



ALASKA LAND MOBILE RADIO

Alaska Land Mobile Radio Communications System

Service Level Agreement

Version 10

February 11, 2025



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Document Revision History

Date	Reason for Changes	Version
9/7/11	With the transfer of the USARAK RF equipment from the initial 13 sites, For the period of July 1 - December 31, 2011, response times and service levels have changed regarding all State of Alaska (SOA)-owned radio frequency (RF) equipment, as well as USARAK RF equipment at certain SOA sites. (see Addendum A)	N/A
7/1/12	With the transfer of the USARAK RF equipment at the remaining 28 sites, response times and service levels have changed regarding all State of Alaska (SOA)-owned ALMR radio frequency (RF) equipment. (see Addendum A)	N/A
1/15/2015	Review and update approved by the User Council on November 5, 2014, and the Executive Council on January 15, 2015.	V2
3/20/2017	Annual review. Review and update approved by the Executive Council on March 16, 2017.	V3
5/16/2018	Annual review. Review and update approved by the Executive Council on May 16, 2018.	V4
7/2/2019	Annual review. Review and update approved by the Executive Council.	V5
2/18/2021	Substantive update reviewed approved by the Executive Council	V6
1/31/2022	Annual review. Approved by the Operations Management Office.	V7
1/11/2023	Annual review. Review and update approved by the Executive Council.	V8
2/1/2024	Annual review/update. Approved by the Operations Management Office	V9
2/11/2025	Annual review/update. Approved by the Operations Management Office	V10



1.0 Overview

The purpose of this agreement is to represent a Service Level Agreement between Alaska Land Mobile Radio (ALMR) and its membership of Alaskan public-safety first responders (users) for the provisioning of public-safety communication services required to support and sustain the ALMR Motorola ASTRO™ P25 service.

This agreement remains valid until superseded by a revised agreement mutually approved by the ALMR Executive and User Councils.

2.0 Introduction

This agreement is meant to communicate the elements and commitments in place to provide consistent public safety communications at or exceeding the SAFECOM standard for service delivery and support to the users by the ALMR Operations and System Management Offices.

2.1 Goal

The goal of this agreement is to obtain mutual understanding for the ALMR service provisioned between cooperative ALMR operational elements and users. Principal operational elements are identified in this document at a high level.

2.2 Objectives

- Provide clear reference to users regarding ALMR service, support, performance measures, and primary functions.
- Present clear, concise, and measurable Service Level Objectives (SLOs) of service provisioned to the users.
- Match perception of expected service provisioned with actual service delivery and support.
- Concisely reinforce key responsibilities of the System Management Office (SMO) and radio frequency (RF) site owners.

3.0 Scope

For clarity in the agreement, the ALMR system will conceptionally be represented as the following primary component functions:

- Motorola ASTRO™ P25 System Core
- RF Site Equipment
- RF Site Infrastructure

Service support and delivery for the ASTRO P25 system and specific radio frequency (RF) site equipment will be detailed in the accompanying operational level agreement and



provided by the SMO, as the contracted maintenance provider, and includes the network, system infrastructure, certain other system assets, network configuration, network security, and administrative management and/or support.

Service support and delivery for some RF site infrastructure equipment and other additional peripheral subsystem equipment will be detailed in the attached operational level agreements.

4.0 System Description

ALMR is a Motorola ASTRO P25™ Digital Trunking WAN SmartZone solution divided into zones. All sites south of the Denali Highway, to include SE Alaska and Kodiak, are in Zone 1, while those sites north of the Denali Highway are in Zone 2. Each zone has a Master Site and several RF sites. The Master Site for Zone 1 is in Anchorage. The Master Site for Zone 2 is in Fairbanks. The Municipality of Anchorage, Anchorage Wide Area Radio Network (AWARN) makes up Zone 4. Note that Zone 3 has been reserved for possible future expansion and is not currently active.

Detailed specifics of RF site equipment and subsystems can be found in Appendix A.

