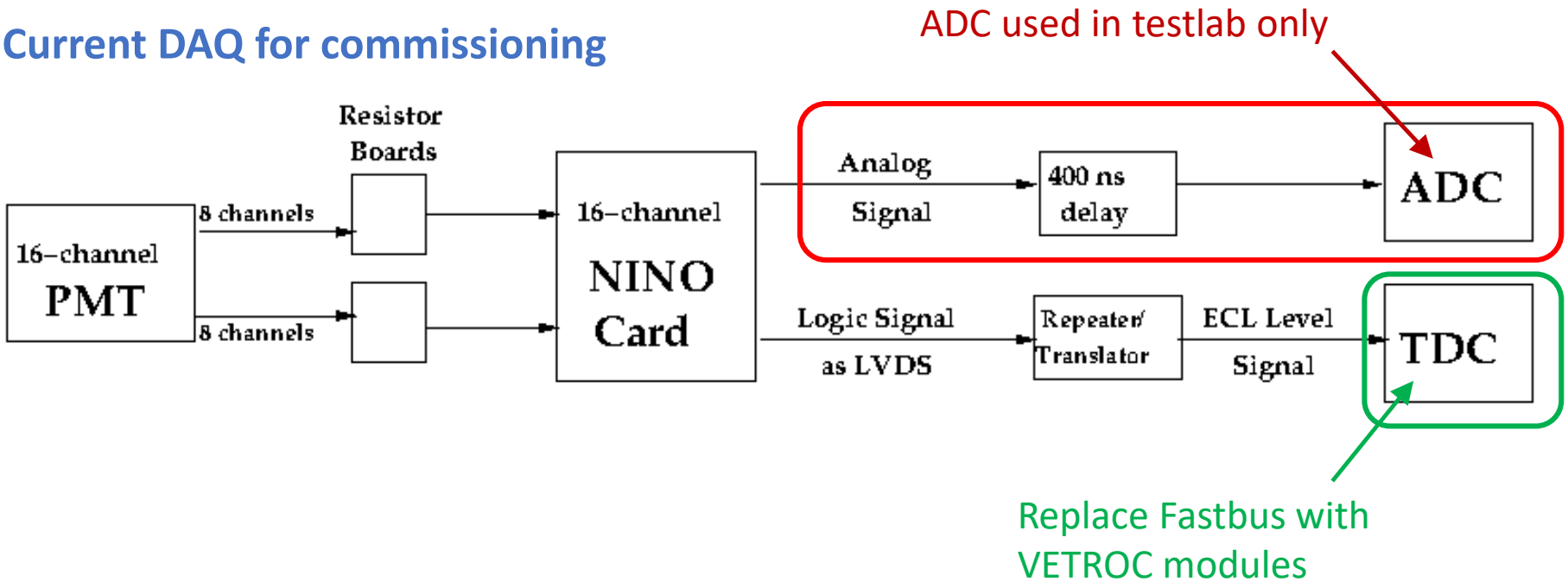
		Light-tightness	Charge normalised	Threshold	Efficiency & HV	Complete
Module 1	RIGHT	✓	✓	✓	✓	✓
	LEFT	✓	✓	✓	✓	✓
Module 2	RIGHT	✓	✓	✓	✓	✓
	LEFT	✓	✓	✓	✓	✓
Module 3	RIGHT	✓	✓	✓	✓	✓
	LEFT	✓	✓	✓	✓	✓
Module 4	RIGHT	✓	✓	✓	✓	✓
	LEFT	✓	✓	✓	✓	✓
Module 5	RIGHT	✓	✓	✓	✓	✓
	LEFT	✓	✓	×	×	×

Coordinate Detector Update

- Cosmic data taking in progress
  - 5th module almost complete
  - 6th final module next
  - Replacement PMTs/spares purchased
  - Retrofit module 1 & 2 for light-tightness
- Magnetic shield tests
  - Current configuration to compare to simulation
  - Change to shield components will have to be retrofitted on all modules

