General Update

- SPR
  - Network changes
    - IPMI, domain setup
  - SNAPs
    - Verification and testing of gateware (together with hashpipe implementation)

- ATA signal chain verification

  - Investigating 60Hz in 2H
    - Open up 2H and inspect log-periodic part of feed.
    - Move 2H (018) log periodic feed to base of 3C.

  - Power drop investigation ISM 902-928MHz

- Feed Firmware

  - Finishing firmware tests in Lab (update from Janusz)
  - Testing firmware 5.4 on one feed in the field

- Observation

  - Developing capture code for voltage stream design (dada / hashpipe)

Antonio Feed update

- Transport two log-periodic feeds (4J and 1K) to Minex for repair (next Thursday Friday).

- 3C – replacement of pyramid with new tip-link and modified, preconditioned coaxial wiring.

  - Gold plating
  - LNA to Tip coaxial assembly
  - Inner feed assembly
  - Tip-link assembly
  - Transport to HCRO
  - Installation into feed base, update of firmware
  - Initial testing / installation on antenna/ TSYS

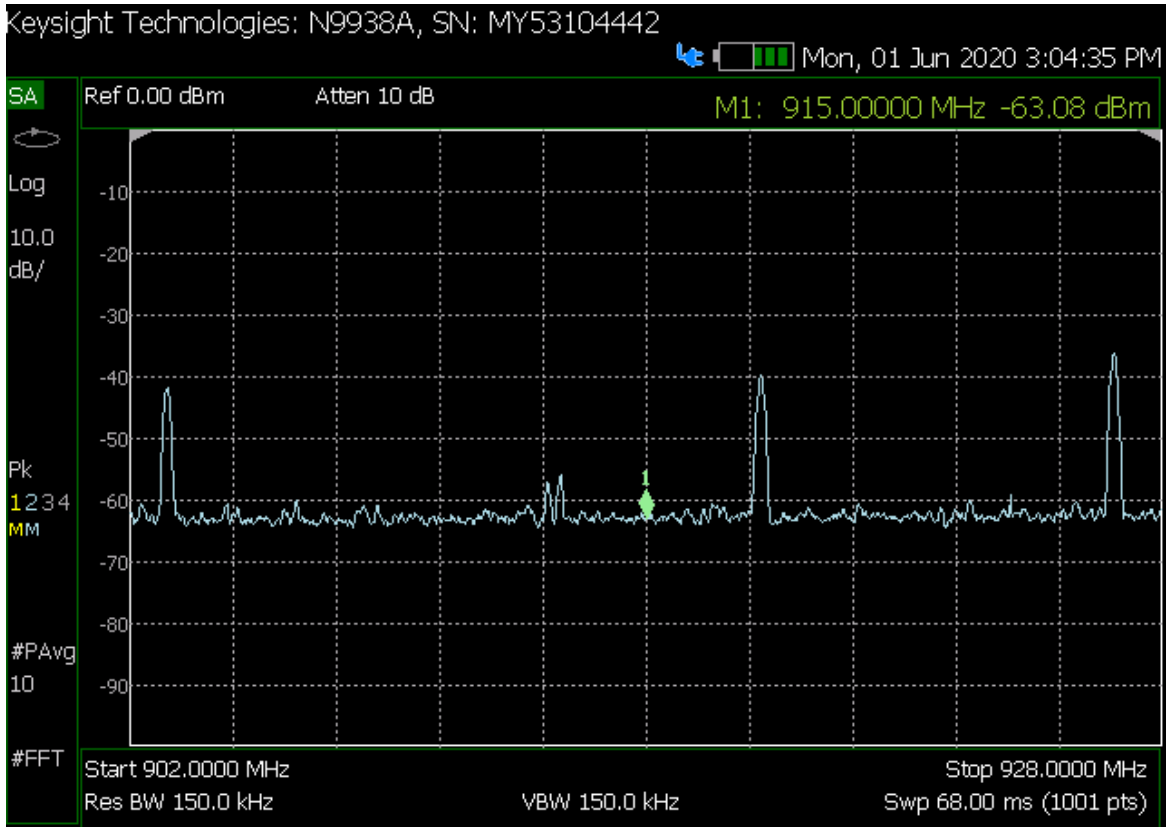
- 4J – replacement of base plate and pyramid with new tip-link and modified, preconditioned coaxial wiring.