5.0 Administration/Management

The system will be managed to a set of SLOs that support day-to-day operations of member agencies. It is imperative that all components, including equipment and connectivity, are maintained at consistent operational levels and available for day-to-day and emergency use.

- The SMO provides an integrated suite of services in support of ALMR system operations and maintenance, as well as to ALMR users. For detailed roles and responsibilities see SMO Customer Support Plan (CSP).
- The Operations Management Office (OMO) provides oversight of the duties and responsibilities of the SMO to ensure the availability of the system 24 hours a day/7 day a week and acts as the single point of contact between the User Council and the SMO. For detailed roles and responsibilities see the OMO CSP.

Responsibilities and minimal qualifications for personnel are outlined in Appendix B.

6.0 Stakeholders

The following table lists the primary stakeholders associated with this SLA:

Stakeholder	Description / Function
Executive Council	The ALMR Executive Council is comprised of federal, state, , and municipal governmental agencies whose representatives shall be appointed by their respective agencies and must be



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	at an executive level empowered to provide binding voice and vote for that agency. The council consists of three voting members: Department of Defense (DoD), Federal Non-DoD, and the State of Alaska (SOA).
User Council	The User Council is composed of twelve primary members representing the four original foundational entities (DoD, Non-DoD Federal, State of Alaska, and the Alaska Municipal League) with a number of alternates.
Cooperative Partners	Parties as defined in the ALMR Cooperative and Mutual Aid Agreement; Alaskan Command (a sub-unified combatant command within the United States Department of Defense), Alaska Federal Executive Association, State of Alaska, and the Alaska Municipal League.
ALMR Users	An agency, person, group, organization, or other entity which has an existing written membership agreement to operate on ALMR with one of the parties to the Cooperative and Mutual Aid Agreement. The terms user and member are synonymous and interchangeable.
Alaska Public Safety Communication Services (APSCS) Manager	State of Alaska employee responsible for the operation and maintenance of the SOA Telecommunications System (SATS) supporting ALMR and providing public-safety communication services and support to state agencies.
Alaska DoD	Alaskan Command (a sub-unified combatant command within the United States Department of Defense) comprised of US Air Force, US Space Force, US Army, US Navy, and Marine Corps.
System Management Office (SMO)	Provides integrated suite of services to ALMR users including Access Management, Asset Management, Change Management, Configuration Management, Fleetmap Management, Performance Management, Problem Management, Service/Help Desk, and Preventive Maintenance Service and Reporting. Currently, the contracted maintenance provider is Bering Strait Information Technology (BSIT) through Motorola Solutions.
Operations Management Office (OMO)	Provides oversight for governance structure, planning, SMO compliance, and overall operation of the system. In coordination with the User Council, the OMO establishes policies, procedures, processes, organizational structure, and agreements and monitors contracts that provide maintenance and infrastructure services, as defined in the ALMR SLA. Currently, contracted operations management is provided by Wostmann & Associates, LLC.



7.0 Service Management

Effective support of in-scope services is a result of maintaining consistent service levels. Detailed information regarding service support scope and priority, severity, and response can be found in the SMO CSP.

7.1 Help Desk Availability

Contact Type	Hours of Operations	Contact Detail
In Alaska - Telephone	24/7 Coverage	(907) 334-ALMR (2567) within the Anchorage bowl, or 1-888-334-ALMR (2567) outside the Anchorage bowl but within Alaska
Outside Alaska – Telephone (including mobile phones)	24/7 Coverage	Out-of-State callers must dial 907-334-ALMR (2567)
E-mail	E-mail responses are sent Monday through Friday from 7:30 a.m. to 4:30 p.m. AST (except State holidays)	ALMR-Helpdesk@beringstraits.com
In Person	Monday through Friday from 7:30 a.m. to 4:30 p.m. AST (except State holidays)	Visit the Help Desk at 5900 E. Tudor Road, Suite 121, Anchorage, AK during normal business hours from 7:30 a.m. to 4:30 p.m.

