

# NWSC-2 Procurement Update

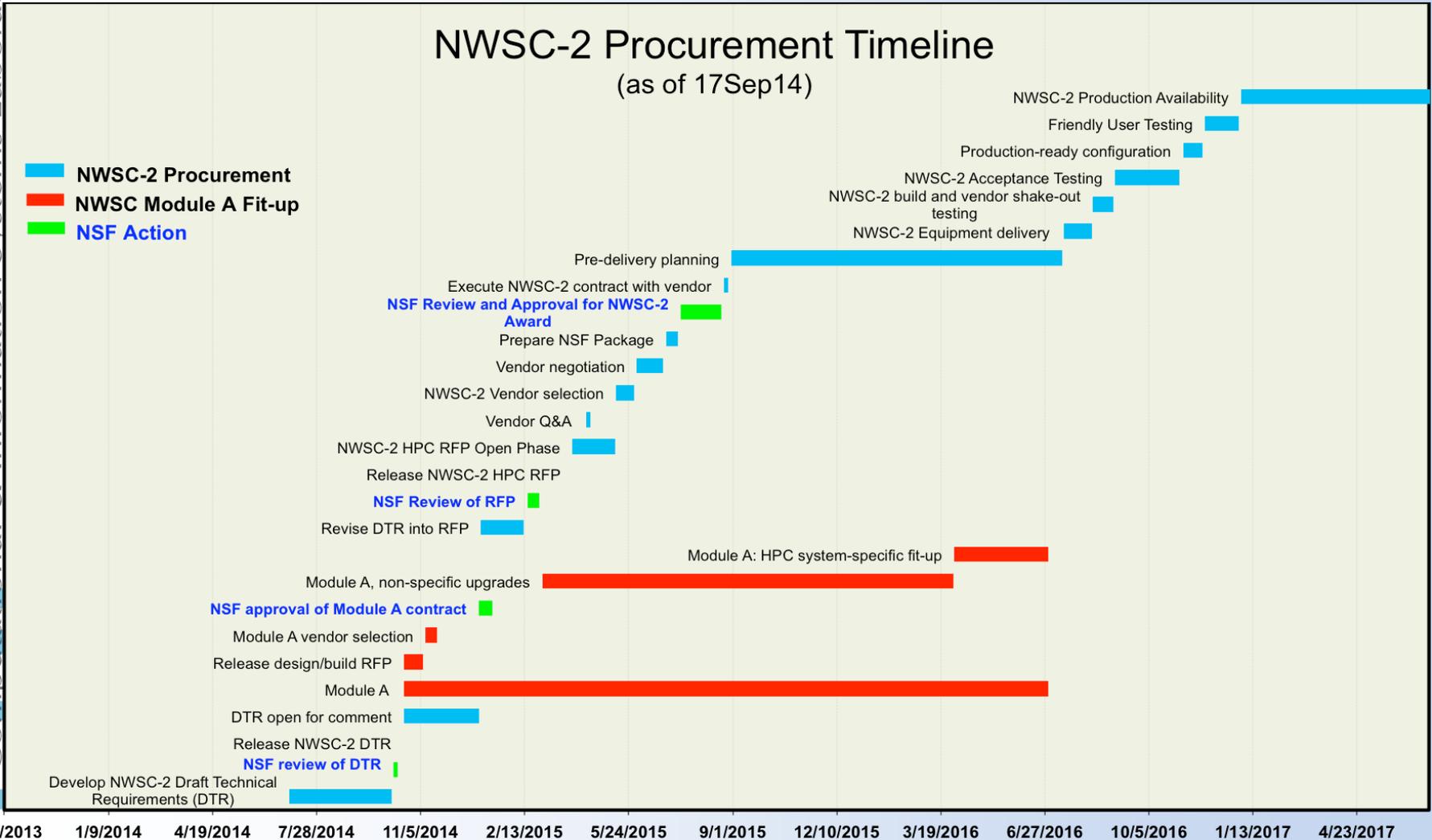
*October 16, 2014*

*CHAP*

# NWSC\_2 Procurement Timeline

## NWSC-2 Procurement Timeline (as of 17Sep14)

- NWSC-2 Procurement
- NWSC Module A Fit-up
- NSF Action



10/1/2013 1/9/2014 4/19/2014 7/28/2014 11/5/2014 2/13/2015 5/24/2015 9/1/2015 12/10/2015 3/19/2016 6/27/2016 10/5/2016 1/13/2017 4/23/2017