  - Replace base plate (HCRO)

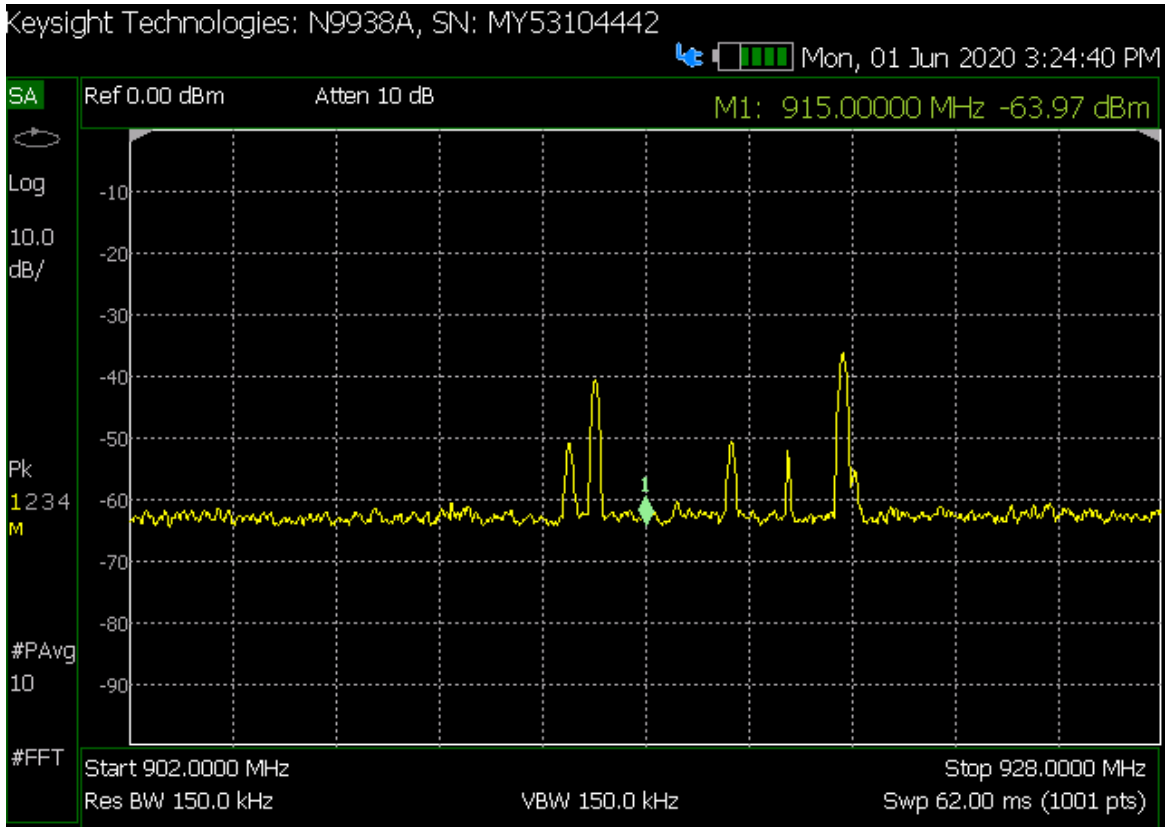
  - Gold plating
  - LNA to Tip coaxial assembly
  - Inner feed assembly
  - Tip-link assembly
  - Transport to HCRO

- The problem is more complicated as we initially thought.
  - No significant difference, also signal levels are to low for a 1W transmitter at 50m distance.
  - 1W transmitter, -10dBi TX, +45dBi RX, -65dB path loss ≈ **0dBm**