8.0 Service Level Objectives

ALMR is a public-safety-grade communications system utilized by Alaska first responders and other public safety entities supporting day-to-day operations, as well as contingency operations such as major accidents, earthquakes, fire, avalanches, etc. It is imperative that all components, including equipment and connectivity, are maintained at consistent operational performance levels equivalent to SAFECOM level of 99.9% (three nines) uptime.

The SMO, acting as the ALMR contracted service provider, is responsible for monitoring, maintaining, and repairing, as necessary, the Motorola RF equipment at all sites on behalf of ALMR member agencies. They do not have responsibility for the site infrastructure (i.e., shelters, towers, back-up power, connectivity, etc.). As a courtesy, the SMO will provide a notification to site-owner agencies when issues involving the site infrastructure are discovered during site visits.

Site owners are responsible for ensuring that corrective action is taken when notified of issues involving their site infrastructure.

Service level objectives are defined in the following tables.



Table 8-1 Service Level Objectives

Major System Component Equipment	Measure	Service Level Indicator (SLI)	Measure Period
<p>Motorola ASTRO P25 Core System</p> <p>The ALMR system is comprised of Master Site zone controllers which serve the central management and administration functions of the system. Each Master Site has two redundant zone controllers, which minimizes impacts of failures. If a Master Site does fail, the RF sites in the associated zone will operate in site-trunking mode. The other zone will continue normal operations for the sites in that zone. Cross-zone, wide-area dispatch will not function.</p> <p>NOTE: The Anchorage Wide Area Network (AWARN) Zone Controller (Zone 4) is not covered under the service addressed in this SLA and is the responsibility of the Municipality of Anchorage.</p>	<p>Availability</p>	<p>The Zone Controllers will be available 99.9% of the time</p>	<p>Over a year</p>
<p>Radio Frequency (RF) Site Equipment</p> <p>RF site equipment provides transmission and receiving capabilities for a coverage area that links subscriber equipment with the zone controller and dispatch centers. This category includes site RF infrastructure, antenna systems, and other subscriber equipment.</p> <p>NOTE: FCC licenses for RF sites are the responsibility of the owning agency. FAA registration for RF site towers is the responsibility of the owning agency.</p>	<p>Availability</p>	<p>RF site equipment will be available 99.9% of the time. Sites not meeting 99.9% uptime will be briefed at the monthly UC to identify trends.</p>	<p>Over a year</p>



<p>Radio Frequency (RF) Site Infrastructure Equipment</p> <p>RF Site Infrastructure includes connectivity (telecom, microwave, lease circuit), power, battery plant, and waveguides.</p>	<p>Availability</p>	<p>RF site equipment will be available 99.9% of the time</p>	<p>Over a year</p>
<p>Remote Telephone Service Support</p> <p>Guided by the SMO Customer Support Plan's Severity Classification and the RF site or system impacted – an ALMR System Technologist is assigned. Response time expectations are driven by severity.</p>	<p>Response</p>	<p>Percent of requests that did not meet response time goal</p>	<p>Over a month</p>
<p>On-Site Service Support</p> <p>Guided by the SMO CSP Severity Classification and the RF site or system impacted – an ALMR System Technologist is assigned. Response time expectations are driven by severity.</p>	<p>Response</p>	<p>Percent of requests that did not meet response time goal</p>	<p>Over a month</p>
<p>Preventative RF Site Maintenance Inspection</p> <ul style="list-style-type: none"> • Operational test and alignment on customer infrastructure equipment • Verify infrastructure equipment meets OEM specifications • Annually performs operational tests and alignments on the ALMR infrastructure network equipment 	<p>Completion</p>	<p>Number of RF sites that did not receive annual periodic maintenance inspection (PMI)</p>	<p>Over a year</p>



9.0 Operational Level Agreement

ALMR service is dependent on elements which do not fall under the scope of the contracted maintenance provider and include site land and grounds keeping, power, towers, antennas, waveguides, shelters, back-haul connectivity (microwave, fiber, or leased circuits), and physical access and are provided by infrastructure owners who may also be ALMR users. Because of the inter-dependency of these elements for ALMR service delivery, they are identified and detailed in the following tables. Special attention to the responsible agency column should be paid to ensure responsible parties understand their obligations for ALMR service delivery under the Cooperative and Mutual Aid Agreement, this SLA, and their ALMR membership agreement.

