



Alaska Land Mobile Radio Communications System

User Council 2019 Annual Assessment on System Operations and Management Performance

February 4, 2020

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1.0 Introduction

Per the Alaska Land Mobile Radio (ALMR) Communications System Cooperative Agreement, Article 8 - User Council, Section 16.2, Performance Monitoring:

The User Council will monitor and evaluate the performance of the System, including the efficiency and effectiveness of its operation and management, as well as the performance of contracts and user agreements. The User Council will report to the Executive Council their assessment of the operational health of the System annually, or as requested by the Executive Council.

This report provides a high-level overview of ALMR System performance monitoring by the User Council (UC) and their oversight of the day-to-day Operations and System Management functions.

2.0 Membership

At the beginning of 2019, there were 124 agencies operating on ALMR. At the end of the year, the total number of agencies on ALMR was 129 with 22,191 subscriber units in service.

Lake Louise was removed from the System in April after it was determined the Chief had passed away and there was no one who could account for the radios.

The newest member agencies to join in 2019 was the City of Kodiak, City of Ketchikan, the 103rd Weapons of Mass Destruction – Civil Support Team, the Alaska Search and Rescue Cooperative, Sand Point Department of Public Safety and the US Postal Service Office of the Inspector General.

3.0 Metrics

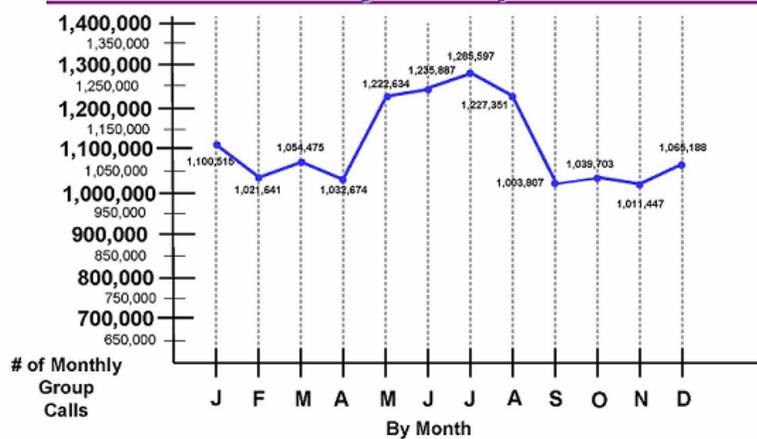
The UC is responsible for monitoring System performance and tracking various parameters including busies and voice calls per month in order to note any trends that may indicate System deficiencies. To accomplish this, they employ the Operations Management Office (OMO) to provide periodic reports. The OMO presents ALMR System metrics at the monthly UC meeting and also at the Executive Council (EC) meetings, as scheduled.

The UC has established a performance baseline standard, with respect to System busies, which identifies day-to-day and emergency operations data for individual sites by both the percentage and duration. When sites exceed established standards, the Operations Manager reviews the applicable site report to determine whether they are related to the Alaska Public Safety Communications Service (APSCS) downtime, military exercises, weather-related events or a specific emergency response event.

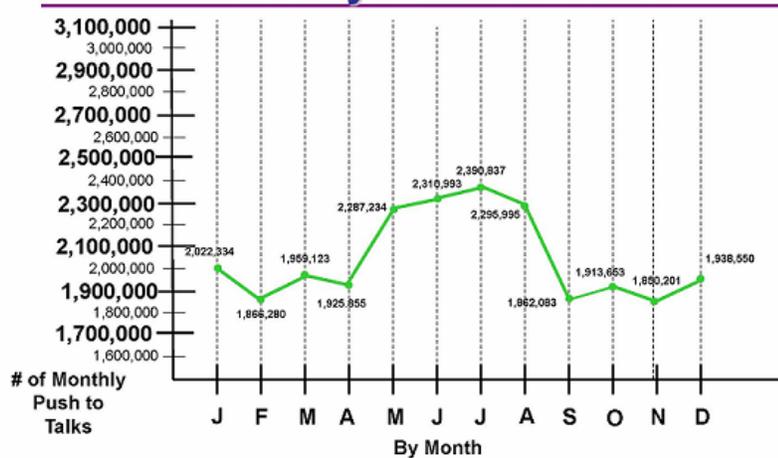
The OMO provides monthly statistics to the UC to determine whether those sites exceeding the standard are experiencing excessive traffic due to normal seasonal shifts, or if there is simply insufficient channel capacity at the site to handle daily operations.