DAQ: Fastbus → VETROC

Current DAQ for commissioning

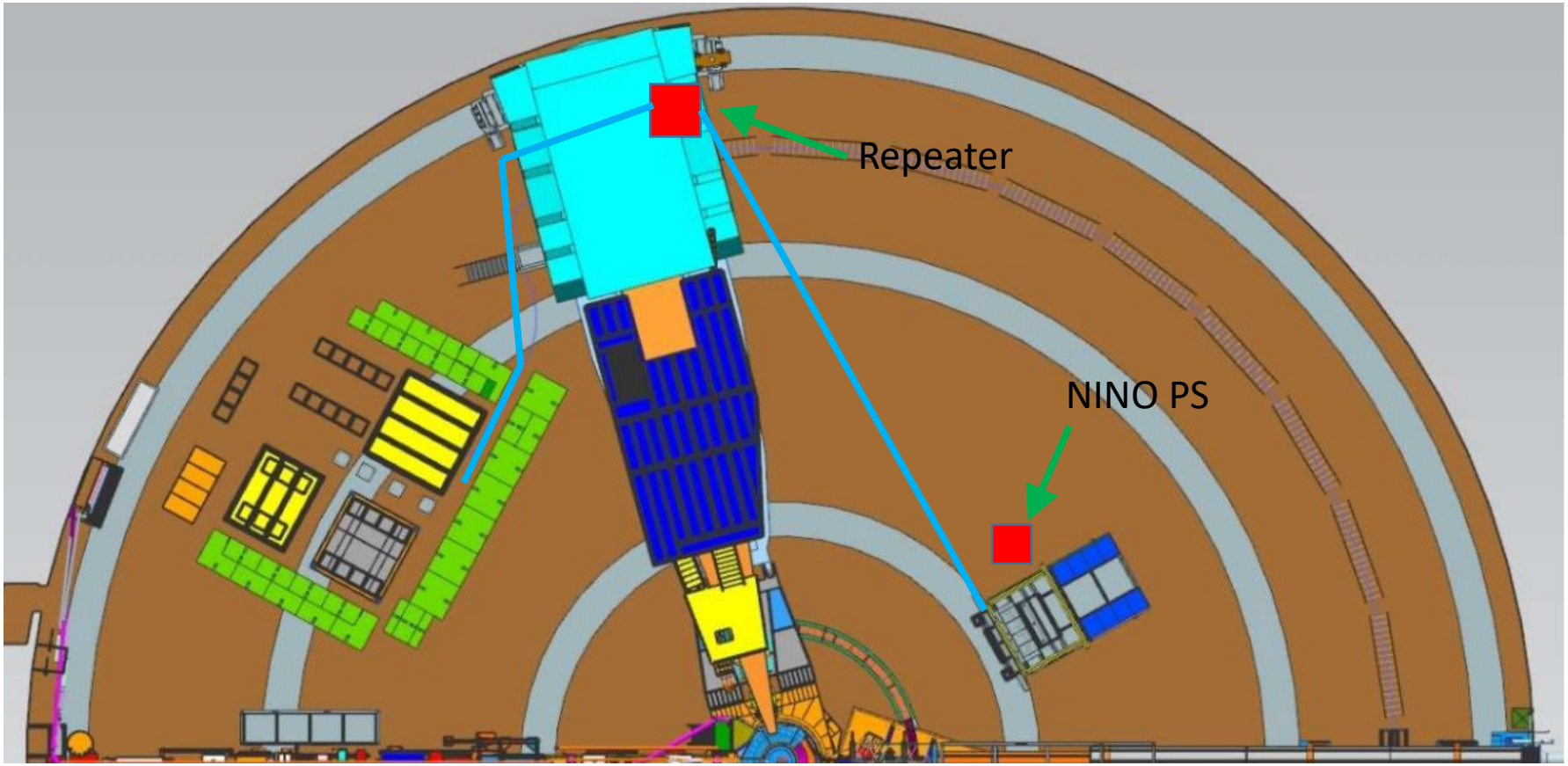


- VETROC TDCs capable of higher data rates.
- Fewer modules required for **less** deadtime.
- Preliminary test setup with CODA 3.0

Open Issues to Complete

- Engineering work for mounting frame
  - Shelved for GMn; need to restart.
  - Account for mounting, craning, symmetry.
- DAQ – conversion to VETROC TDC
  - Preliminary work last year; needs to restart
- Low Voltage power supply for NINO cards
  - In progress; parts ordered; needs finalizing
- PMT high voltage supply/cables to finalize
- Cables – need to locate or purchase
- Software requirements to finalize

GEp Layout – Layout, Cabling etc.



- NINO → LVDS-ECL → VETROC ribbon cables must be less than 30 m (100 ft) long (336 cables)

Summary

- Continuing with commissioning
  - One full module left to complete
- Engineering work on frame and installation required
- DAQ changing to use VETROC system
- Power supply system for NINO cards developed with Fast Electronics group
- Considering plans/logistics for installation and running