9.1 RF Subsystem Equipment

Descriptions of subsystem equipment are contained in Appendix A.

[Minor] Subsystem [Component] Equipment	Special Notes	Maintenance	Responsible Agency
<p>Console System</p> <p>The console system links dispatch consoles to the system. When the console system is not functioning, dispatchers cannot communicate to subscribers over the system. This can be mitigated by use of consolettes or other radios as a backup.</p> <p>NOTE: The conventional channel gateway unit (CCGW) ties in conventional resources or disparate devices to a dispatch console.</p>	<p>The ALMR Help Desk sends out bi-monthly reports when security patches are available.</p>	<p>Consoles shall be rebooted by the owning agency when notified of security updates by the Help Desk.</p>	<p>See Appendix A, Table A.1.2.</p> <p>Responsibility of the site owning agency unless otherwise noted in Table A.1.1.2.</p>
<p>Key Management Facility (KMF)</p> <p>The KMF system distributes keys over the air to enabled and authorized subscriber equipment. Failure of the KMF</p>		<p>Monthly reboots are required.</p>	



<p>system may result in incompatible keys among subscriber units, preventing encrypted communication. A backup mechanism is manually keying the radios using a key variable loader (KVL).</p> <p>Location:</p> <ul style="list-style-type: none"> • Tudor Road <p>Locations:</p> <ul style="list-style-type: none"> • JBER • Eielson • FWA 	<p>KMF costs include both operations and connectivity.</p>		<p>ALMR contracted maintenance provider.</p> <p>Responsibility of owning agency, as listed.</p>
<p>Network Management Terminals</p> <p>Network management terminals allow System Managers and technicians to manage and control the system.</p>	<p>NMT costs include both operations and connectivity.</p>	<p>Monthly reboots are required.</p>	<p>See Appendix A, Table A.1.2.</p>
<p>Playback/Logging Recorders</p> <p>Logging recorders are installed to keep track of/record conversations for response and liability purposes.</p>	<p>N/A</p>	<p>Monthly reboots are required.</p>	<p>Responsibility of the owning agency.</p>
<p>Data Servers</p> <p>Data servers are computer software and hardware (a database platform) that provide supporting information and can perform tasks such as data analysis, storage, data manipulation, archiving, and other tasks using client/server architecture.ⁱ</p> <p><small>ⁱ Definition taken from https://www.webopedia.com/TERM/D/data_server.html</small></p>	<p>N/A</p>	<p>Should be maintained per the manufacturer's recommendations for maintenance and safety. This does not apply to third-party commercial providers; however, it is expected that they would have a</p>	<p>Responsibility of the owning agency, when listed.</p>



		defined reasonable standard to which they adhere.	
<p>Bi-Directional Amplifiers (BDAs)</p> <p>BDAs provide RF coverage in locations that have little to no coverage, normally within buildings/enclosed structures where RF is unable to penetrate adequately.</p> <p>Locations:</p> <ul style="list-style-type: none"> • 4-25 HQ/Barracks Bldg. 602 (11ABN/USARAK) • 59th Signal Battalion Bldg. 652 (11ABN/USARAK) • Colony High School (Mat-Su Borough School District) • FRA - Garrison Staff Bldg. 600 (11ABN/USARAK) • JBER - Alt Command Post Bldg. 10471, AMX/PA Bldg. 10480, Joint Military Mall/Commissary Bldg. 5800, and People Center/SFS Bldg. 8517 (JBER) • MatSu Fire Station 6-2 (MatSu Borough) • MatSu Regional (MatSu Regional Hospital) • Menard Sports Complex (Mat-Su Borough) • Mt. Edgecumbe Hospital(City of Sitka) • National Guard Armory Areas A-F (SOA) • Nesbett Courthouse (SOA) • Ted Stevens Anchorage International Airport (SOA) • USARAK HQ Building 1 (11ABN/USARAK) • Valdez Alyeska Pipeline Terminal Guard Station (Alyeska Pipeline) • Wasilla Walmart (Wasilla PD) • Whittier Tunnel (SOA) 	<p>BDA performance cannot be tracked unless the user is physically present at that location.</p> <p>Responses will have to be on a break-fix basis.</p> <p>Owning agency must provide ALMR a point of contact in case of interference.</p>	<p>A preventive maintenance inspection (PMI) should be performed annually as required by the International Fire Codes, or more often, if needed.</p> <p>Responsibility of the owning agency, as listed in parentheses.</p>	<p>Responsibility of the owning agency, as listed in parentheses.</p>