The following charts display the total numbers of System group calls¹ and push to talks per month.

2019 System Performance Monthly Group Calls



2019 System Performance Monthly Push-to-Talks



¹ A group call is a specific conversation between individual subscriber units on the system.

In 2019, the ALMR System supported a cumulative total of 13,300,919 group calls, 24,623,138 push to talks within the group calls, and had System busies of 9,119, which equaled .0006 (six one hundredths of one percent) of the cumulative total group calls.

4.0 Conflicts/De-conflicts

There were no frequency conflicts in 2019.

5.0 Build out

The ALMR System was originally designed to support 105 sites. The Atwood 800MHz site was then added, as well as the two Transportable Communications Systems. The State of Alaska (SOA) also added a 700MHz site at Goose Creek Correctional Center in November 2011.

At the end of 2019, site equipment ownership was as follows (original design number versus current build-out status/ownership):

- US Army Alaska (USARAK) – 45/5^(see notes 1&5)
- Joint Base Elmendorf-Richardson – 1/1
- Eielson Air Force Base – 3/3
- Clear Air Force Station – 1/1^(see note 3)
- Municipality of Anchorage (MOA) – 15/12
- SOA – 40/76^(see notes 1, 2, 3 & 4)

There are currently 97 operational sites including the 12 MOA Anchorage Wide Area Radio Network (AWARN) sites; this total does not include the transportable systems. All Department of Defense (DOD) sites have been completed and the State has completed the build out of all funded sites.

NOTE 1: In calendar year 2012, radio frequency (RF) equipment belonging to USARAK at 41 sites was transferred to the SOA from the Department of Defense (DOD) free of charge. This accounts for the difference in the listed numbers for the planned site build out and the current number of owned sites.

NOTE 2: The Atwood 800MHz site was removed in May 2013 to utilize as a test bed for the 7.13 System software platform update. The decision was made during the February 5, 2014, User Council meeting not to reinstall the site. The System Change Request was approved by the Executive Council on February 26, 2014.

NOTE 3: The State added new sites at Delta Junction and Knik in May 2017.

NOTE 4: St Paul Island was officially shut down in July 2018 and the equipment will be removed by the SOA, per agreement with SPI Department of Public Safety. Although it had no reach back capability, it was still assigned an ALMR site number and had been included in the official count.

NOTE 5: In July 2019, the SOA agreed the Site Summit site would become the sole responsibility of USARAK, rather than a shared site.

6.0 System Coverage Issues

ALMR was originally designed and built to provide coverage along the major roadway system in Central and South Central Alaska, major population centers in Southeast Alaska and some portions of the Marine Highway.

During 2019, previously identified coverage issues continue to be tracked by the OMO.

- **Skagway** (carried forward from 2010)
The ALMR site at Skagway does not provide coverage over the last six miles of the Klondike Highway. This is the section that is most intensively maintained, and the area where whiteouts, blowing snow, and avalanches occur. When maintenance crews are in these areas, they must use a conventional DOT frequency for communications, which is often interfered with by truckers using the highway.

DOT has suggested that an ALMR repeater be installed on Mine Mountain. This would cover the portion of the highway that currently has no ALMR coverage. However, Mine Mountain is remote and does not have power. The DOT&PF planning section offered to assist with funding, if a plan can be put together.

Update 2016: At the August 3 User Council meeting, the decision was made that it was a DOT issue. The consensus was there were higher priorities and it was **TABLED** for the time being.

Update 2017: There was no change in the status of this item in 2017.