10min obs: with aluminum shield

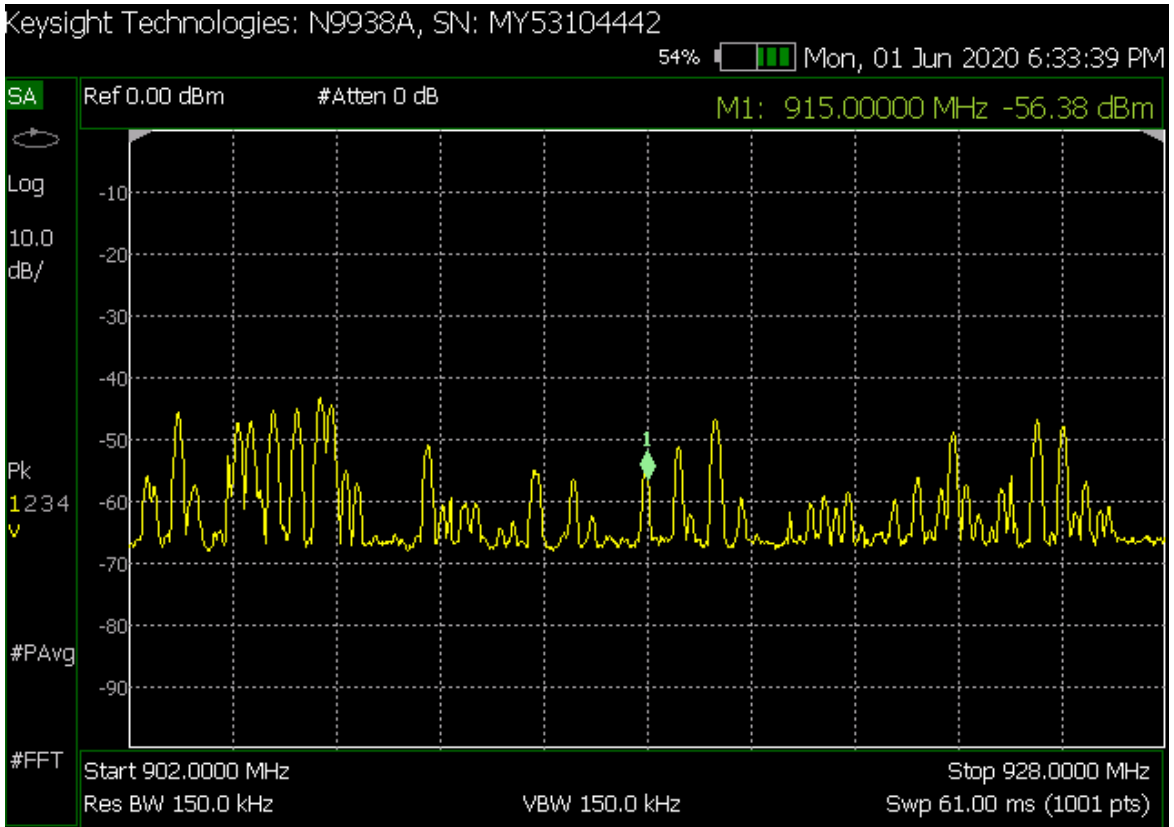


10min obs: without aluminum shield

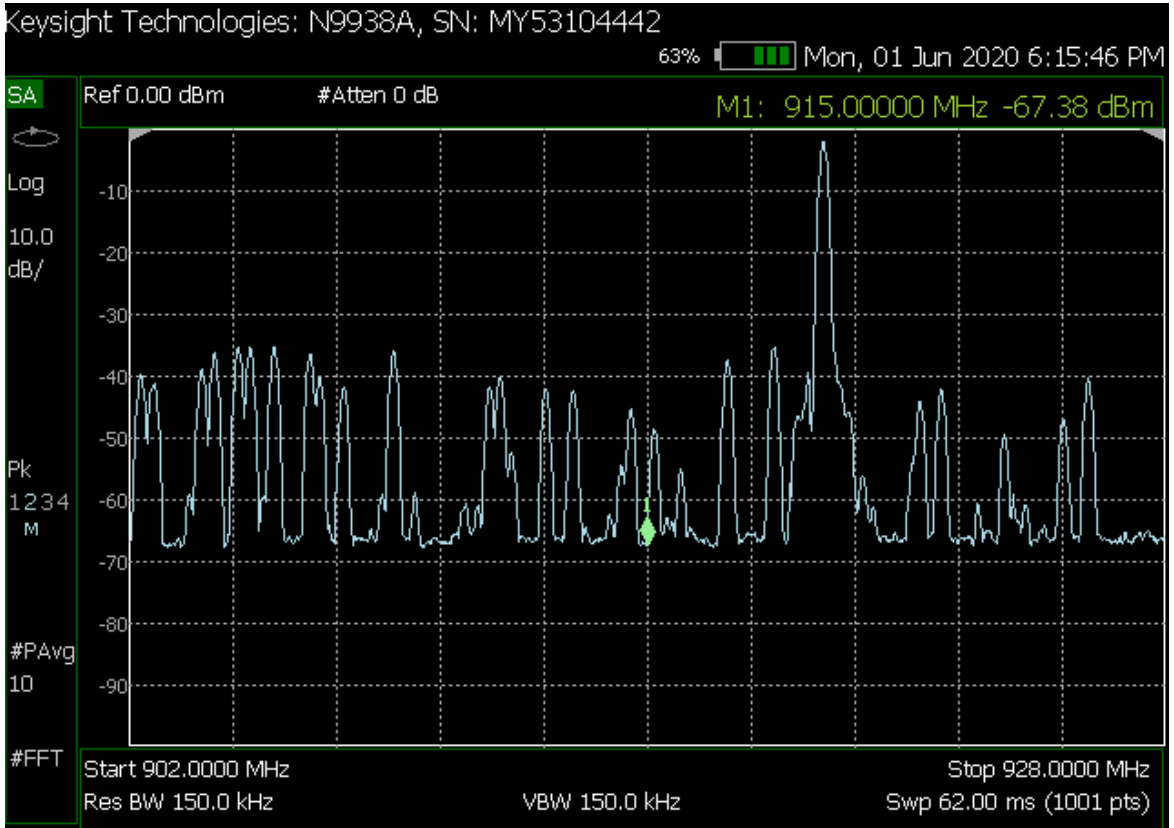


- The problem is more complicated as we initially thought.
  - Measurement at different location

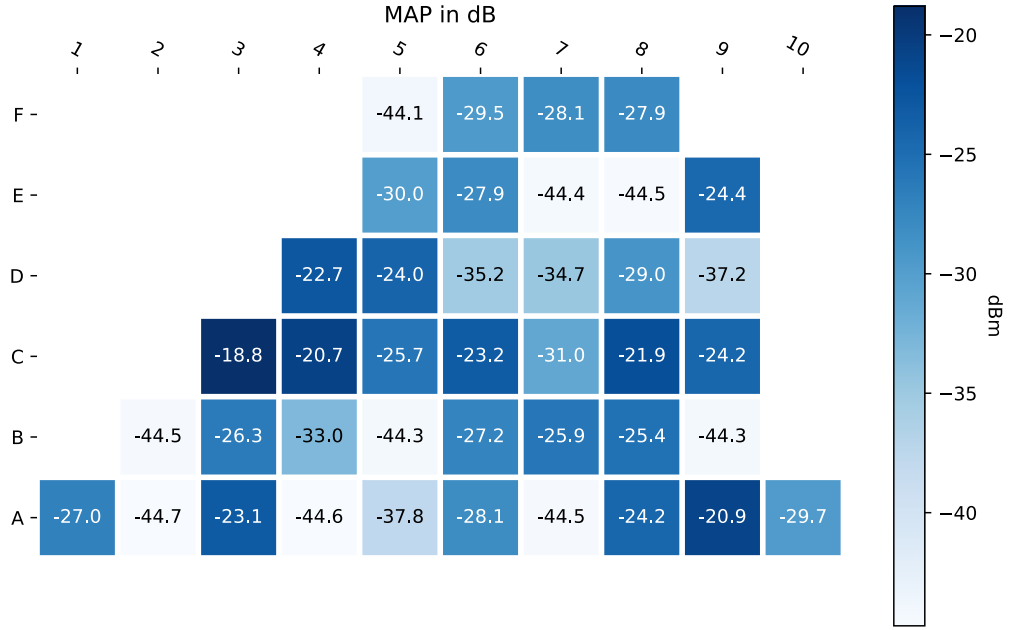
15min obs: pointing at SM



15min obs: pointing away from SM



- The problem is more complicated as we initially thought.
  - **Proposed next steps:**