<p>Telephone Interconnect</p> <p>Telephone interconnect is an optional feature that blends LMR and the Public Switched Telephone Network (PSTN) into a single capability. This capability can be replaced by cellular or land-line telephones where coverage exists.</p>	<p>Not a Critical Service</p>	<p>N/A</p>	<p>ALMR contracted maintenance provider (Birch Hill).</p>
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MotoBridge® Gateway System	Special Notes	Maintenance	Responsible Agency
<p>OMC/ACP/SIP</p> <p>The OMC/ACP/SIP may need to support critical operations and will need a high level of availability.</p>	<p>MotoBridge® is at end of life and is no longer supported by Motorola.</p>	<p>MotoBridge® is at end of life and is no longer supported by Motorola, except as outlined in the current maintenance provider contract.</p>	<p>Refer to Appendix A, Table A.1.1.</p>
<p>WSGU/Dispatch Console</p> <p>MotoBridge® WSGU/dispatch console resources will be used on an as-needed basis. Failures will be addressed on a break-fix basis for each location.</p>	<p>MotoBridge® is at end of life and is no longer supported by Motorola.</p>	<p>MotoBridge® is at end of life and is no longer supported by Motorola, except as outlined in the current maintenance provider contract.</p>	<p>Refer to Appendix A, Table A.1.1.</p>



RGU/Radio Resources			
MotoBridge® RGU/radio resources will be used on an as-needed basis. Failures will be addressed on a break-fix basis for each location.	MotoBridge® is at end of life and is no longer supported by Motorola.	MotoBridge® is at end of life and is no longer supported by Motorola, except as outlined in the current maintenance provider contract.	Refer to Appendix A, Table A.1.1.

WAVE	Special Notes	Maintenance	Responsible Agency
<p>WAVE</p> <p>A subscription-based, communications interoperability platform for push-to-talk that instantly connects across different devices, disparate networks, and locations to communicate between smartphones, radios, computers, or landlines.</p> <p>NOTE: The WAVE at Fort Wainwright is not connected to the network through data connections but instead utilizes a donor radio.</p> <p>The WAVE on AWARN connects to the system through an Inter-RF Subsystem Interface (ISSI) gateway.</p>	<p>WAVE is currently deployed on AWARN and at Fort Wainwright.</p>	<p>Maintenance is expected to be performed per the manufacturer's recommendation.</p> <p>The WAVE installation for USARAK will be covered by Motorola.</p>	<p>Responsibility of the owning agency unless otherwise noted.</p>

9.2 Physical Site Equipment

Site Equipment	Special Notes	Maintenance	Responsible Agency
<p>Shelters</p> <p>All physical aspects of the structure that houses the ALMR equipment, regardless of the material utilized, includes:</p>	<p>An audit checklist will be completed during the</p>	<p>Will be maintained per the manufacturer's</p>	<p>Responsibility of the site owning</p>