Update 2018: There was no change in the status of this item in 2018.

Update 2019: There was no change in the status of this item in 2019.

- **Houston** (carried forward from 2010)
The Technical Advisor traveled to the Houston area to investigate an issue with poor portable coverage reported by Houston PD. One of the immediate problems noted was that the radios did not have a "most preferred" tower site programmed. During the coverage checks in the Houston area, the only tower sites that were accessible were Site Summit, Cottonwood, and Rabbit Creek. Of the three, Site Summit provides the best site coverage for the affected area. It was suggested that when the agency programs their radios, they should consider making Site Summit the "most preferred" site.

The System Manager noted that there had been some discussion about a new tower site along the Knik Goose Bay Road in Wasilla. There is an existing tower in the area that could provide excellent coverage throughout the Houston area. However, it may take several years to add an additional radio site if/when funding is approved.

Subsequently, the only option available at this time, which could improve Houston PD portable radio coverage in the near future, would be for them to acquire/install in-vehicle repeaters. It was suggested they contact Soldotna PD, who had installed several in their police vehicles and were reportedly satisfied with the improved reception capability.

Update 2011: The City of Houston deactivated the Police Department in 2011 and is no longer a member of the ALMR System.

Update 2016: At the August 3 User Council meeting, it was pointed out that at one time there had been discussion of taking some of the channels from Fire Station 12 to establish a site in the Houston/Knik Goose Bay area because it was growing so rapidly. The consensus of the council was for the potential site to stay on the list.

Update 2017: A site was installed at New Knik; however, an additional site is still being considered to resolve remaining communications issues in the area.

Update 2018: There was no change in the status of this item in 2018.

Update 2019: There was no change in the status of this item in 2019.

- **Chena Dome/Chena Hot Springs Road** (carried forward from 2013)
At the May 1 User Council meeting, the council was briefed that Chief Jeff Tucker, North Star VFD, had mentioned Chena Hot Springs where there is no ALMR coverage, but only a conventional site where power is problematic.

Major Leveque briefed there is a conventional site AST has access to, but he had talked to his troopers who stated there is virtually no coverage there even on the conventional side.

DOT engineers were looking at how to bring down the cost to implement Chena Dome, but it would still be a significant cost regardless. ETS was requested to explore the Chena Hot Springs Road site and were advised that spring 2014 might be the soonest ETS could begin serious exploration.

The Stuart Creek 2 wildfire, in July, reached the Chena River and prompted an evacuation along Chena Hot Springs Road for residents between mileposts 18 and 34. This emphasized the need for expansion of ALMR into this area.

Update 2016: ETS put a SATS site up in calendar year 2014, which has conventional radios in it due to power limitations at the site. In order to put ALMR radios at the location, the power challenge would need to be solved.

At the August 3 User Council meeting, the members agreed there was definitely a need to get something out in this area. This item was **TABLED** until more information could be obtained.

Update 2017: There was no change in the status of this item in 2017.

Update 2018: There was no change in the status of this item in 2018.

Update 2019: There was no change in the status of this item in 2019.

- **Valdez** (carried forward from 2014)
At the July 2, User Council meeting, Chief Bill Comer of Valdez Police Department briefed the council regarding coverage shortfalls at Rove River, Keystone Canyon, Alpine Woods and Thompson Pass in the Valdez area, which created an officer safety issue.

Update 2015: The Department of Transportation and Public Facilities advised they had installed a 120 foot communications tower at the DOT Valdez Weigh Scales Inspection Station that could provide coverage to the area of concern to Chief Comer which is a housing area behind the airport.

Update 2016: This item was briefly discussed at the August 3 User Council meeting, but it was **TABLED** for the time being. A coverage study by Motorola® was reportedly performed, but the results had not been provided to the OMO at the close out of this year's report.

Update 2017: There was no change in the status of this item in 2017.

Update 2018: There was no change in the status of this item in 2018.

Update 2019: There was no change in the status of this item in 2019.

