SALT RSS-NIR MID-TERM REVIEW MAY 20 & 21, 2009

SALT FACILITY INTERFACE CONTROL DOCUMENT

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OVERVIEW

- Interface Management
- Key Interface Control Document (ICD) Issues:
  - Optical Requirements
  - Environmental Requirements
  - Data Processing & Communications
  - Thermal Control & Power Distribution
  - Overall Envelope
  - Mass & Power

INTERFACE MANAGEMENT

- Interface control between SALT and RSS-NIR managed by:
  - Bi-weekly teleconferences between SALT and RSS-NIR.
  - SALT RSS-NIR Questions document for interface questions and responses.
  - RSS ICD then formally documents requirements and interfaces.

OPTICAL REQUIREMENTS

- ADC Optical Performance
  - The ADC needs to meet the VIS/UV specification without degrading the native dispersion of the atmosphere in the near infrared.
- Moving Baffle Gold Coating.
  - Gold coat back of moving baffle to reduce thermal emissions.
- Calibration Source Change.
  - Replace the "red" light guide with a Vis/NIR light guide.
  - Replace one of the single-gas Pen-Ray lamps with a new mixed-gas lamp.
- SAC Stray Light.
  - Add reflective gold foil to backside of M4 and M2 to reduce the thermal emissions.

ENVRIONMENTAL REQUIREMENTS

- Glycol needed for electronics cooling in:
  - Electronics boxes on RSS support structure
  - Electronics box(es) on Top Hex structure
  - Igloos at base of telescope
- Clean Air or Gas
  - Clean, dry air for purge air and actuators
  - Instrument air dried to < -50°C dewpoint & purified
  - Very clean to prevent optics contamination

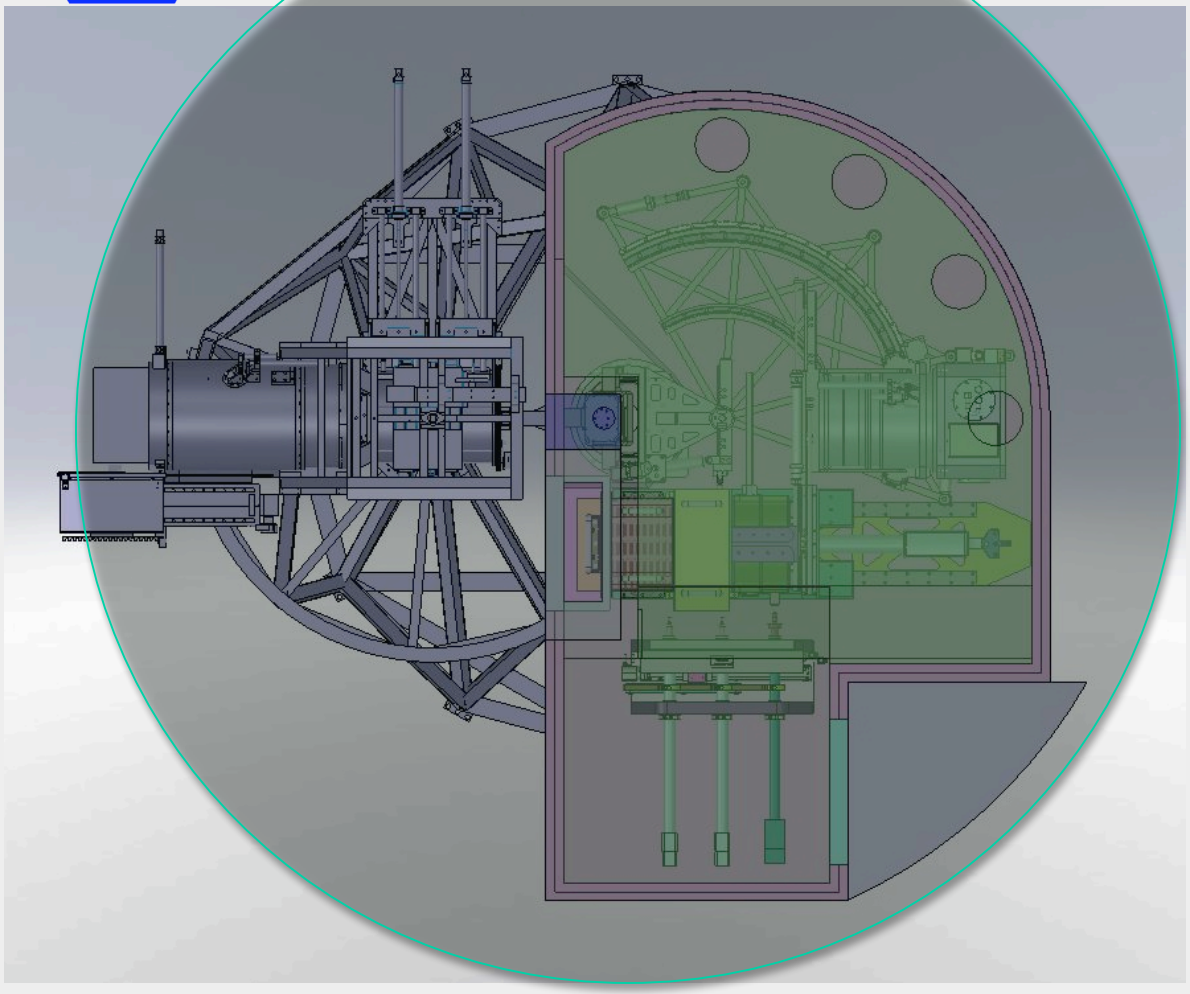
DATA PROCESSING & COMM.