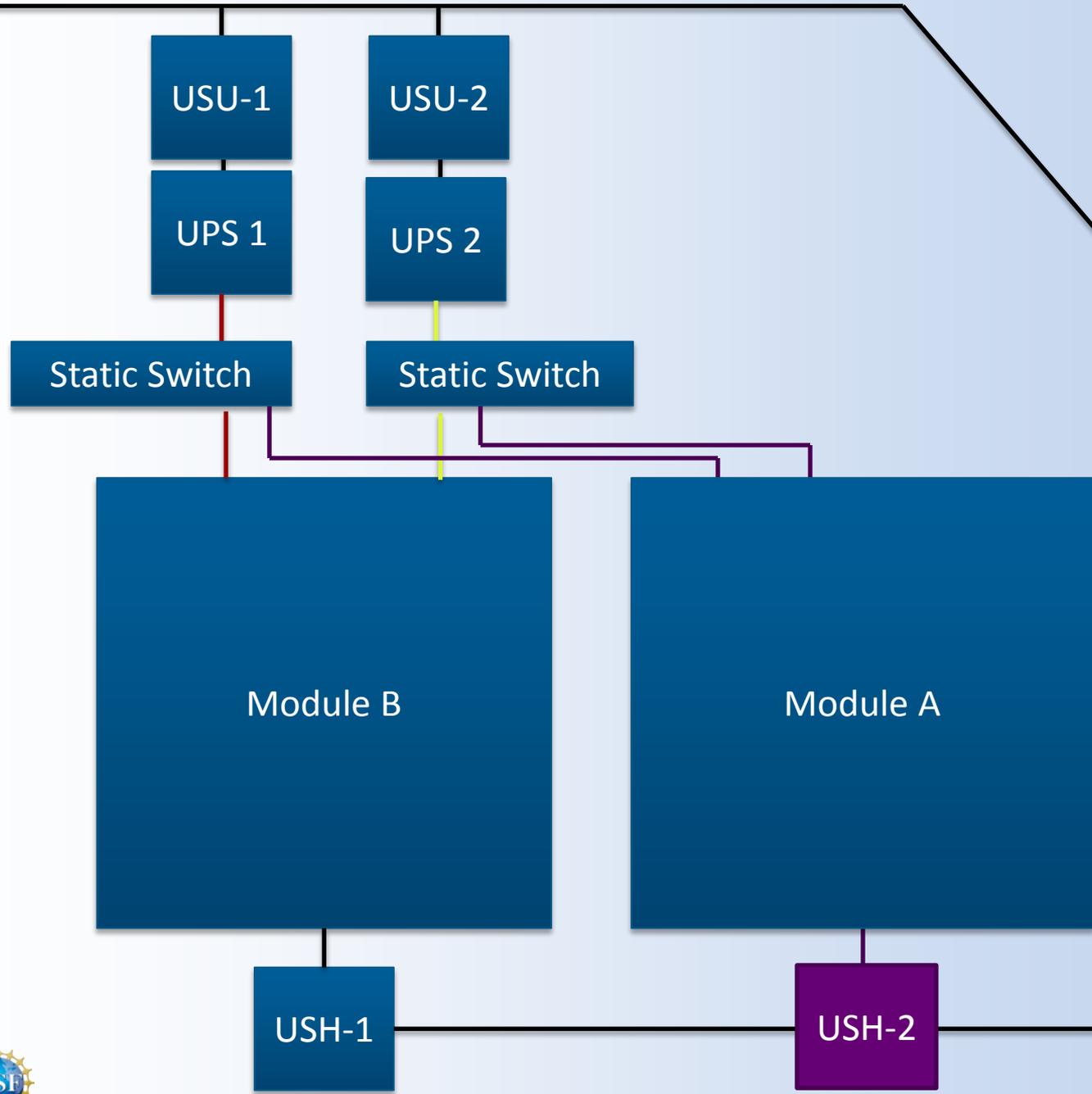
# Key Dates

- **October 2014:** Release Draft Technical Specification (DTS) and Yellowstone workload study
- **April 2015:** Formal Request for Proposals. Open for ~30 days
- **March 2015:** Begin Module A build-out
- **2H-2015:** Vendor selection, negotiation, NSF approval
- **2H-2016:** Equipment delivery, acceptance, Friendly User
- **January 1, 2017:** Production
- **December 2017:** Decommission Yellowstone