  - Setup a transmitter at main lab to reproduce the power drops which we see in the ATA. (first test indicates ≈ 30mW @ 920MHz) is enough to compress gain.
  - Properly calibrate test setup using the omni directional antenna as a known source and performing a beam pattern measurement at a defined distance.
  - Using the omni directional antenna to redo a heatmap measurement at 902 - 928MHz.



60Hz investigation 2H

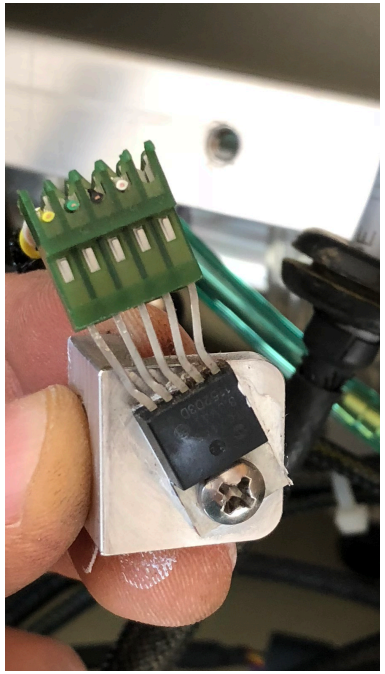
- Tested LNA bias supply
- Tested PAM supply
- -> PAX box is fine

