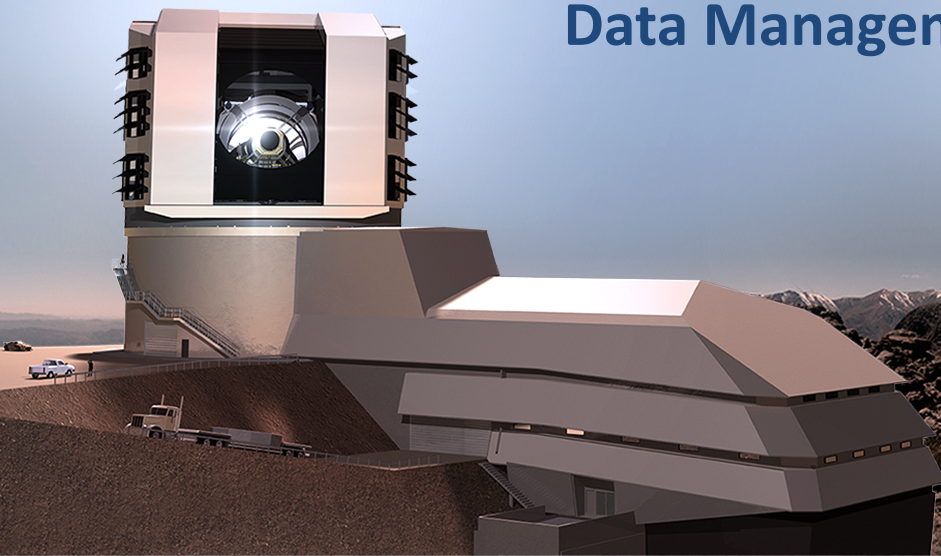


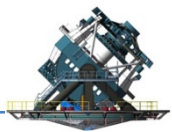


# LSST Summit and Base/IT/Networks Status

Jeffrey Kantor  
Sr. Manager

Data Management Leadership Team Meeting  
November 7, 2018

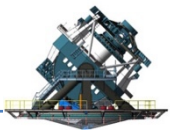




# Agenda



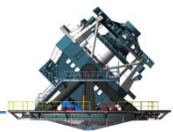
- Brief overview of Networks status (Summit, Summit – Base, Base – LDF)
- Brief overview of Summit and BDC construction status and move-in schedule
- Identification of planned deployments of DM equipment to BDC, visits, tests/rehearsals in FY19 (and IT support required)



## Summit and Summit – Base Network



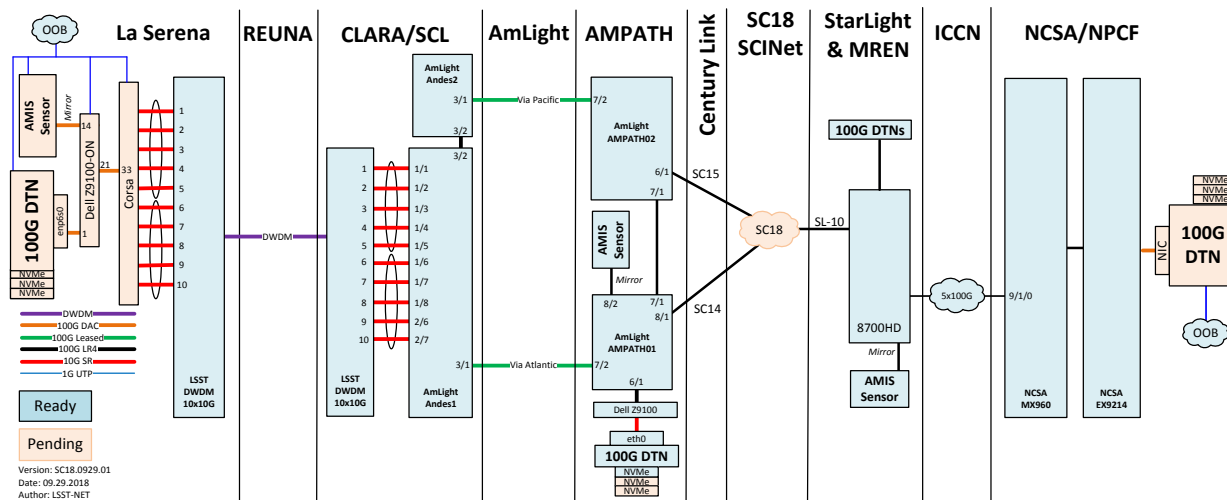
- Summit Network installed and first users on AURA DWDM to La Serena
  - Temporary, trial mode
  - A number of steps still needed for “production”
  - Until then latency will be similar to legacy network
- Auxiliary Telescope (AT) fibers installed between calibration hill and Summit Computer Room
- Receiving bids for repairs to posts on AURA property on November 12, update/repair posts Dec ‘18, then turn over to AURA Ops Jan ‘19
- AURA Ops contract for maintenance Mar ‘19
- Summit – Base network is now 2 x 100 Gbps (AURA DWDM)
- Bandwidth increases to 6 x 100 Gbps Jun ‘19 (LSST DWDM)

