

RTS Status February 2024

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ASIC QC at 77K

- BNL DAT board
 - Has full FEMB capability plus analog input and digital testing facilities
 - 18 clamps on mezzanine boards for LArASIC(8), ColdADC(8), ColdData(2)
- MSU Robotic Testing System (RTS)
 - Two DAT boards and chip trays accessible to Robotic arm & chip manipulator
 - Robotic transfers chips from trays to DAT board clamps and back to trays
 - Each DAT board is suspended in a shallow pan that can be filled with LN2
 - DAT board in a gaseous Nitrogen atmosphere throughout a cryogenic cycle
 - Pan has a Plenum/Lid with heaters and fans to purge/dry and return DAT board to room temperature. *Being changed to external heat source*

RTS Status

- Robot and Cryogenic operation tested Summer 2023
 - 50 Cryogenic cycles loading and unloading (tray-socket) 8 test chips each cycle
 - Contact resistance increased at 77K, but no opens (1-2 Ohm maximum)
 - Resistance level should be OK for QA testing.
- One Frame and Robot (prematurely) shipped to BNL (Dec. 2023)
- Robot safety issue (UL vs CE) has to be cleared locally at National Labs.
- Remaining parts for WARM operation shipped to BNL this month
- Two additional (now Cryo) RTS units being assembled at MSU
 - Parts to be delivered to BNL in March to upgrade to Cryogenic operation.
 - Two additional Cryo RTS Units ready at MSU in March
 - MSU and Fermilab to get these RTS units.
- Parts (incl. Robots) for 3 additional Cryo RTS units have been ordered
 - Production will start in April
 - Deliveries early summer 2024.