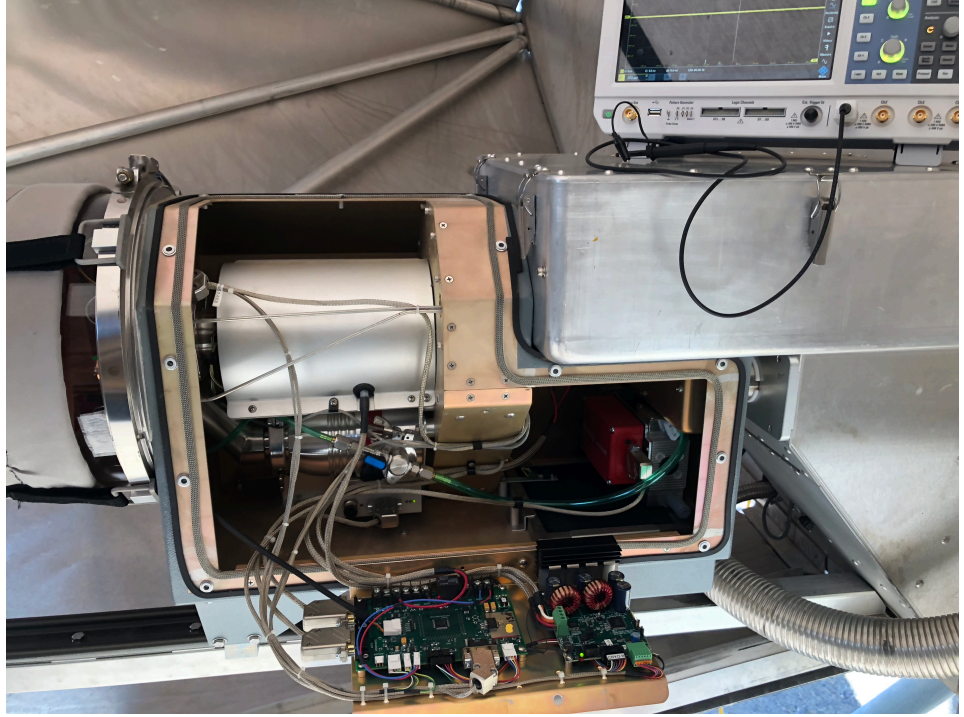
- Spend another two days looking at feed (018)

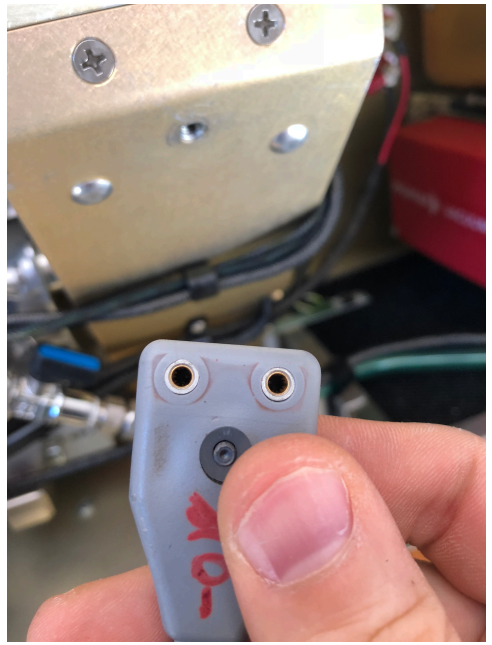
- Compared the voltage drops I see on 2H with another antenna to see if it is normal.

