**Minutes and Action List of July 22 2019 ArgonCube2x2 Instalaltion Meeting**

* Attendance: Steve, Jim, Gary, John, Min Jeong, Sai and Ting
* To install Minerva module on to support rail at lower height, we will cut the bottom selection of one of the Minerva strong back
  + The wheels on the strong back are only needed to transfer the module from vertical to lay-down position.  We do not need the wheels to move module from support rail to storage rack in the hall
  + We have multiple (three?) sets of strong backs. We only need to modify one.
  + The modification is to be done by John's group
* The current design for bookend installation is to attach it to the end of support rail. For our detector configuration, the bookend needs to be at the downstream end of the rail.
  + The bookend is to be installed and aligned first
  + Positions of the modules are referenced to the bookend. The nominal gap between the module is about 0.3" and can be adjusted by shimming
  + Installation and alignment process involve survey group. Need to setup their survey equipment (laser tracker and targets) first.
  + It does not seem possible to adjust module position after installation.
* Storage rack for recycled Minerva modules is to be located at upstream end of the hall and on the east side. We need to put a temporarily cover or drip ceiling over it.
* Minos bookend at very downstream end can be removed by cutting it off from MINOS support rail.
  + We may need to get it off to leave more access room to reach top PMT of the reconfigured MINERVA modules.
  + Possibility also to reposition the existing MINERVA access platform there or build a new platform
  + Steve is to look more on the requirement to access top PMTs
* In the current 2x2 layout, there is about 1m gap between the downstream section of Minerva and the MINOS  overhead bridge. We will try to address a few questions before final decision
  + Is the space enough for potential high pressure gas TPC prototype work?
  + Is the space enough to install tooling (like a genie lifter) to access top PMT?
  + Other potential  space need at downstream end of the hall?
* For Minerva support rail posts and brackets, we decided to continue the way the bracket orientation -- the brackets are pointing inward.
  + The pitch of the support posts is about 60". The thickness of 24 module is about 41" so there is no interface.
  + By keeping the bracket pointing inward, we will not need to worry interface issues on the west side for equipment under the catwalk.
* We also decided to use longer rail (default 10') for the two sections of rail support.
  + The default rail length is 10' long
  + There seems no access issue for cryogenic equipment around the rail -- Min Jeong is to confirm
    - cryo-cooler is to be under the catwalk
* We have a brief discussion on top access platform and its support beams
  + The platform is to cover the area between the two minerva sections
  + Long beams crossing two catwalks which are about 5m apart
  + If possible, we should avoid to have additional vertical column
* We also have a brief discussion on ways to reach top PMT for downstream modules. Options mentioned are tall ladder, genie lifter, re-install existing minerva access platform, new platform
* Action task list:
  + Ting to find out the possibility of additional detector component at the downstream end
  + Min Jeong to find out whether longer rail have impact on cryogenic layout and access
  + Steve to find out PMT installation support requirement
  + John and Jim to collect installation procedures and JHAs and give to Min Jeong to post on google drive.
  + Next meeting will be August 5th.