



800 MHz Users Meeting

March 16th, 2023



LID Status Update & Radio Counts

Agenda item #4



LID Status

- Remaining LIDs: 35
 - Issuance of LIDs will be looked at **case by case** and prioritized accordingly. Please allow for a few weeks to get back to all requests.



Radio Counts

- Reminder our L3Harris Sales Representative is Claire Pender.



- Thank you all for your purchases!
- 3923 radios ordered out of 5097 contractual commitment of the P25 Radios
 - We have reached 76.9% of our contractual obligation
 - Reminder – Harris to be onsite for installation starting NOW.
 - EVERY Radio in our system requires the One-Touch “ Make ready” for new system
 - Mobile Installations (Don’t forget your warranty is on hold until the device goes into service) .
 - Please have radios purchased prior to these events to be ready for the System cut-over.



System Status Update

Agenda Item 5



System Status Update

- Unplanned Outages

- System & Site:

- 3/15/2023- Reset on EMG, convergence between Cores lessened
- 3/14/2023- Time sync issues between A.1 & A.7 cores- consoles issues
- 2/24/2023- Washoe County TAHOE Simulcast Outage.
- 2/19/2023- Shaffer Outage
- 1/19/2023- Virginia Peak power amplifier replacement and channel repairs
- 1/20/2023- 7705 DS1 cards failure at Slide
- 1/18/2023- Slide Mountain power outage
- 1/11/2023- Slide Mountain in Stand-Alone conditions
- 1/9/2023- Slide Mountain power outage
- 1/6/2023-Peavine power outage
- 1/4/2023- Power outage to Mt Rose, Peavine, Red Peak, Virginia Peak, Slide & HT to HT issues on Metro simulcast
- 1/3/2023- Mom PC reset & rebuilt
- 1/4/2023- All consoles heard static on all talk channels, lost time synchronization to the GVIU cards. Cards reset- issue resolved.

METRO SC	SLIDE MT	TAH SC	VA PEAK	CHMNY	MARBLE	POITTO	FOX MTN	MT ROSE
CC	01145 - 00716	OFF	CC	16383 - 00387	16383 - 00387	CC	FAIL	16383 - 00387
14375 - 00306	CC	OFF	16383 - 00387	12577 - 00289	CC	16383 - 00387	16383 - 00387	CC
OFF	14569 - 00289	OFF	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387
00000 - 00000	16383 - 00387	OFF	16383 - 00387	14757 - 00289	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387
14569 - 00289	14757 - 00289	OFF	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387
	16383 - 00387	OFF	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387	OFF	16383 - 00387
03517 - 00353	12577 - 00289	OFF	16383 - 00387	CC	OFF	OFF	OFF	OFF
	16383 - 00387	OFF	16383 - 00387	14757 - 00289	OFF	OFF	OFF	OFF
	14757 - 00289	OFF	OFF	OFF	OFF	OFF	OFF	OFF
03517 - 00353	16383 - 00387	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	16383 - 00387	OFF	OFF	OFF	OFF	OFF	OFF	OFF
14569 - 00289	16383 - 00387	OFF	OFF	OFF	OFF	OFF	OFF	OFF
14757 - 00289	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
14757 - 00289	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DownLink	DownLink	OFF	DownLink	DownLink	DownLink	DownLink	DownLink	DownLink
DownLink	DownLink	OFF	DownLink	DownLink	DownLink	DownLink	DownLink	DownLink
4157505	2018866	121615	558181	121615	558181	121615	558181	121615



System Status Update

- Unplanned Outages

- System & Site:

- 1/1/2023- Outages for Chimney, Slide, and Mt Rose
 - 12/28/2022- All Consoles heard static on all talk channels, lost time synchronization to the GVIU cards. Cards replaced. HT to HT & Mobile to Mobile issues.
 - 12/27/2022- Virginia peak VHF failure & console failures
 - 12/28/2022- Virginia Peak power outage
 - 12/21/2022- RSM site activity monitor failure, R775SOuWARA logging errors on RNM, and Exacom recorder playbacks failed.

