

HPCAT Status

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Online

Outline

- Nenad: Overview of COVID situation impact and current operations status and outlook
- Zulu: Status of techniques and details regarding current operations
- Q & A - All

Timeline and status

- **Mar. 17, 2020 - APS transitioned to *Alternate User Mode***
 - All user operations at APS were paused
 - Only APS resident staff allowed onsite
 - Initial status planned for 30 days and reassess ~mid-April
- **Mar. 20, 2020 - IL governor issued Shelter in place and DOE-APS moved to “*Essential Work Only*” Mode**
 - No users; no development experiments; JUST essential work at APS-ANL
 - Limited (essential work) staff allowed at APS-ANL
 - For 2 weeks and reassess Apr. 07
 - APS beam/operations schedule adjusted - 2020-2 to start after June 16 (reduced # of user shifts in 2020-2)
- **Mar. 31, 2020 - IL governor extends shelter in place until end of April, and then continued**
 - APS formed plans accordingly
- **Mar. 31, 2020 - NNSA Administrator Lisa Gordon-Hagerty letter**
 - Throughout this pandemic, the work that the NNSA and our partner labs, sites and plants perform remains critical to U.S. national security;
 - Safety #1

Timeline and status



- Situation is dynamic - sit around and wait, or adapt!
- OVERALL the operations mode is set proposed by APS-ANL and approved by DOE

No User - Staff Only

- Increase Development and HPCAT-U test experiments
- Remote training and educational courses

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**Consider mail-in
Experiments**

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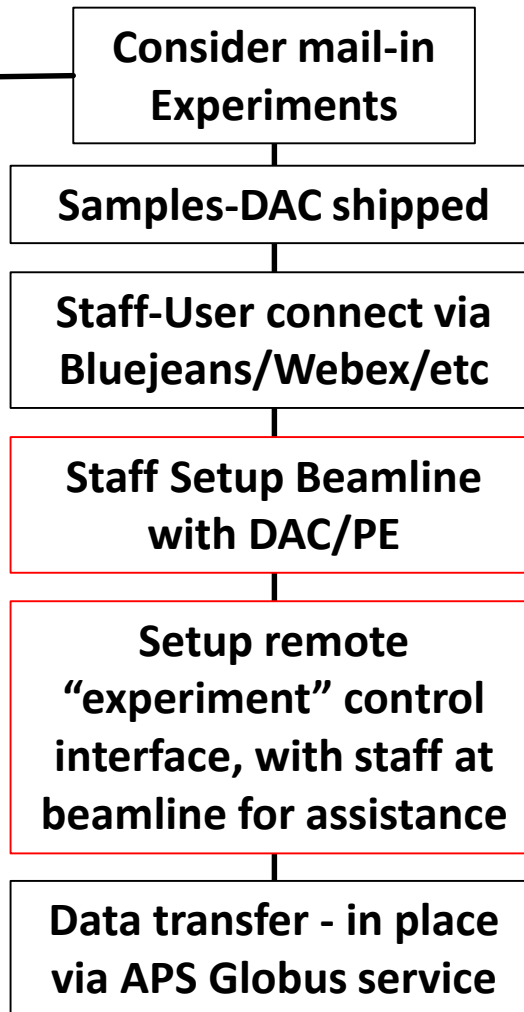
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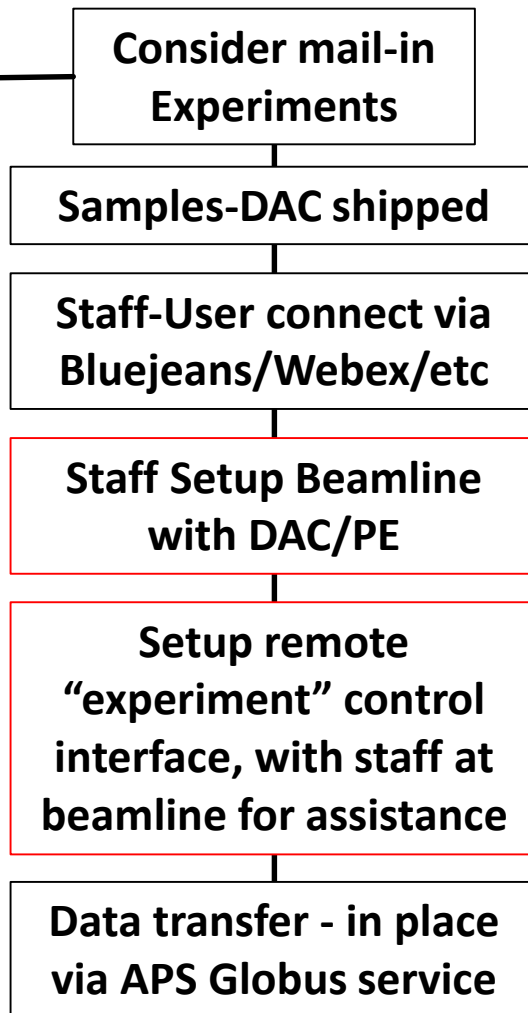
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**Setup remote
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No User - Staff Only