7.0 On-going Projects

7.1 The following equipment upgrades or replacements took place in 2019.

- Channel capacity enhancements – the plan is to add capacity to all existing three-channel sites, as the need is identified and funding becomes available
- 7.17.3 System software platform upgrade – the upgrade began on February 27 with the Kickoff Meeting and Critical Design Review (CDR) and continued into

September with optimization, security scans and the submission of the final documentation. The upgrade had not been fully accepted as of the close out of the calendar year.

- DiagnostX – the SOA purchased four devices and initially placed them in the Anchorage bowl area for training. They have moved them to other sites since that time.

- DOD replaced the Quantars at six sites with GTR 8000s
 - Clear
 - Site Summit
 - Donnelly Dome
 - Black Rapids
 - Fort Greely
 - Birch Hill

8.0 Contractor Performance

8.1 System Documentation. The OMO is responsible for auditing and control of the policies, plans and procedures, which provide for the accountability, compliance, performance and monitoring assessment of the ALMR System.

Documents are reviewed annually and updated, as necessary, to reflect changes to System performance parameters or operational mandates. The status of ALMR documentation reviewed in 2019 is:

- 80 total reviewed by the OMO
- 2 substantial revisions approved by the UC

8.2 System Recovery Plan

In accordance with System Recovery Procedure 400-1, the System Recovery Plan shall be tested annually and all results of the test shall be recorded. The Security Manager shall be responsible for overseeing the testing and verifying that the results have been recorded. Results of the testing will be presented to the User Council.

NOTE: Real-world occurrences of, and response to, System failures shall meet the annual test requirement.

- **Date of Incident:** August 1
- **Details:** 0810L hours – Unable to access UNC and UNC Wizard. (Motorola Case 26896917 and 26895003, ALMR WO 57512 and 57511)

SMO convenes a System Recovery Team: SOA ETS, DOD, Mr. Del Smith, Mr. Travis Conant, Mr. Nik Fahnestock, Mr. David Rice, Motorola Technician Mr. Mark Neuman, and Motorola Security Manager Mr. David Reed.

Incident: On August 1, 2019 at 0810L hours ALMR was notified by Zone 4 administrators (Municipality of Anchorage) that they were not able to access UNC or UNC Wizard. Investigation at approximately 0815 concluded that the SMO could not access components in Zone 1, as well. The assumptions were either the administrative account to these two systems was either changed or locked out. We also considered the latest antivirus dat file was being pushed out at that time as well and could have had an impact on this. Mr. Mark Neuman and Mr. David Reed worked the account process over thoroughly and found many instances of failed password attempts by system processes and MOA accounts. Mr. Neuman restarted the servers and attempted to log in again, but this would not work, as well. A case was opened with Motorola for the engineers to look at the system. After thoroughly looking over log files and system configuration, it was determined that the administrative account was locked on the UNC and UNC Wizard. To add to this issue, when the upgrade team installed the new system software platform a few weeks earlier, they didn't leave the password for the super account to access these two systems. The engineering team accessed with the super account and unlocked the primary administrator account. This has restored access to these two applications. The loss of the UNC and UNC Wizard only impacted administrative functions for configuration management of the system. It didn't impact radio operations on the system itself.

Resolution: Motorola engineering team unlocked applications and provided password to the super account.

IAO Release of Information: Not Required

Return to Normal Operations: August 2, 2019, 0700L Hours

Total Downtime: 22 hours and 50 minutes

- **Findings:** Two accounts locked the primary administrator account and an individual MOA administrator account was locked.
- **Results:** Lessons learned regarding the importance of entering the correct password and also obtaining all necessary passwords to aid in the recovery operations. All other equipment remained operational.

NOTE: Results of System recovery efforts are also listed in the annual System Recovery Assessment and Backup-Recovery Report, dated December 11.

8.3 Subscriber Inventory. In February 2012, the State Legislative Budget and Audit Committee was requested by a member of the Legislature to perform an audit of the ALMR System. The audit took well over a year to complete and in December 2013, the Legislative Audit Final Summary was released with a single finding.