- Weather Outages

- Fox Mountain to Virginia Peak inversion affecting microwaves, and extreme weather caused damage to microwave dishes causing alignment issues. Fox was forced into stand alone to prevent further System outages.
 - Tahoe Region also affected by poor weather conditions. We believe some of the data corruption is coming from communication links going up and down.

- SUMS- Software updates conducted monthly

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CC	01145 - 00716	OFF	CC	16383 - 00387	16383 - 00387	CC	FAIL	16383 - 00387
14375 - 00306	CC	OFF	16383 - 00387	12577 - 00289	CC	16383 - 00387	16383 - 00387	CC
OFF	14569 - 00289	OFF	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387
00000 - 00000	16383 - 00387	OFF	16383 - 00387	14757 - 00289	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387
14569 - 00289	14757 - 00289	OFF	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387
	16383 - 00387	OFF	16383 - 00387	16383 - 00387	16383 - 00387	16383 - 00387	OFF	16383 - 00387
03517 - 00353	12577 - 00289	OFF	16383 - 00387	CC	OFF	OFF	OFF	OFF
	16383 - 00387	OFF	16383 - 00387	14757 - 00289	OFF	OFF	OFF	OFF
	14757 - 00289	OFF	OFF	OFF	OFF	OFF	OFF	OFF
03517 - 00353	16383 - 00387	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	16383 - 00387	OFF	OFF	OFF	OFF	OFF	OFF	OFF
14569 - 00289	16383 - 00387	OFF	OFF	OFF	OFF	OFF	OFF	OFF
14757 - 00289	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
14757 - 00289	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DownLink	DownLink	OFF	DownLink	DownLink	DownLink	DownLink	DownLink	DownLink
DownLink	DownLink	OFF	DownLink	DownLink	DownLink	DownLink	DownLink	DownLink
4157505	2018866	121615	560101					



WCRCs Infrastructure Maintenance & replacement Update

Agenda Item #6



Maintenance

- **No maintenance is scheduled, routine repairs being conducted to maintain normal operation at sites.**
- Tower inspections & Remote Alarms
 - NTR (Nothing to Report)
- Radio maintenance & alignments
 - Virginia Peak
 - Chimney
 - Slide Mountain
 - Red Peak
- Security cameras maintenance and installation
 - NTR



Maintenance

- DC battery banks & rectifier testing
 - NTR
- HVAC inspection & repair
 - NTR
- Dehydrator/Waveguide pressure testing
 - NTR
- Generator inspections and repair
 - NTR



Radio System Interference Update

Agenda Item #7



Radio System Interference Update

August 2022

First reports began to trickle in about Interference. First Channel 3 on Red Peak was coming up with 100's of alarms. It was assumed that it was an emergency button issue. As a software upgrade has occurred July 22, 2022.

September 2022

Team found Various BDA issues, turned them off. Often times no additional reports were made- team under impression Interference was resolved. Hired Local RF engineer to assist in locating the issue.

October 2022

During Microwave Installations, team monitored the Radios, and collected Data when Interference heard. Team drove to locations to investigation interference. Created Interference team with Dispatcher to assist in interference finding. Engineering firms Called- no one available- call FCC.

November 2022

FCC Contacted to investigate the concerns. By this point we realized the interference was affecting a broader range of the community. FCC Had no initial finding and planned to return to Washoe County after the holidays. Teams continued to hunt down BDA's hoping to turn off the right one. After careful consideration InterMod was investigated.

December 2022

Unions began getting involved, calling for immediate actions. Engineering firm hired, and Both RF Engineers were able to assist the team in locating the issues. BDA was located and turned off and now WC is awaiting final report for FCC regarding the interference



Radio System Interference Update

- Reached out to National Regional Planning Committee for 700MHz & 800MHz to discuss interference experienced throughout the United States
 - Found various states experienced major issues with Comba BDAs
 - Found that some states are refusing any BDA that isn't a Class A Amplifier, Due to "oscillation" issues that occur 1 year after install.
 - Received testing policies and guides to add to our own system documents and RFP documentation
- Need County codes that defines how we implement:
 - IFC/ NFPA Codes required by Fire
 - BDA Authorization
 - BDA Inspection
 - Annual Maintenance
 - Registration



