FLEET RENEWAL UPDATE
Regional Class Research Vessels

Presented by Clare Reimers 11/1/2021

3 Vessel Build under NSF MREFC Funding

R/V *Taani*

R/V *Narragansett Dawn*

R/V *Gilbert R Mason*

Oregon State University

RCRV MREFC Project Milestones

PHASE III | PHASE IV

- Complete Design Transfer (OSU to shipyard) ✓
- Begin Construction (Keel laying) ✓
- Launch and Final Outfitting
- Shipyard/Builders Trials
- Delivery for Preliminary Acceptance (by OSU)
- End of Warranty Period - (Final Acceptance Construction Complete)
- Science Trials (Transition to Operations)
- NSF Inspection
- Acceptance as UNOLS vessel

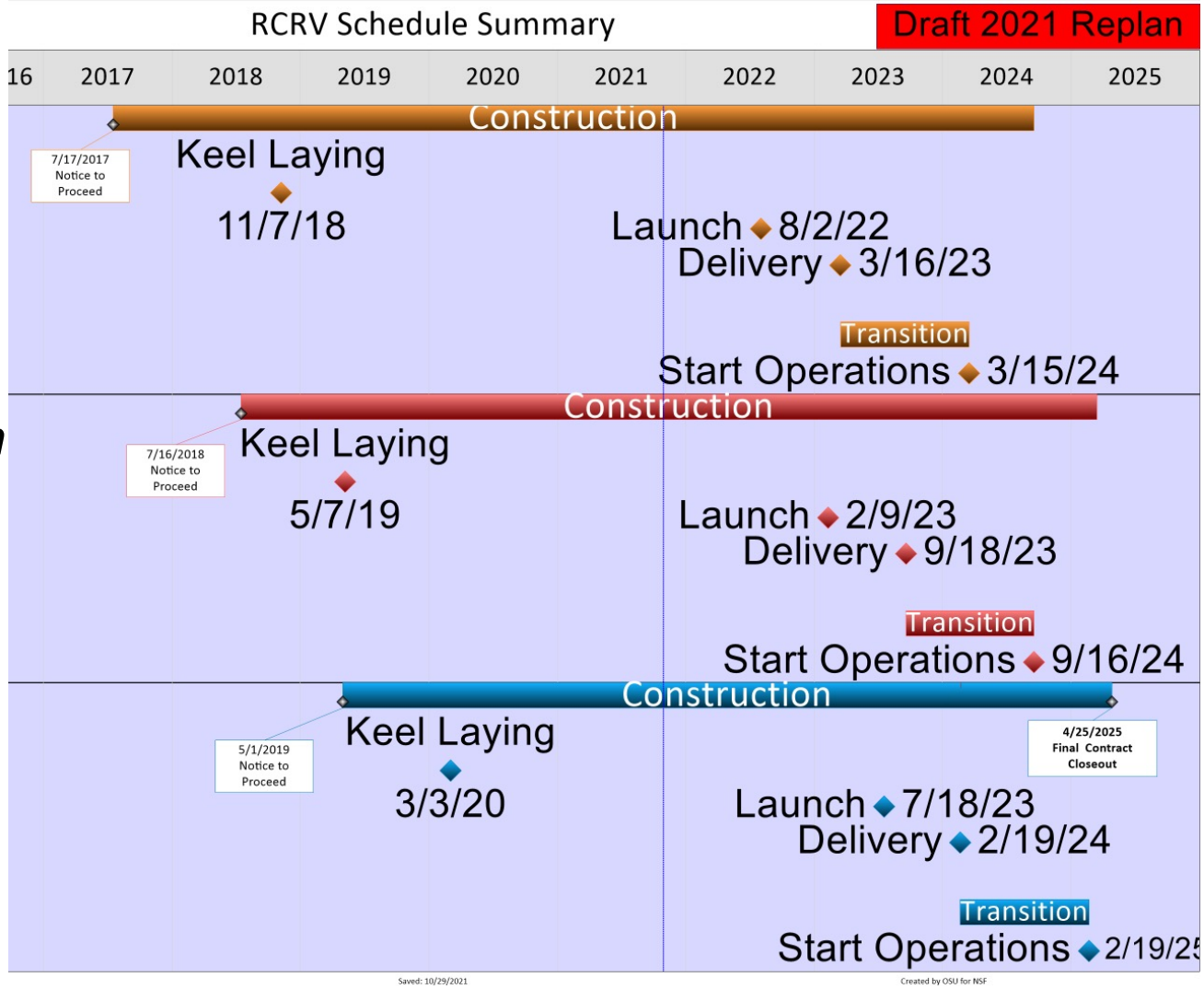
TPC= $363.4M
%Complete= 41%
Contingency Balance =$22.5M