Findings and Recommendations:

Recommendation No. 1

ALMR executive council should ensure user agencies conduct an annual inventory of ALMR equipment.

To correct the discrepancy, the ALMR Executive Council appointed the OMO as their executive agent for the annual audit. Therefore, at the beginning of each calendar year, the OMO prepares and distributes an instruction letter to each user agency with an accompanying confirmation form to sign and return. The distribution of letters and confirmation forms to member agencies began on January 17 and was completed by January 25.

For calendar year 2019, 123 agencies performed an audit of their assigned subscribers, took the necessary actions to remove/disable/add subscribers, where required, and returned the completed confirmation form. The audit was completed on July 3, with the receipt of the final agency form.

NOTE: Agencies who joined in 2019 and those who have valid membership agreements, but who have no subscribers on the System, were not required to complete and return the confirmation form. The US Coast Guard Investigative Service had no radios on the System during the timeframe of the survey.

9.0 System Enhancements

10.0 Supported Events

10.1 On-going Agency Training

Many opportunities exist to allow the UC to further interoperability throughout the State, and remain up to date on current national standards. The Performance-Based Work Statement for the OMO allows the UC to utilize the OMO staff to contact member agencies, prospective member agencies, legislators, and other interested groups to disseminate information about ALMR, when funding is available.

During calendar 2019, Copper River Native Association contacted the OMO/training coordinator and requested and received some training.

11.0 Finance/Budget

In accordance with the Cooperative and Mutual Aid Agreement, the UC will establish a budget process and each year develop a proposed budget for the next fiscal year to meet the operating, maintenance and capital replacement needs of the System and shall submit the proposed next year's budget to the EC. All proposed expenditures and

activities of the System, as well as funding sources, shall be reflected in the proposed budget.

The proposed FY21 OMO/SMO Operating Budget was presented to the UC at their July 3 meeting and they voted to approve it to move forward to the Executive Council. The budget was presented to the EC after their July 18 meeting and the EC voted to approve it via email with the final vote received on Jul 29. The final FY21 budget was forwarded to the Office of Information Technology on August 7 by the Operations Manager to provide to the SOA Department of Administration (DOA) for inclusion into the SOA budget process.

The SOA Governor's proposed FY21 budget was released on December 15.

12.0 Other Focus Areas

Additional areas currently being tracked:

- **OIT**
- **DOD**
 - ❖ US Army maintenance of critical infrastructure, specifically battery plants and inverters is a continuing concern. Multiple inverters at the Birch Hill Master Site and at the Donnelly Dome site failed on and/or before April 2018, yet were not given priority status for replacement, putting the entire Zone 2 at risk. At the end of 2018, this issue had still not been corrected, but funding had been requested for 2019. The Army Department of Public Works was awarded the contract in late 2019 and repair work is slated to begin in January 2020. Cutover occurred on February 3 with no issues.
- **Outstanding Maintenance**
 - ❖ Delays in addressing R56 grounding at some SOA sites continues to be a major concern, some now being over 15 years old, but are being addressed as funding is available.

NOTE: SOA maintenance and milestones are briefed at the monthly UC meeting.

13.0 Conclusion

This report addresses the status of various issues regarding the operation and management of ALMR and outstanding items noted during this calendar year, or carried forward from previous years.

The efficiency and effectiveness of the OMO and SMO in performance of their contract functions met the expectations of the UC. The overall health of the ALMR System is



currently good. The three-channel sites continue to be monitored and the channel capacity upgraded, as the need dictates and funding becomes available.

Issues of concern the OMO and SMO will continue to monitor/address in CY2020:

- 1) Continue to encourage alternate sources of revenue for permanent long-term funding at the State level for the System, upgrades and equipment end-of-life replacements, as well as sustainment of the day-to-day operations and maintenance of ALMR;
- 2) Encourage capacity enhancements at remaining three-channel sites and/or opportunities for improving coverage where communication issues exist within the current ALMR footprint; and
- 3) Closely monitor status of funding for the replacement of the SOA Quantar site radios.