dish wireless

1. Incident Description-

Overview of Event **(Problem Description)**	12 Sites went down between 6:30 and 7:00 AM. All were showing PTP locked and F1C established and PRACH 0. Upon investigation it was found the RU's were not MAC-learning on the CSR on VLAN 202. While troubleshooting, an additional 16 sites gradually went down as well.

DISH Specific Details[1]	
Market / Location	South-Atlanta-Birmingham (BHM)
NOC TT Number	INCWLS0436082
Premium Marker (AOI)	BHM

2. Incident Overview

The following table provides an overview of the events of the incident.

System or Node Name	28 Sites in Birmingham
Incident Start Time	2023-06-23 06:33:08
Incident Identified by DISH Time	2023-06-23 07:00:08
Incident End Time	2023-06-23 13:35:00
Incident Duration	6 hours, 35 mins
Duration Post Vendor Contact	1 hour, 6 minutes
Service Impact	Users switched to roaming
Total Subscriber Impact	6 hours, 23 mins

Factors Leading to Event **(Trigger if applicable)**	CHGWLS0050773 was carried out the night before to restart Multus in several clusters. The restarts caused a loss in functionality of the MTCIL pods. Due to this loss in functionality the RUs were unable to call home and then MAC-learn.

3. Restoration Action and Next Steps

Step Taken to Restore / RCA	The MTCIL pod was restarted and then MVRP restarts on the DUs resolved many of the sites. Several RUs did not come back after services were restarted. Those RUs were restarted one-by-one.
Next Steps	Ensure that when Multus restarts are planned, their corresponding MTCIL pods are also restarted.

4. Downtime Tracker

Partial/ Full	Peak Non-Peak	Started	Reported	Ended	Total min	Subs affected	Total Subs	% of Subs affected
Full	Peak	2023-06-23 06:33:08	Grafana	2023-06-23 13:35:00	422			100%

5. Timeline of the Events Table

Timeline	Comments	Involved Engineers
7:00 AM MST	Problem identified. We identified the sites were all lit sites and dispersed across different CUs and clusters. We then created a ticket for Mavenir to update.	NOC
7:12 AM MST	Mohammad (NOC Network Surveillance) found that all RUs are not MAC learning on VLAN 202	NOC
7:50 AM MST	Mavenir and RAN team continue to troubleshoot. Network Engineering was then engaged.	NOC, Mavenir, RAN, Network Engineering
11:05 AM MST	10 additional sites were identified. Ryan (NOC IM) joined bridge, RAN team is aware of the new sites and escalated internally to Nikhil Sundarappa.	NOC, Mavenir, RAN, Network Engineering

12:30 PM MST	Issue traced to the Multus pod restart causing dysfunction of the MTCIL pod. This caused the RUs to be unable to call home. The MTCIL pod was then restarted. 1 site was tested to see if MVRP restarts on the DUs would cause the RUs to reset and come back online. The site recovered in approximately 10 minutes. The NOC then began restarting MVRP services on all other sites.	NOC, Mavenir, RAN
1:00 PM MST	All sites have had MVRP services restarted. Approximately half came back up with this fix alone. The remaining had to have the individual RUs reset that failed to MAC learn.	NOC, Mavenir, RAN
1:35 PM MST	All sites have been recovered. Outage is resolved.	NOC

6. Vendor Incident and Follow Up

Vendor	Incident Number	Severity
Mavenir	HEAT 502270	Sev-1

7. Personnel Involved

Name	Function	Organization
Ryan Rutherford	Incident Manager	NOC
Paul Rauscher	NOC Manager	NOC
Mohammad Daoud	Network Surveillance	NOC
Nikhil Sundarappa	RAN Engineer	Dish RAN

Murali Derangula	RAN Engineer	Dish RAN
Farabundo Albarran	NOC FIM	NOC