R/V *Taani*
Delivery
03/16/2023

R/V *Narragansett Dawn*
Delivery
09/18/2023

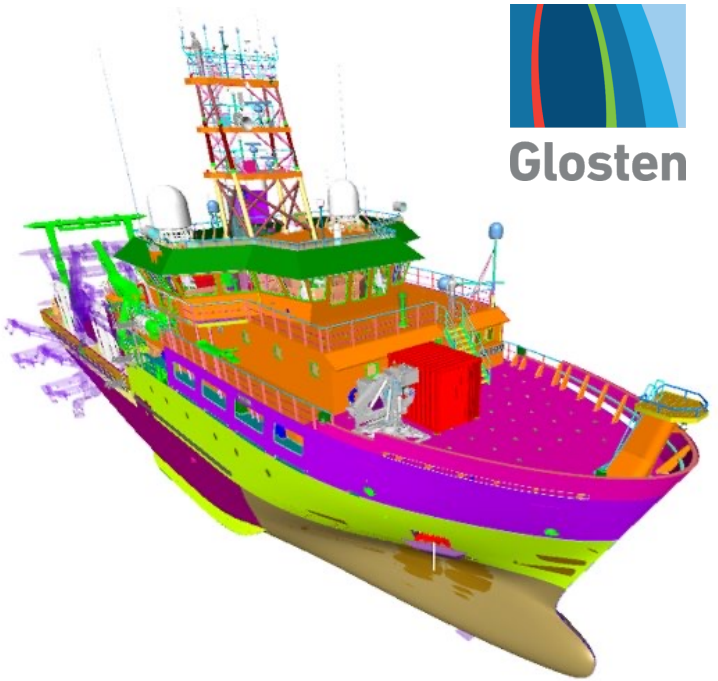
R/V *Gilbert R. Mason*
Delivery
02/19/2024

Project Completion 01/31/2025



Project Duration and Scheduling Factors

- Planned Project End date has been extended 20 months.
- Early construction delays tied primarily to GIS management and deficiencies in integrated production modeling and release of production drawings.
- Transitioning the design modeling responsibility to Glosten (from Genoa) in early 2020 was a major change for the project that overcame most of the bottleneck with GIS.
- **COVID** did delay some of the modeling work in 2020 and contributed to yard labor inefficiencies.



Glosten

2021 Challenges

- Beginning May 2021, Shipyard has New Ownership
  - **Bollinger Houma Shipyard (BHS)**
  - Bollinger is the largest privately owned yard in the Country
  - Long history of successful projects for the USCG and USN
  - Transition to BHS caused new schedule delays, but this change has been good for the project overall
  - Work ramping up under new shipyard direction by August 2021