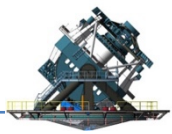


# Base – LDF 100 Gbps Network Demonstration



- Following up on the first successful transfer of digital data over LSST/AURA fiber optic networks from the Summit Site on Cerro Pachon, Chile to the Base Site in La Serena, Chile and on to the Archive Site at NCSA in Champaign in December 2017, that achieved 44 Gbps sustained data rate.
- 100 Gbps demonstration from La Serena – NCSA November 14, during Supercomputing 2018. Data set is 10 TB of DECam public data. Using SCInet connections from Miami – Dallas – Chicago. DM-provided “watch” JupyterHub application will be used to monitor transfer from Data Transfer Node (DTN) to GPFS file-system/disk.

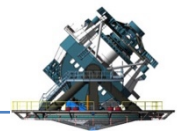




# Base – LDF Bandwidth Evolution



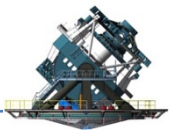
- FY19 links
  - LS – SCL: 1 x 100 Gbps (science data, testing), 4 x 10 Gbps (non-image data, AURA shared), 1 x 4 Gbps Secondary
  - SCL – Boca: 1 x 100 Gbps
  - SCL – MIA: 2 x 100 Gbps
  - MIA – other US locations: 2 x 10 Gbps (internet2)
- FY20 links
  - MIA – ATL – CHI 2 x 40 Gbps (Esnet)
  - LS – SCL Secondary increases to 40 Gbps
- FY21 links
  - MIA – ATL – CHI increases to 2 x 100 Gbps (Esnet)
  - LS – SCL REUNA Pursuing increasing Secondary to 100 Gbps



# 1HFY19 remaining Major Activities/Milestones

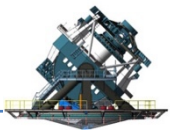


- Summit Computer Room network/server installations
- Coating chamber control/campus network – November '18
- EFD – December '18 – Jan '19
- ECS, DIMM, Weather Stn servers – Jan '19
- Activation of Spectrum Link (Sao Paolo – Boca Raton) Jan '19
- Execution of ESN Net Agreement Jan '19
- M2 control/campus network – Feb '19
- Aux Telescope control/campus network – Feb '19
- TMA control/campus network – May '19
- ATS control/data (DAQ, CCS, TCS, forwarder) – May '19