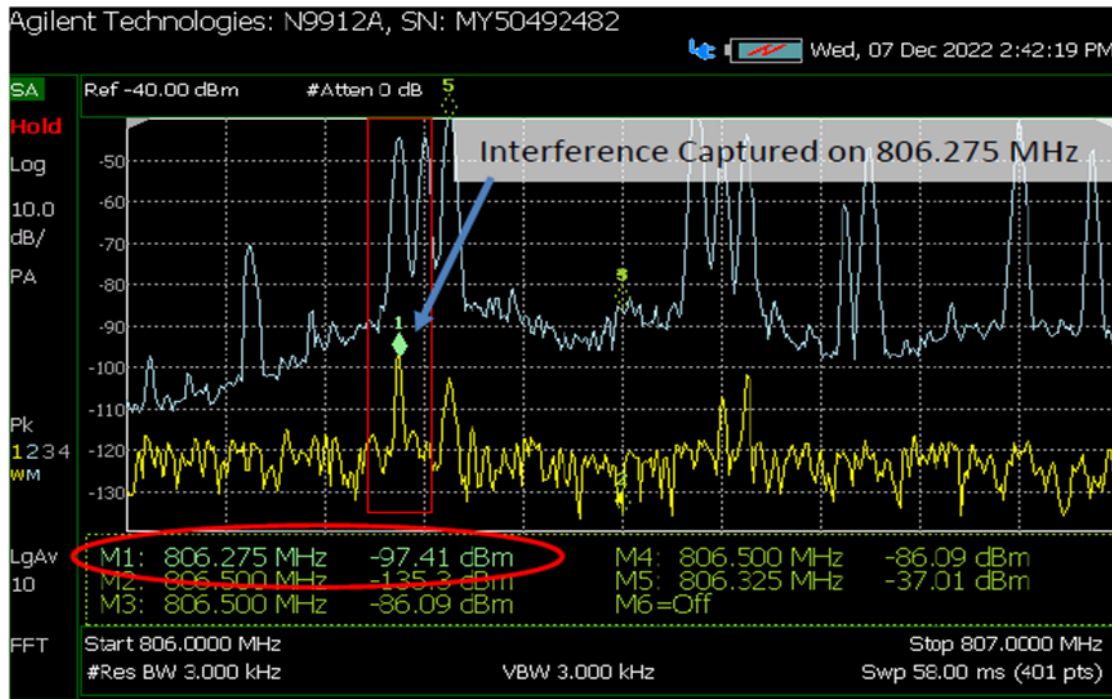
Radio System Interference

- The BDA was eventually found and FCC is taking up the investigation.
 - BDA installer claims they followed a process- So far no additional information has been provided, so FCC has issued a sanction. The owner have a set period to explain themselves.
 - If Building owner can prove it was an authorized BDA as verbally described, FCC will create a remediation plan for Washoe County stating next step to better communicate and fix code to reflect the proper procedure.
- Based off the information available to us.
 - It appears the BDA was configured incorrectly- it wasn't point at a single doner site.
 - The box itself appears to have confused input configuration and output configuration, the Interference was on the carrier wave of the transmission.
 - On the spectrum analyzer it was found that our calls that had the interference held up a few second longer than a normal call. The interference was within our own traffic- which is why we couldn't find a signal to trace. EDACS has a three pulse tear down- and that was being rebroadcast within the carrier signal.