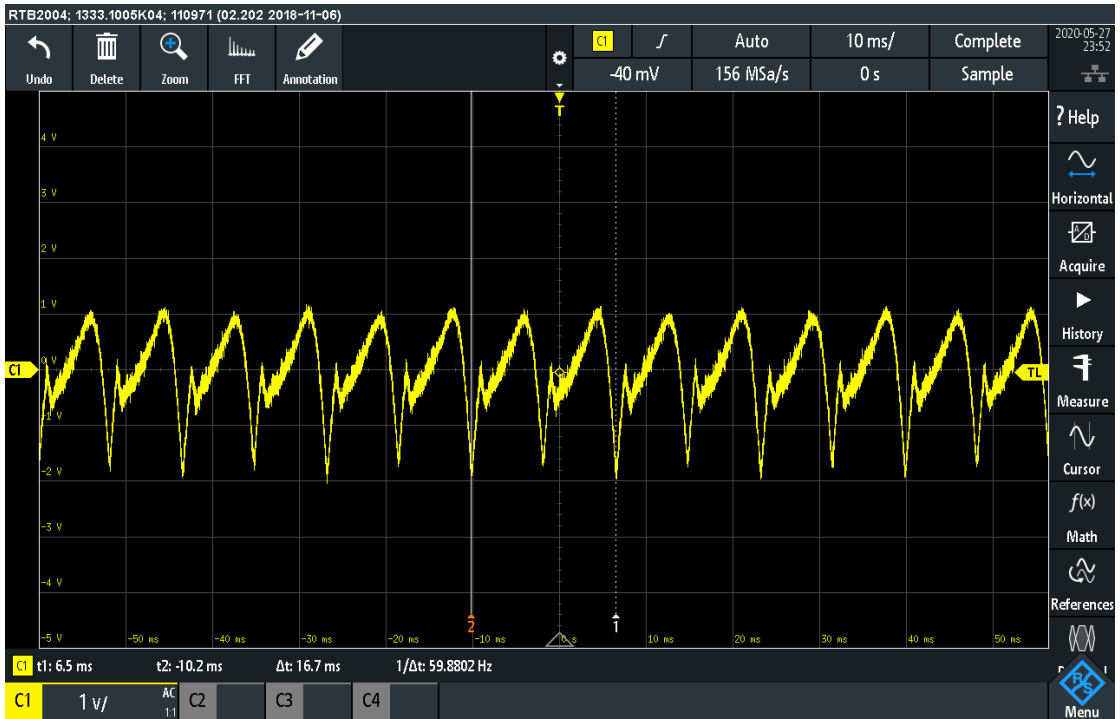
- Temp sensor were not isolated.
- Ground bridge was not there at ON OFF switch

- All those things have been fixed and tested.
- Feed worked again, however 60Hz was still there.









Feed Lab Progress

- Cleanroom will be delivered today.
- Moved feeds from Main Lab into Feed Lab
- Took off feed 18 from antenna 2H