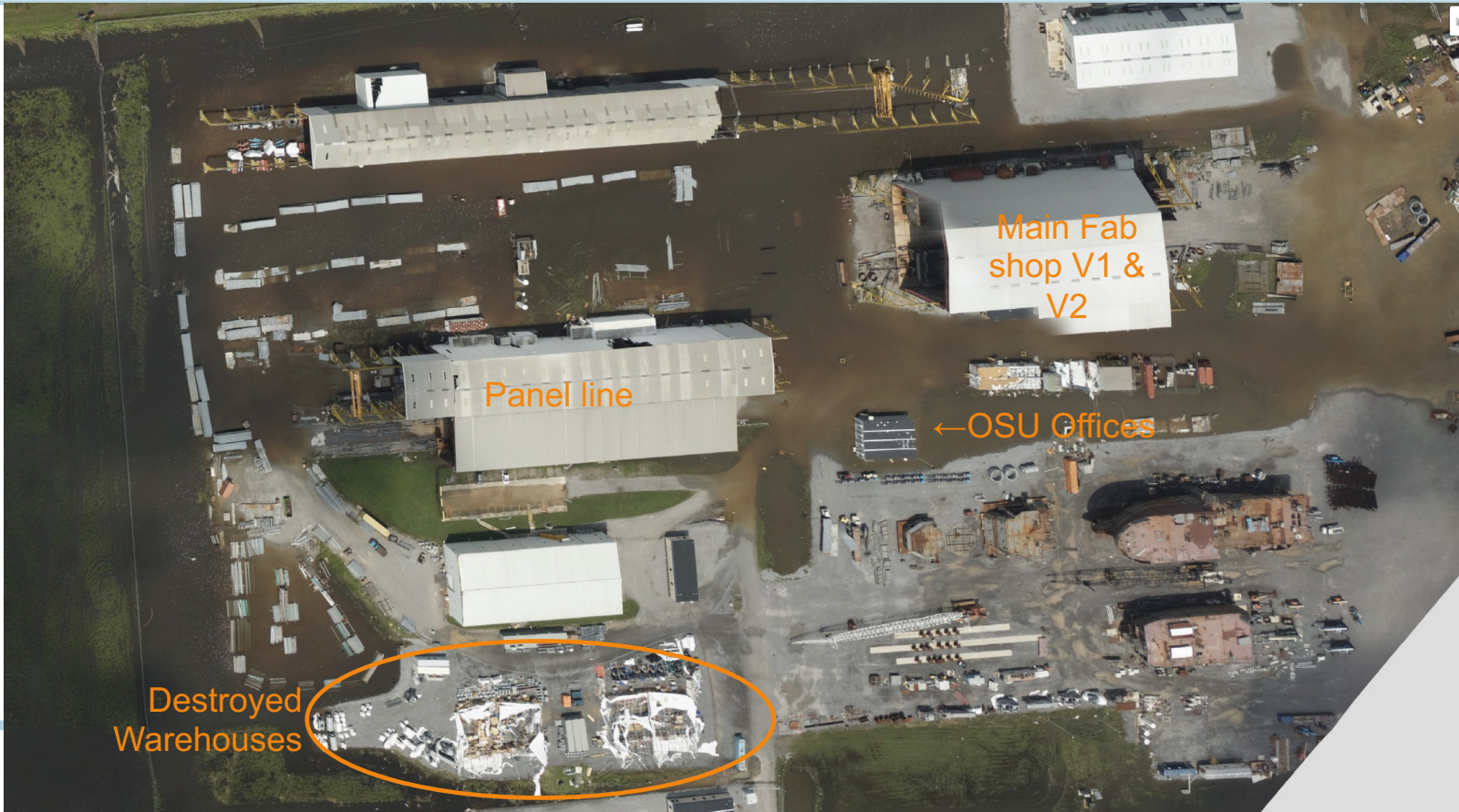
2021 Challenges- Houma LA

Hurricane Ida

August 29, 2021

Sustained 130 kt
Gusts 150 kt

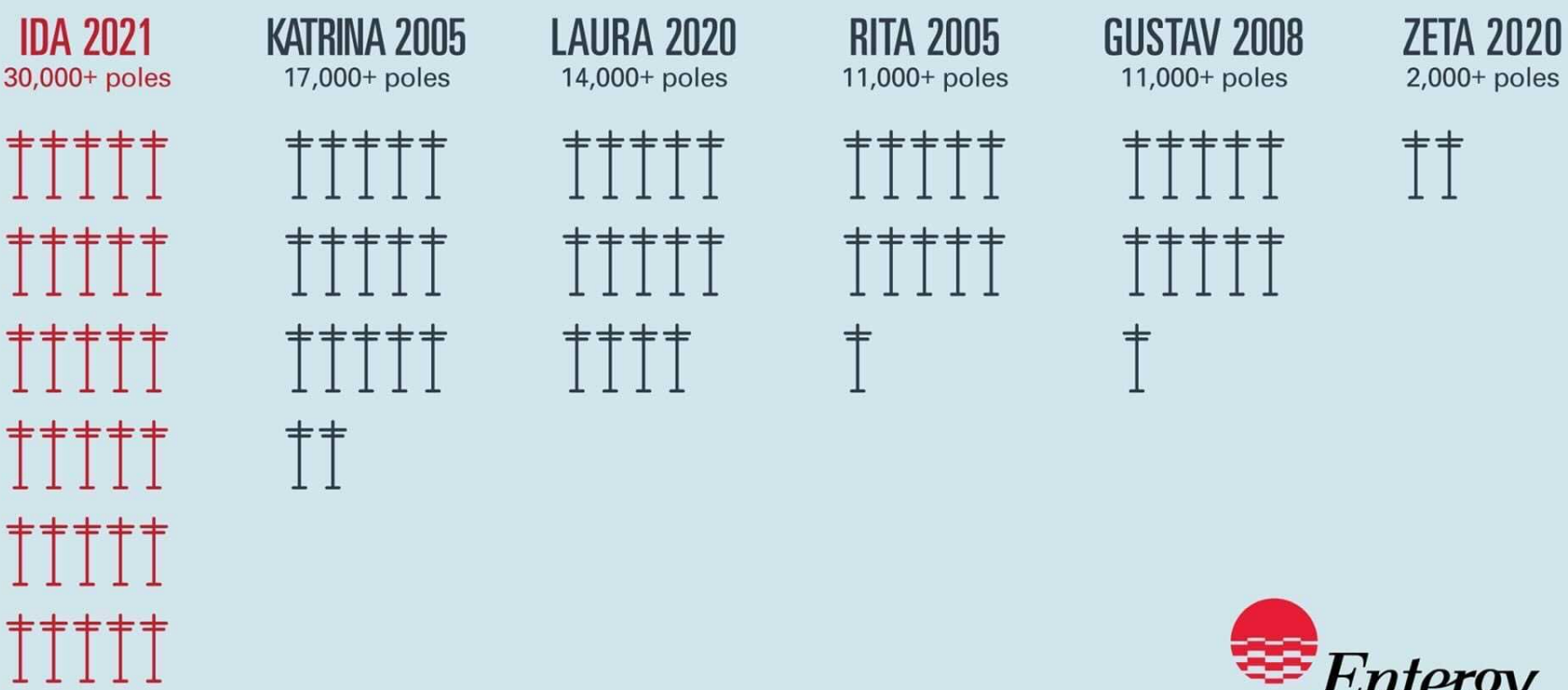
Area Infrastructure Damage



RCRV Regional Class Research Vessels

Hurricane Ida

Damaged Utility Pole Comparison: † = 1,000 Poles



Entergy®

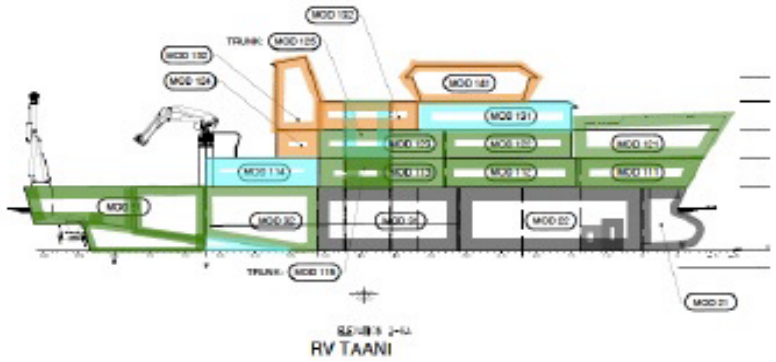
Bollinger Houma Shipyard - IDA Response

- Improving Storage
- Rapid upgrades to drainage and flood protection
- Community re-building projects
- Labor Force Support