# VIEW OF NORTH FACADE OFFICE BUILDING AND DATA CENTER

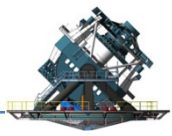




# Air Return, Cable Trays and Ducts



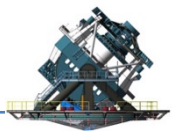


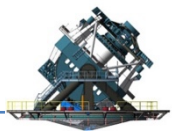


# External HVAC Piping and Connections

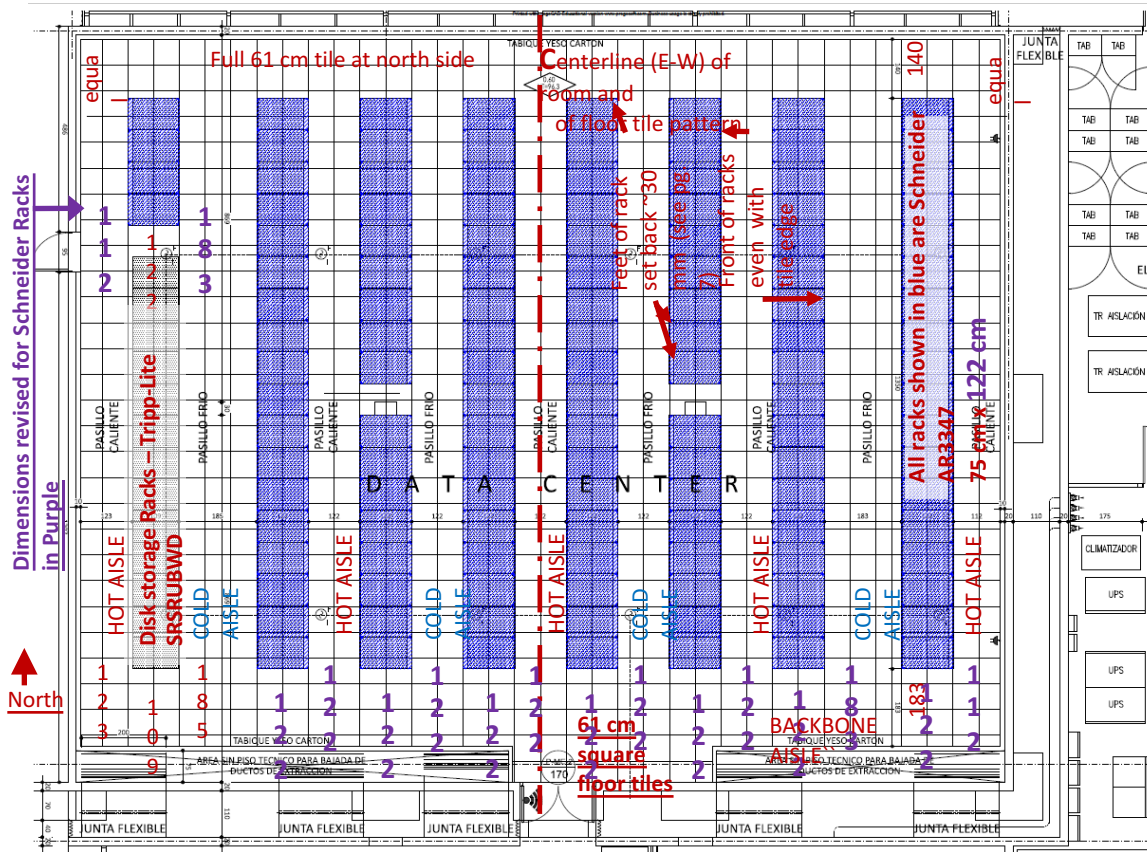


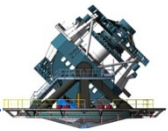
# Internal HVAC Piping and Connections



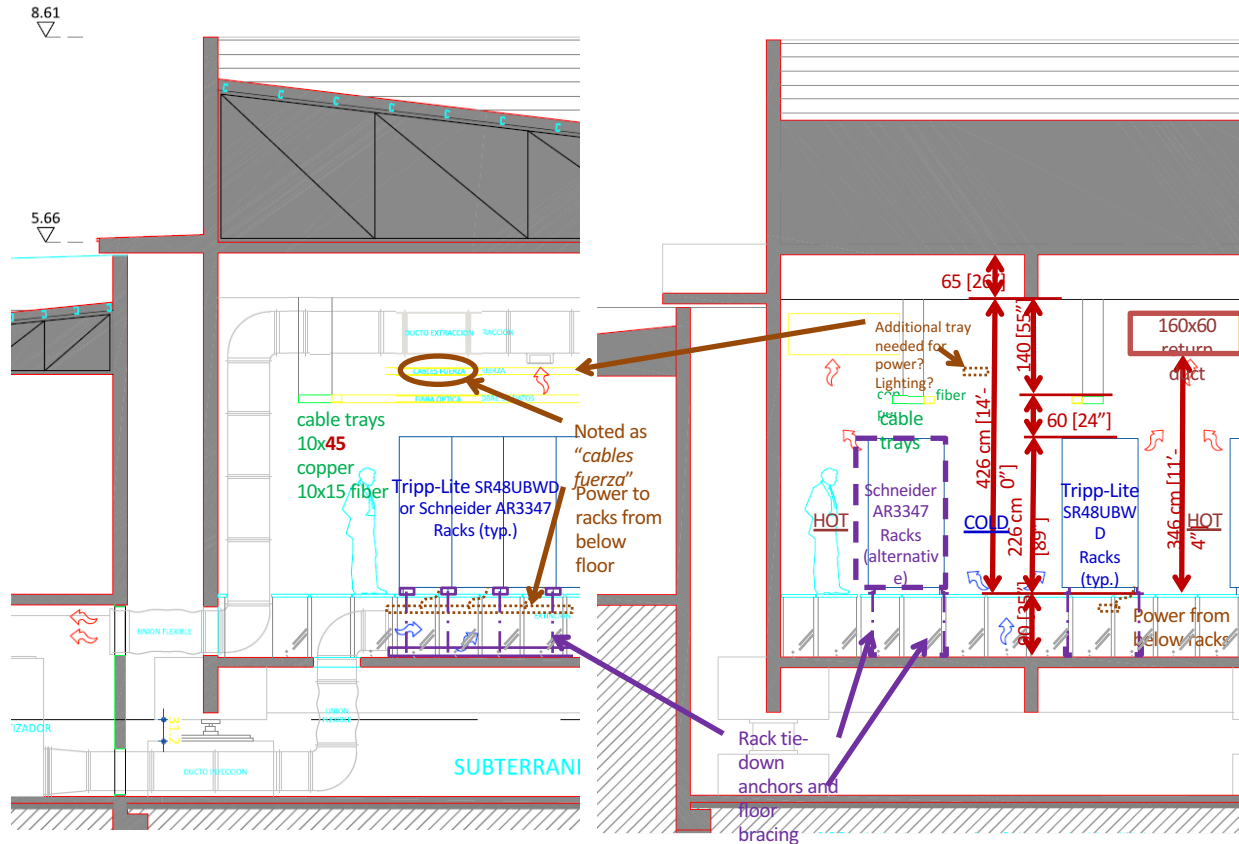


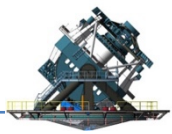
# Base Data Center Rack Room Layout





# Section Diagrams and Height Dimensions

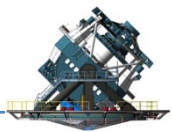




## 1HFY19 Base Data Center Dates



- Procure mechanical floor, FY19 racks, PDUs, LAN – Jan '19
- Expected full occupancy date - Feb '19
- Rack, PDU installation - Mar '19
- Move equipment out of existing computer room for remodeling – Apr '19
- Install LAN in computer room – May '19
- Install DM servers in computer room – Jun '19
- Install LSST DWDM Summit – Base – Jun '19



## 1HFY19 Chile Visits



- Camera Team (Camera Rooms, Annex) – Nov '18
- Dave Mills (EFD, Aux Instr, M2) – Jan '19
- Mike Huffer (AT DAQ) – TBD
- Tony Johnson (AT Controls, Camera Rooms, Annex) – TBD
- AT Team (AT Pointing Tests) – Feb '19
- (YOUR VISIT HERE!)