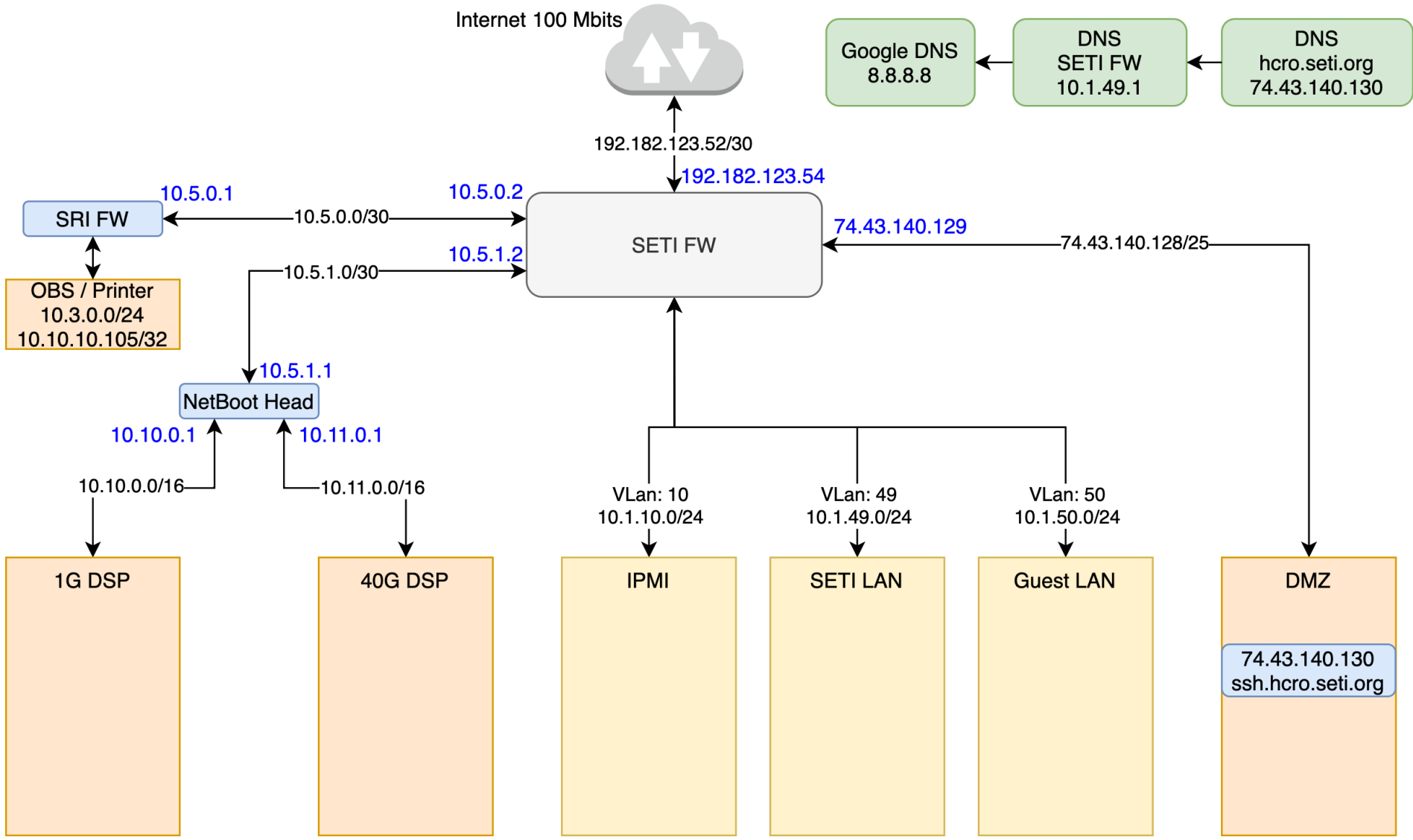
Update

Network changes:

- DNS implemented
- Network range changed
- Integrated 40G NIC into 100 TB storage

ToDo:

- Setup compute node to analyze data
- Implementing of VLans and updating of switch configuration



Update

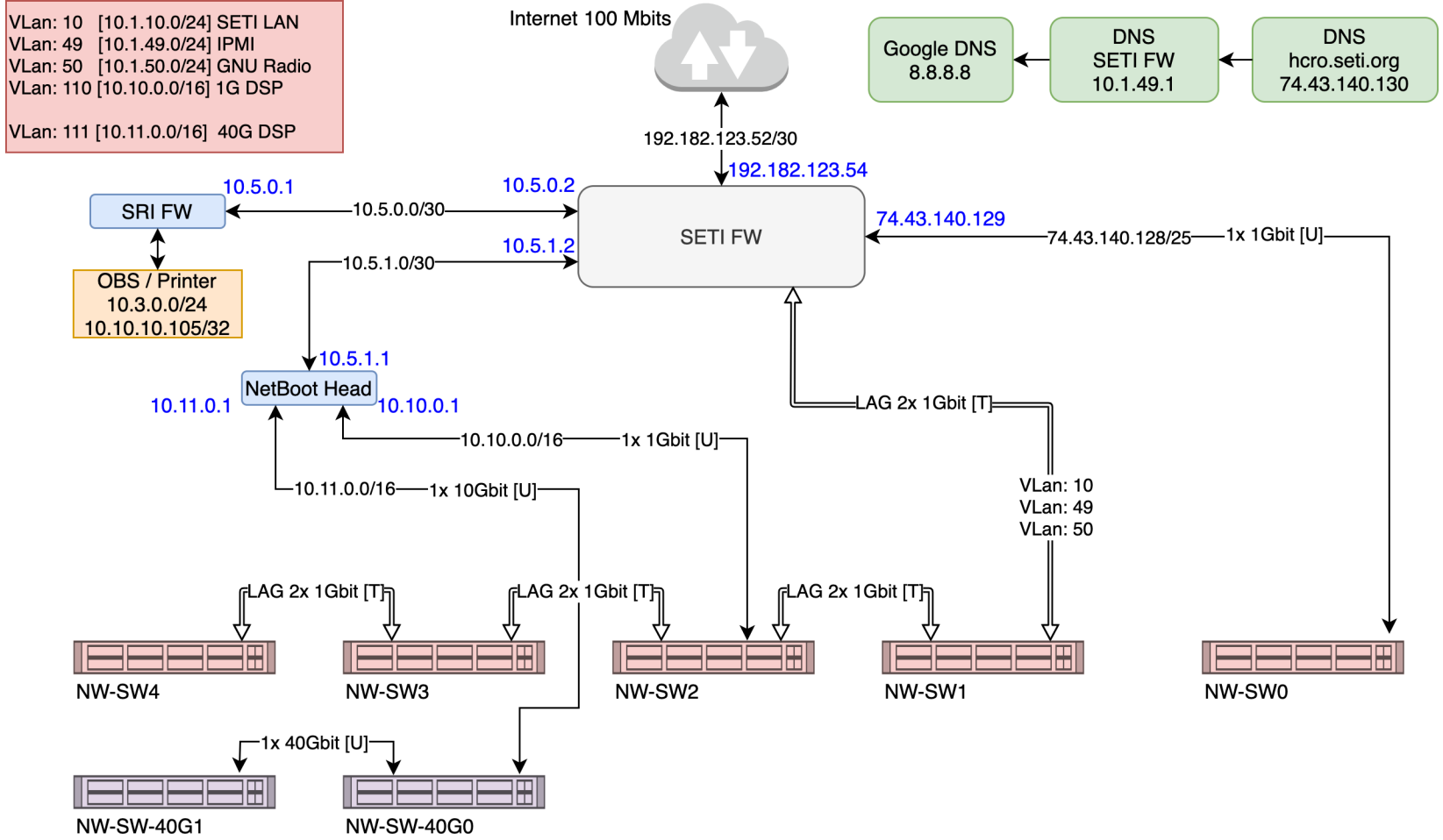
Network changes:

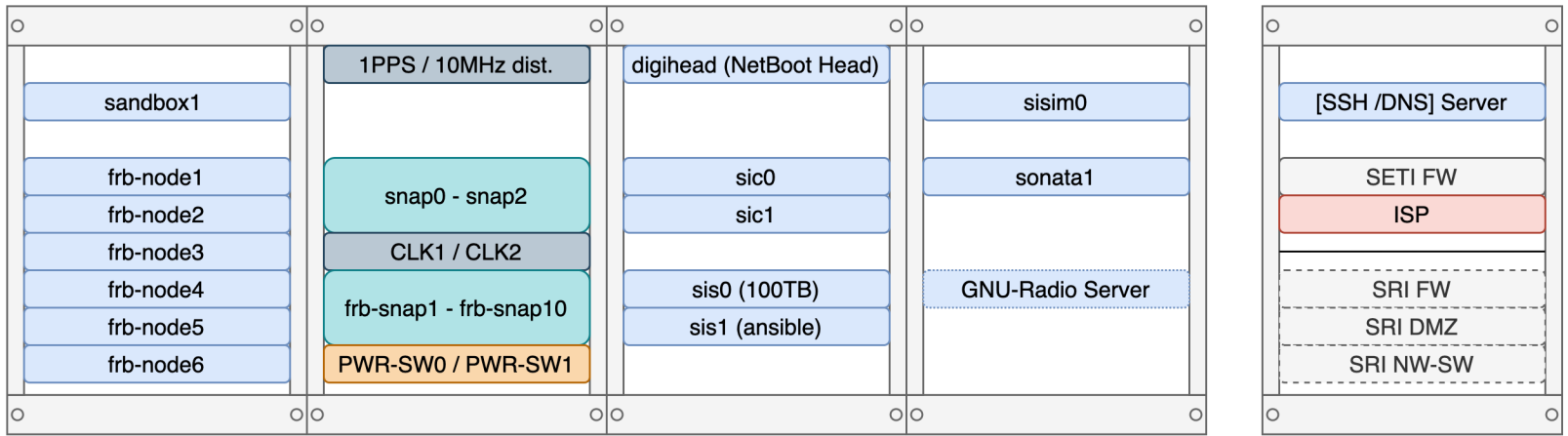
- DNS implemented
- Network range changed
- LAG 2x 1Gbit implemented
- VLANs implemented

- Setup SIC1 to analyze data

To Do:

- Setup IPMI
- Setup DNS domain (hcro.seti.org)





Student Projects and Internships:

Name	Type	Duration (dd/mm/yyyy)	Description	Status
Olivia Durrett	Internship	15/06/2020 to TBC	Astronomical observations and data analysis of pulsars and FRBs	
Sarah Schoultz	Internship	01/07/2020 to 15/10/2020	Outreach, update of posters at ATA, local RFI monitoring	
Daniel Allspach	REU SETI	07/06/2020 to 15/08/2020	Astronomical observations and data analysis of pulsars and FRBs	
Ellie White	REU Berkeley	08/06/2020 to 14/08/2020	GNU Radio Enabled Capabilities for RFI Monitoring and Beamforming	
Hellen Peng	URAP Berkeley	24/02/2020 to 01/05/2020	Software development to control digital step attenuator for IF power leveling	Finished