# Module A – Build Out

- **Drop Ceiling**
- **Cable Infrastructure – ladder rack/tray**
- **Fire protection**
- **Lighting**
- **Security – card readers, cameras etc.**
  - Plan to do in-house
  - Augmented security help construction
- **Electrical upgrades**
  - USH-2 and distribution equipment
  - Final Connections - TBD
- **Mechanical upgrades**
  - TBD

CLF&P



Future NWSO Configuration

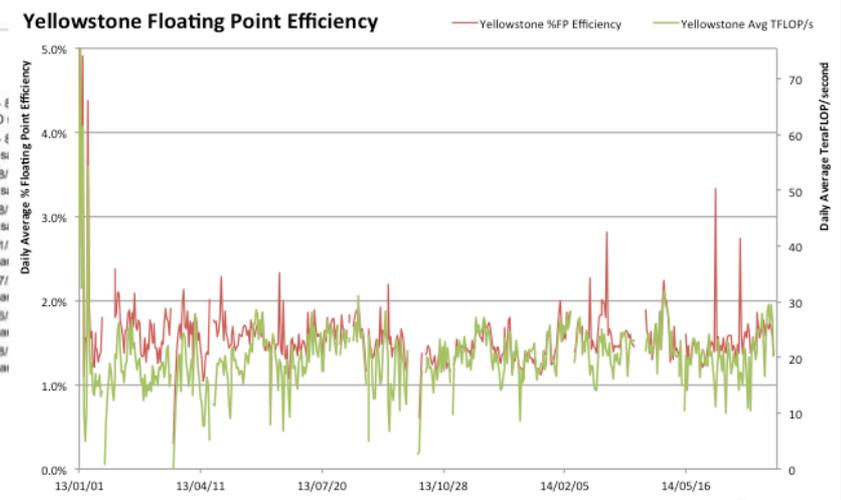
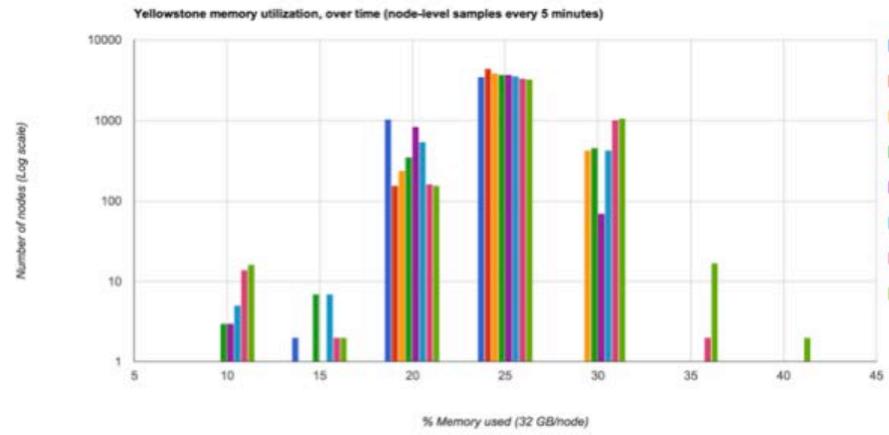
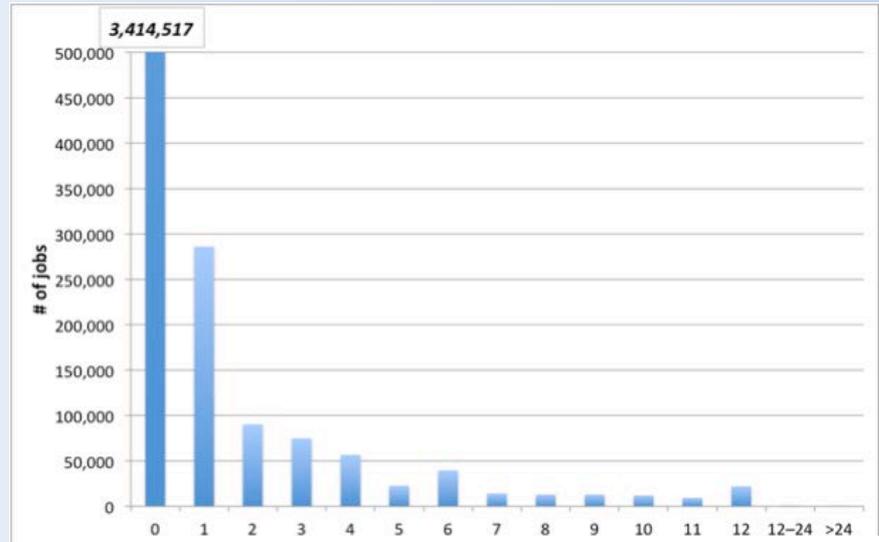
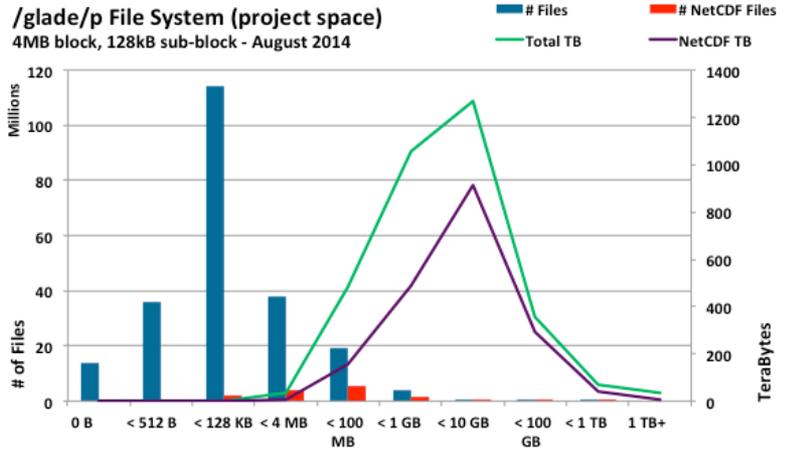
# Module A Build out Design/Build