<p>walls, doors, windows, flooring/subflooring, foundation, roofing, electrical, insulation, and HVAC.</p> <p>NOTE: Motorola R56 Standards and Guidelines will pertain to Motorola equipment and operation.</p>	<p>annual PMI and the owning agency will be notified of any issues. Deviations identified during the PMI should ideally be corrected within 90 days.</p>	<p>recommendations and as outlined in the Motorola “R56- Standards and Guidelines for Communication Systems,” and as amended and agreed upon by the User Council. This does not apply to third-party commercial providers. However, it is expected that they would have a defined reasonable standard to which they adhere.</p>	<p>agency unless otherwise noted. (see Appendix C)</p>
<p>Towers</p> <p>Tower physical structure, regardless of the material, including tower licenses, painting, guy wires/tension cables, tower inspections, tower loading studies, lighting, and lightning arrestors.</p> <p>NOTE: Motorola R56 Standards and Guidelines will pertain to Motorola equipment and operation.</p>	<p>An audit checklist will be completed during the annual PMI and the owning agency will be notified of any issues.</p> <p>Deviations identified during the PMI should ideally be corrected within 90 days.</p>	<p>Should be maintained per the manufacturer’s recommendations and industry standards for maintenance and safety. This does not apply to third-party commercial providers; however, it is expected that they would have a defined reasonable standard to which they adhere.</p>	<p>Responsibility of the site owning agency unless otherwise noted. (see Appendix C)</p>



<p>Site/Back-Up Power</p> <p>Site/back-up power, including panels, chargers, inverters, batteries, and generators.</p> <p>NOTE: Motorola R56 Standards and Guidelines will pertain to Motorola equipment and operation.</p>	<p>An audit checklist will be completed during the annual PMI and the owning agency will be notified of any issues.</p> <p>Deviations identified during the PMI should ideally be corrected within 90 days.</p>	<p>Should be maintained per the manufacturer’s recommendations and as outlined in the Motorola “R56-Standards and Guidelines for Communication Systems,” and as amended and agreed upon by the User Council. This does not apply to third-party commercial providers. However, it is expected that they would have a defined reasonable standard to which they adhere.</p>	<p>Responsibility of the site owning agency unless otherwise noted. (see Appendix C)</p>
<p>Site Physical Area</p> <p>Physical site area includes access roads and/or paths, aerial landing sites, fencing, security, vegetation control, pest control, etc.</p> <p>NOTE: Motorola R56 Standards and Guidelines will pertain to Motorola equipment and operation.</p>	<p>An audit checklist will be completed during the annual PMI and the owning agency will be notified of any issues.</p> <p>Deviations identified during the PMI should ideally be corrected within 90 days.</p>	<p>Should be maintained as outlined in the Motorola “R56-Standards and Guidelines for Communication Systems” and as amended and agreed upon by the User Council. This does not apply to third-party commercial providers.</p>	<p>Responsibility of the site owning agency unless otherwise noted. (see Appendix C)</p>



		However, it is expected that they would have a defined reasonable standard to which they adhere.	
<p>Equipment and Site Grounding</p> <p>All equipment contained within the shelter, attached to the shelter, or in the immediate vicinity of the shelter that is part of the associated site and the required grounding.</p> <p>NOTE: Motorola R56 Standards and Guidelines will pertain to Motorola equipment and operation.</p>	<p>An audit checklist will be completed during the annual PMI and the owning agency will be notified of any issues.</p> <p>Deviations identified during the PMI should ideally be corrected within 90 days.</p>	<p>Should be maintained as outlined in the Motorola "R56- Standards and Guidelines for Communication Systems," and as amended and agreed upon by the User Council. This does not apply to third-party commercial providers. However, it is expected that they would have a defined reasonable standard to which they adhere.</p>	<p>Responsibility of the site owning agency unless otherwise noted. (see Appendix C)</p>