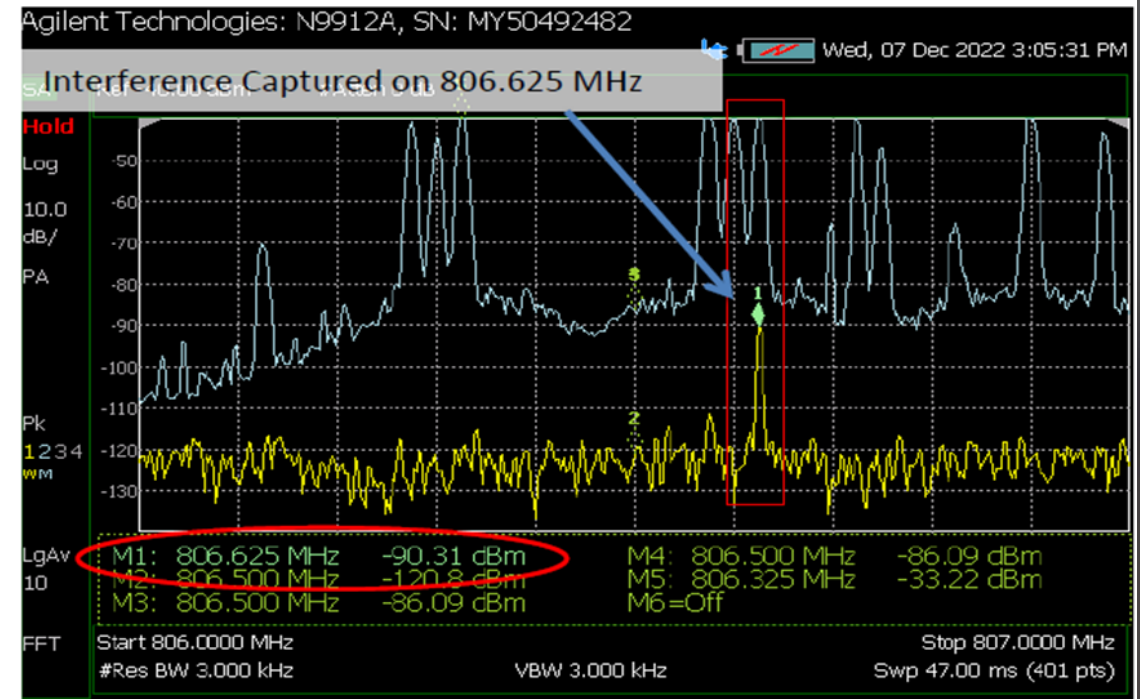
Radio System Interference

- Spectrum Analyzer Results**
 - Red Hill Receiver Multicoupler



Signal Captured During Noise Event

Yellow – Active Trace
Blue – Max Hold Trace



Signal Captured During Noise Event

Yellow – Active Trace
Blue – Max Hold Trace



Radio System Interference

- After Action Report and Final briefing will be shared after FCC Completes their investigation.
- Three Paths to BDA Installation & Inspection:
 - WCRCS is being added to the following permit processes:
 - Fire Permit process (New Buildings)
 - Electrical Permit Process (For Existing Buildings)
 - WCRCS will have a Web site to catch anyone not caught by the permit process within the County and Cities.



Radio System Interference

January 2023

Begin meeting with County & City Code Enforcement to determine the process for changing County Codes. Create BDA Standard for our community, utilizing resources like Safer Building coalition, and NRPC member recommendations. Bring Pericle Engineering back to assist in Writing these procedures.

February 2023

Create education program to begin getting community members: Fire and Code Enforcement folks to understand what is being asked. Begin changing County code.

March 2023

Finish Interference Reporting Section of the Website. Begin Layer mapping to assist with troubleshooting for WCRCS and NSRS partners. Implement new County Websites for BDA registration.

April 2023

Implement Community Public Service announcement educating people about BDA/DAS. Amend and adjust any documentation that needs adjustment. Make sure codes are enforceable and have teeth.

May 2023

Finalize County Codes processes through accelera, and make sure to start implementing and enforcing new BDA and DAS policies.



XG75 Feature Check

Agenda Item #8



XG75 Common Features

- 22-Profile (OTAP)
- 23-Narrow Banding
- 29-Provoice
- 33-P25C
- 35-P25OTAR
- 37-AES (encryption)
- 39-P25 Trunking
- 41-VHF Lo
- 42-VHF Hi
- 43-UHF
- 47-TDMA- Phase 2
- 48-GPS
- 49-Bluetooth
- 50-WB Disabled
- 51-MDC 1200
- 55-Link Layer authentication
- 60-In Band GPS- Situational awareness
- 61-ENC
- 62-Single Key AES

Finding the Feature codes on the XG75

- UNLOCK radio
- “M” in the middle to access the radio menu
 - This is the main radio menu.
- Click the up or down arrow until you find “features”
- Once you find features, use M to select, and scroll down until you find the feature numbers.





Questions?

Melissa Lawney
MLawney@washoecounty.ugov
775-771-4241
775-858-5952