- **Hire General Contractor which will bring in resources as needed**
  - Designers
  - Construction Sub-contractors
- **Majority of Design is in Place Simply needs to be Verified**
- **Manages Risk**
  - Long lead items
  - Two step design/construction phases
    - Design and Construct portions that are not dependent on NWSC-2 details
    - Design and Construction NWSC-2 specific components
      - “Last Mile” Electrical connections
      - Any Custom Mechanical Requirements

# NWSC-2 Procurement Status

- Develop and seek input from NSF, and external community on NWSC-2 Procurement Strategy document (complete)
- Engage with Science Requirements Advisory Panel (SRAP) on science use cases (underway)
- Refined budgeting (underway)
- Publish Yellowstone Workload study to help potential vendors understand our environment (complete)
- Seek input from External HPC Advisory Group on DTS (complete)
- Published Metrics 1.0 for internal stakeholders to understand Yellowstone usage (complete)
- Working Groups important for defining DTS (underway)
- Initial power and sizing estimates performed to support NWSC-2 Module A build-out planning (complete)
- Release DTS in October 2014 (planned)
- SC'14 presentations on procurement (planned)

# Yellowstone Workload Study Helps Guide NWSC-2 Design



# Draft Technical Specification document is nearly complete

- Provides strong technical guidance while allowing vendors to be innovative
- Requests: HPC system, PFS, many-core, GPGPU, and DAV nodes
- Broad input from external and internal groups
- Planned release on 10/20
- Seek vendor input for ~60 days
- Refine into formal RFP for release in early 2016

## NWSC-2 Computing Platforms: Draft Technical Requirements

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# General Thoughts on NWSC-2

- Budget comparable to Yellowstone... and System might look a lot like Yellowstone...
- May only by 2.5-3.5X Yellowstone
  - Per node costs are staying about the same as Yellowstone
  - Speedup from memory, more cores
  - ~1.5B cpu-hours/yr
- Interconnect likely dragonfly topology
- Scratch Filesystem est - 20PB with 200GBs
- GLADE Expansion may be done separately
- Large system may be heterogeneous for DAV support (Large Memory and/or Vis Cards)
- Considering small accelerators component – as option
- 3MW probably upper limit
- 1 Year Overlap Planned with Yellowstone

# Questions?

**CISL**

Computational & Information Systems Laboratory