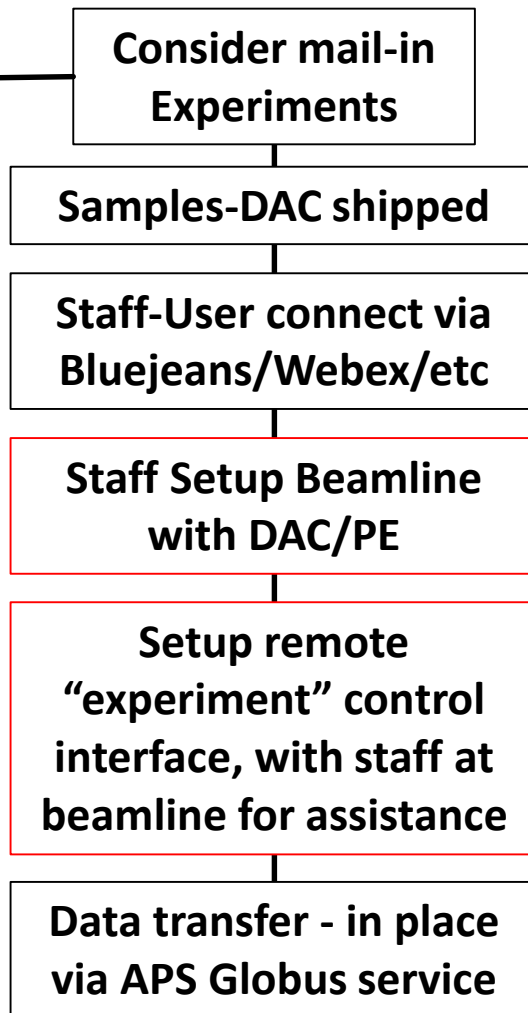
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What's Needed

- Convince Staff and Users
- No Liability agreement
- Coordinating Staff

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- Can we give outside users remote access (e.g. firewall restrictions, etc.) and control of stages and user controls interface
- Can we improve our experimental setup (e.g. revolver setup, robotic arm, etc.)

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Setup remote “experiment” control interface, with staff at beamline for assistance

Data transfer - in place via APS Globus service

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Limited experimental scope but continued progress

Timeline and status

- **Late June we came back in “Limited Operations” mode**
 - Limited # of staff (~50% max or less); limited work hours; various safety components in place
 - Started preparing *remote user support infrastructure*: administrative, engineering, and PPE, etc.
- **Early July**
 - Still in Limited Operations mode
 - Hosted first ever remote-user operations
 - We are still in this mode (more on this later)

HPCAT Sector -16 Remote Experiment Progress



Extended and movable shielding introduced to provide additional personnel protection



HPCAT staff onsite setting up remote user, while wearing necessary PPE.



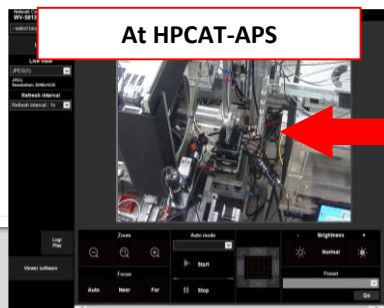
Onsite staff (L), with aid of newly installed cameras (R) and other equipment, have worked jointly with APS to make sure that experiments can be performed safely and efficiently.

Prior to COVID situation, HPCAT had never hosted a remote experiment.