9.3 Communications Transport Equipment and Services

Communications Transport Network	Special Notes	Maintenance	Responsible Agency
<p>SATS</p> <p>The communications transport and microwave network owned by the State of Alaska to include all hops, rings, circuits, etc.</p>	<p>Required to have the same availability as the zone controllers and the RF</p>	<p>Annual periodic maintenance inspection</p>	<p>Responsibility of the State of Alaska.</p>



	equipment. Without SATS, System usage is impaired.		
<p>Commercial Leased Circuits</p> <p>The communications transport network is required to have the same availability as the zone controllers and the RF equipment. A private telecommunications circuit between two or more locations is at times required to provide the necessary transport network and is obtained via a commercial contract. Without dedicated transport resources, System usage is impaired.</p> <p>Location(s): Auke Lake - SOA M/W and leased circuit (SOA) Blueberry Hill – SOA M/W and MOA M/W (SOA and MOA) Dimond Courthouse - SOA M/W and leased circuit (SOA) FS-12 - SOA M/W and MOA M/W (SOA and MOA) Haines - SOA M/W and leased circuits (SOA) High Mountain - SOA M/W and leased circuits (SOA) Mt Sunnahae - SOA MW and leased circuits (SOA) New Knik – SOA M/W and MOA M/W (SOA and MOA) Pillar Mountain – SOA M/W and leased circuit (SOA) Portage – ARRC fiber and leased circuit (SOA) Saddle Mountain - SOA MW and leased circuit (SOA) Sitka - SOA and leased circuit (SOA) Skagway - SOA MW and leased circuits (SOA) Whittier - SOA MW and Alaska Railroad Fiber (SOA) Women’s Bay – SOA MW and leased circuit (SOA)</p>	<p>Circuits are leased via contract. The leasing agency is responsible for maintaining a contact list for the circuit-owning agency to ensure connectivity is provided 24/7.</p>	<p>Responsibility of the owning agency.</p>	<p>Responsibility of leasing agency, as listed in the parentheses. (See Appendix C)</p>
<p>Channel Banks</p> <p>Provide a connectivity gateway from the system central controllers to the remote RF sites.</p>	<p>N/A</p>	<p>Responsibility of the site owning</p>	<p>Responsibility of the site owning agency,</p>



<p>Locations: Tudor Road (Arca-DACS) Birch Hill (Arca-DACS) R-1 North (Fiber MUX)</p>		<p>agency, unless listed otherwise here.</p>	<p>unless listed otherwise here. ALMR contracted maintenance provider</p>
<p>User Provided Circuits</p> <p>The communications transport network is required to have the same availability as the zone controllers and the RF equipment. Without the user-provided transport, System usage is impaired.</p> <p>Microwave links owned by the DoD R1 North to Alcantra (JBER) Kobe to Clear (Clear AFS) Birch Hill to Quarry Hill (Eielson AFB) Ft Greely to Delta (USARAK) Quarry Hill to Pole Hill (USARAK) Pole Hill to Hill 3265 (USARAK) Pole Hill to Donnelly Dome (USARAK)</p>	<p align="center">N/A</p>	<p>Responsibility of the site owning agency as listed in parentheses, unless otherwise noted. (see Appendix C)</p>	<p>Responsibility of the site owning agency as listed in parentheses, unless otherwise noted. (see Appendix C)</p>
<p>Fiber Rings</p> <p>A ring topology is often used in applications where long distances may make it difficult to run fiber in a star formation from a central switch and where downtime must be minimized.ⁱⁱ</p> <p>Location(s): JBER (AT&T)</p>	<p align="center">N/A</p>	<p>Responsibility of the site owning agency as listed in parentheses, unless otherwise noted.</p>	<p>Responsibility of the site owning agency as listed in parentheses, unless otherwise noted. (see Appendix C)</p>

ⁱ Definition from Black Box Network Services, Inside the Box e-newsletter, undated, <https://bboxblog.wordpress.com/2012/05/22/fiber-ring-topology-provides-both-distance-and-resilience/>

ⁱⁱ Definition obtained from Wikipedia, https://en.wikipedia.org/wiki/Leased_line



9.4 Subscribers.

Subscriber	Special Notes	Maintenance	Responsible Agency
<p>Subscriber unit</p> <p>A radio, whether fixed, mobile, or portable, belonging to a private entity and operating on the ALMR system.</p>	<p>Subscriber units are radios purchased by ALMR user agencies to access the ALMR System.</p>	<p>Programming/re-programming, inventory, and annual maintenance.</p>	<p>Responsibility of the owning agency. (see Appendix D)</p>