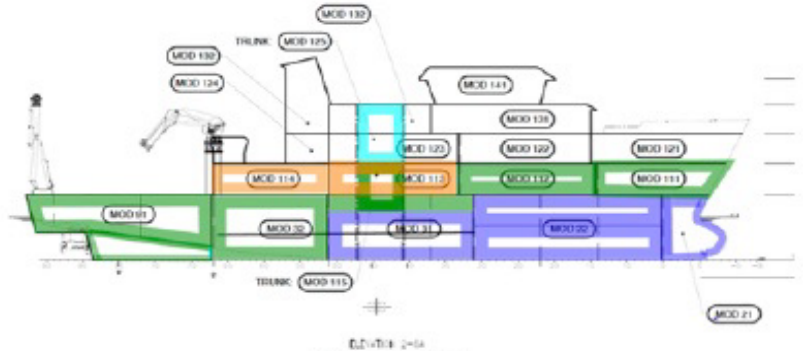
RCRV
Regional Class Research Vessels

Bollinger SHIPYARDS

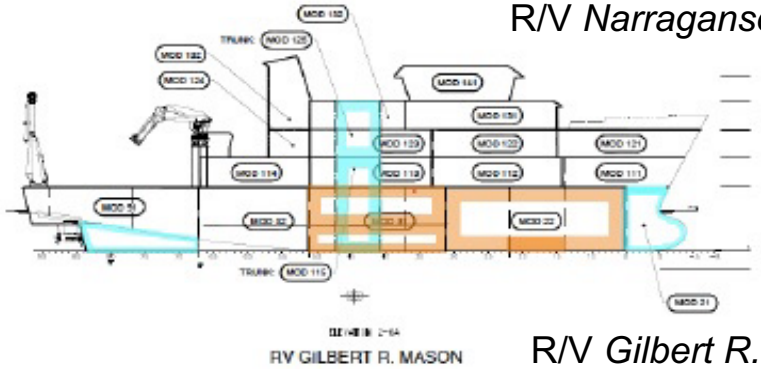
Vessel Progress as of October 2021



R/V *TAANI*



R/V *Narragansett Dawn*



R/V *Gilbert R. Mason*

Outfitting

Cut and Panels

Module Construct

Subassembly
Erection/Construct

Blast & Paint

Module Erection

Taani “super module” going to blast and paint 3/15/21

Ship Stores

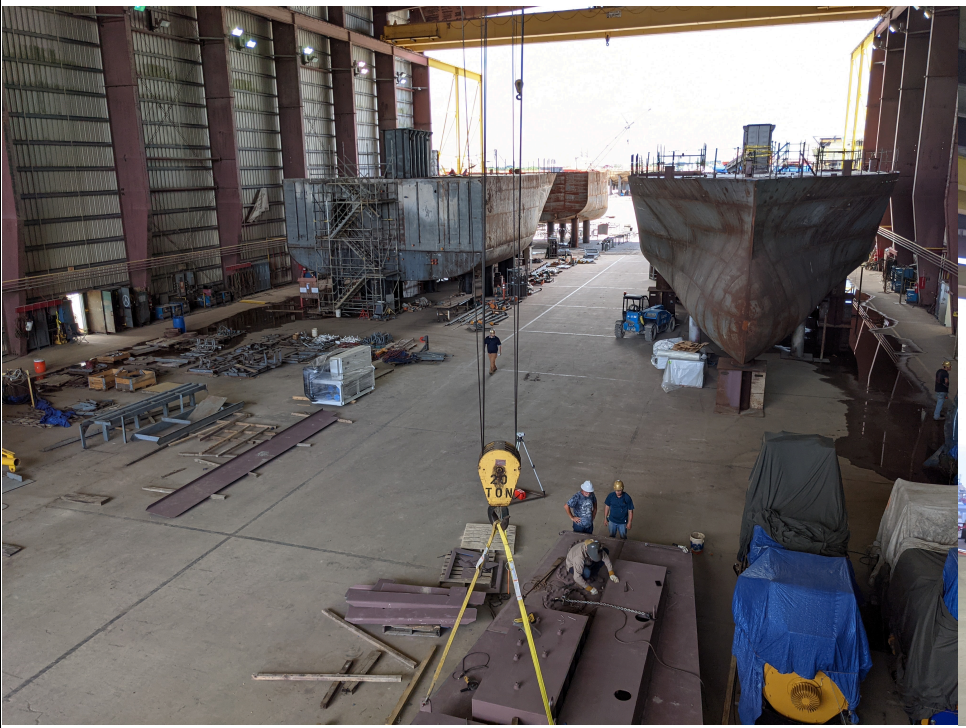
Beier

Siemens

Equipment Room

R/V *TAANI* Amelia Yard Aluminum Work

R/V *TAANI* Transducer Flat



Welding of the flat into the hull supermodule occurred in October 2021.

Phase IV – R-DESC

- CORIOLIX
  - Development and integration with CI and Sensors
  - Support for all three current OIs
- Cyber and Sensor Infrastructure
  - All three vessels sensor procurement
  - Configuration and system testing
  - R/V *TAANI* full system bench test
- Larger RFP process
  - Accommodation Vans