- **Mid-March 2020** HPCAT was placed in full shutdown
- **Mid-June** limited operations resumed
- **~\$50K supplemental funding** provided by APS-DOE to acquire cameras and other equipment to aid in remote user support
- **July 12th** HPCAT **started first ever remote user experiment operations support**
- Typically HPCAT operates four simultaneously functioning experimental beamline-stations and multiple experimental laboratories - today, Aug-2020, we are only able to offer ~40% of that, but steadily pushing to increase access to broader set of capabilities by 2020-3
- So far, HPCAT has supported GUP and LLNL/LANL/SNL/NNSA-Stockpile Stewardship Academic partner users in executing numerous experiments

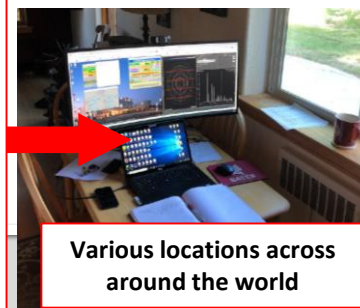


NEW Pneumatic-DAC-changer has been developed in order to increase user and support efficiency.



At HPCAT-APS

NX NoMachine Technology allows HPCAT-APS and Users (from far and near) to connect remotely and have full control of experiment



Various locations across around the world

Currently....

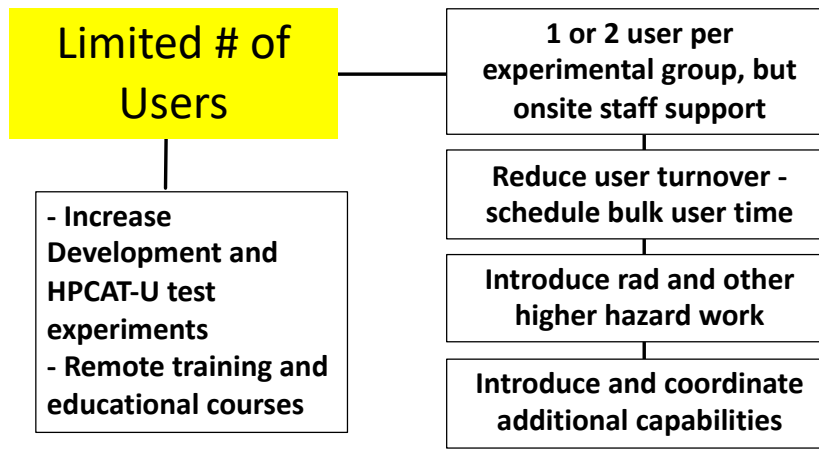
ADVANCED PHOTON SOURCE (APS) EXPERIMENTAL ACTIVITY ROADMAP

MINIMUM SAFE OPERATIONS			LIMITED OPERATIONS	NORMAL OPERATIONS WITH FLEXIBLE TELEWORK	NORMAL OPERATIONS
Current State	Expanded Mail-In and Remote Access	Current State	Expanded Operations i.e. "Limited Operations Plus"		
Target number of people onsite at the APS (incl. CAT operations staff)	Approximately 40 to 65	Approximately 50 to 90	Approximately 75 to 140	Approximately 125 to 270	Approximately 200 to 350
				Add: <input type="checkbox"/> Preference remains with remote access experiments <input type="checkbox"/> Argonne employees approved for site access <input type="checkbox"/> Other requests for onsite users will be reviewed on a case-by-case exception basis, requiring submittal to and approval by the PSC ALD. <input type="checkbox"/> Strong preference to 1 user per ESAF; onsite users capped at 2 users per ESAF	Add: <input type="checkbox"/> Expansion to national and international users, as approved and permitted by Argonne site access policy <input type="checkbox"/> All users permitted onsite
User presence	Remote access only	Remote access only	Remote access only		

- **We are still in Limited Operations mode**
 - Restrictions on staff on site
 - NO OUTSIDE users
 - No rad, explosives, and other higher hazard materials
- Initial plan to go to Normal with Flexible Telecommute was not approved by DOE
- **Proposal submitted to ANL/DOE Aug. 12 to expand number and types of experimental activities permitted at the beamline in limited operation (called "Limited Operations Plus")**

Moving Forward

- We are scheduling for 2020-3 cycle, Oct. 01 - mid-Dec, in Limited Operations mode
 - More from Zulu on this
- Prepare for possible approval for **Limited Operations Plus**



- Stay dynamic and anticipate changes to either Normal or Essential operations mode and adjust accordingly!