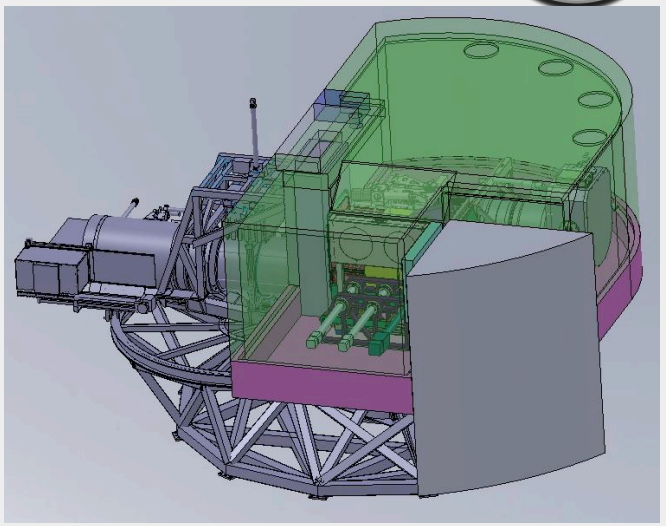
- Data Path from SALT Facility to Cape Town.
  - Data path from SALT facility to the outside world capability is 384 kb/s.
- Data Archiving capability at SALT.
  - What is the data archiving system at SALT? (In GBytes)
- Labview Version Update and Compatibility.
  - Support for updated versions of Labview.
  - Current version is 6.1, NIR to use 8.6.
  - SALT communications protocol allows different versions of Labview by moving from data sockets to a web based protocol.

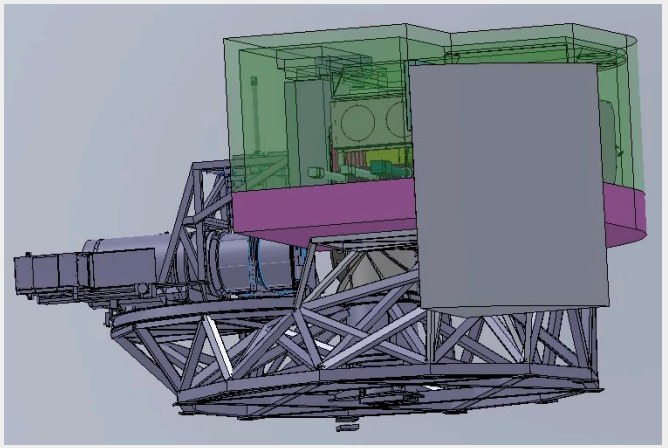
THERMAL CONTROL & POWER DISTRIBUTION

- Protected Power Distribution:
  - Emergency shut down of RSS-NIR: What is the power distribution system for "critical power" for a main grid failure?
  - What is the UPS capability and how much is it loaded at the current time?
  - Are there signals that indicate what power source is being used?

OVERALL ENVELOPE







MASS & POWER

SALT NIR INSTRUMENT MASS AND POWER BUDGET TABLE			
INSTRUMENT SUBSYSTEMS[1]	PDR MASS (kg)	MTR Numbers	
Dichroic Beamsplitter	14		
Doublet & Fold Mirror Assembly	20	58	
Grating Assembly	10		
Fabry-Perot Etalon Assembly	26	20	
Polarizing Beamsplitter Assembly	7	8.2	
Camera Articulation Mount	30	37.2	
Camera/Dewar Assembly	27	47	
Strorage Optics	28	60	
Control Interface Box	30	30	
PXI Chassis Enclosure	21	21	
Predewar Assembly[2]	51	45	
Wire Harness	12	12	
Cooling Lines[4]	10	10	
Misc (10%)	29	17	Misc (5%)
SUBTOTAL	314	366	
GROWTH (20%)	63	37	***GROWTH (10%)***
TOTAL	**377**	**402**	