  - Piston Coring Deployment and Recovery System
  - CMMS
- Collaboration with UNOLS/ARF working groups
  - R2R, MFP, ISC, CI/CS, Best Practices, etc.

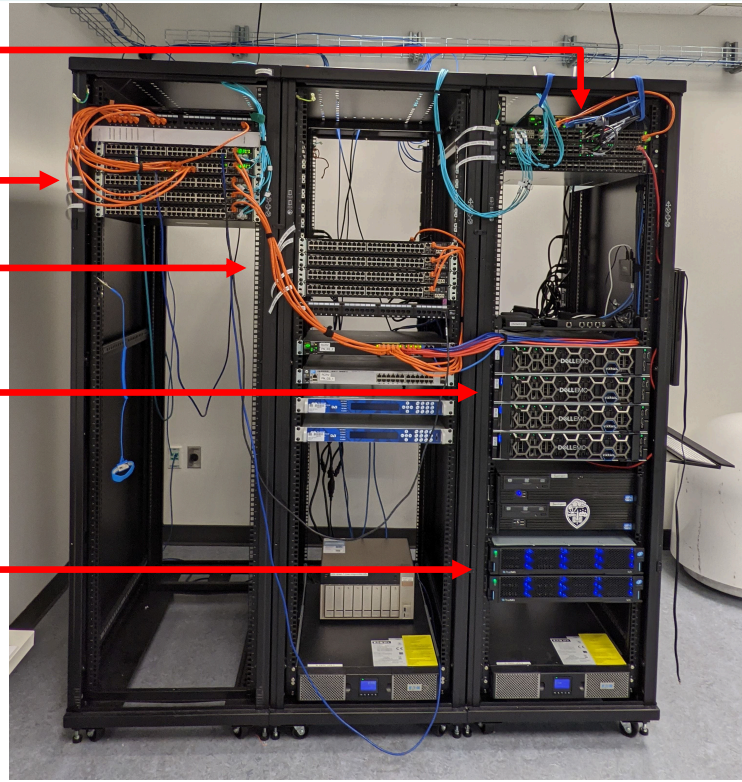
RCRV Regional Class Research Vessels

Oregon State University

Bollinger SHIPYARDS

R-DESC Facility Continued: Cyberinfrastructure

- Core Switching
  - Redundantly configured
  - Dual 10 GbE link to edge and ‘Top of Rack’ (TOR)
- Edge Node Switches (5)
  - Pilot House Electronics Room
  - Computer Lab
  - Main Lab
  - ECR
  - Transceiver Room
- Datacenter TOR Switches (4)
- 4 Node Hyperconverged Dell VxRail virtualization cluster
  - 60TB SAN
  - 8 sockets, 160 CPU’s (360 logical processors)
  - 1.5 TB RAM
- Unified Digital Storage (Block & File storage)
  - 2 x 60TB ZFS arrays
  - Array 2 replicates Array 1
- Not shown
  - Multi-WAN switching (procured 10/21)




NSF
For outreach videos visit:
https://www.youtube.com/watch?v=bgiAU_b4RfY