ON BEHALF OF ALL STATE OF ALASKA AGENCIES

Signed:

Leon Morgan
Deputy Commissioner
Department of Public Safety

Date: _____

ON BEHALF OF ALL DEPARTMENT OF DEFENSE-ALASKA AGENCIES

Signed:

Nicholas DeAngelis
Colonel, USAF
ALCOM/ANR J6, Director for C4 Systems

Date: _____

ON BEHALF OF ALL FEDERAL NON-DoD AGENCIES

Signed:

Jocelyn Fenton
President
Alaska Federal Executive Association

Date: _____



Appendix A Detailed ALMR Motorola ASTRO™ P25 System Description

1.0 System Equipment

The system is a multiple-zone design that is divided into two zones. All sites south of the Denali Highway, including the SE and Kodiak, are in Zone 1, while those sites north of the Denali Highway are in Zone 2. Each zone has a Master Site and several radio frequency (RF) sites. The Master Site for Zone 1 is located in Anchorage. The Master Site for Zone 2 is located in Fairbanks.

1.1 Master Sites

The Anchorage Master Site for Zone 1 serves as a core network center for the entire SmartZone system. Data packets from the various system sites are routed through, and processed from, this network center. The user configuration server, system level, and network security servers for the system are located at the Zone 1 Master Site. The Anchorage site is interconnected to the Zone 2 Master Site in Fairbanks via ethernet originating and terminating into routers at each end.

The Fairbanks SmartZone Master Site as Zone 2 serves as a core network center for Zone 2. Data packets from the various system sites are routed through and processed from this network center.

Equipment associated with each Master Site includes a primary and redundant Zone Controller, the main ethernet switch, core, gateway and exit routers, and zone database.

The Anchorage Zone Controller (Zone 4) servicing the Municipality of Anchorage (MOA) - Anchorage Wide Area Radio Network (AWARN). This zone provides interoperability between the ALMR very high frequency (VHF) and AWARN 700/800 MHz digital trunked talkgroups.

1.2 Radio Frequency (RF) Site Equipment

The RF site equipment includes a quantity of GTR8000s, redundant site controllers, and router to interface the data packets to the SmartZone Master Sites. The RF equipment includes the associated multi-coupler, combiner, antenna system, Motorola System Control and Data (MOSCAD) fault alarm system, and 48 VDC power supplies. For purposes of this SLA, this category also includes bi-directional amplifier (BDA) systems that support wide-area connectivity, and the associated RF antenna systems consisting of transmit and receive antennas, coaxial cables, lightning arrestors, grounding kits, and mounting brackets/other fasteners.



2.0 Subsystem Equipment

Subsystem equipment connects directly to the system or enhances the system functionality. These subsystems include dispatch consoles, Key Management Facilities (KMFs), Network Management Terminals (NMTs), telephone interconnect systems, logging recorders, data servers, and BDAs that apply to a specific building.

2.1 Console System

Console systems are made up of a single operator position or multiple operator positions at a console site. The site may utilize T1 or a ethernet connection to the zone controller. The bandwidth requirements are provided by the manufacturer. The ALMR system is a closed network, requiring all connectivity to be approved by the System Manager and Information Systems Security Manager (ISSM).

2.1.1 Consoles may operate using control stations to access the system. Consoles using this configuration utilize an RF connection for the talkpaths and have no network requirements. The radios are required to be on the ALMR approved subscriber list.

2.1.2 The conventional channel gateway (CCGW) enables both analog and digital channels to interface with consoles with no need for a separate hardware network and channel banks. This capability provides system interoperability with conventional radio systems through a patch, or by communicating directly with non-system radios.

2.1.3 Tie trunks are connections between CCGW ports and disparate systems. These can be permanent or temporary patches that link different dispatch systems and their associated resources.

2.2 Key Management Facility

The Motorola™ ASTRO P25 system allows two-way radio transmissions to be secured using encryption. The Key Management Facility (KMF) is a solution for centralized key management and over-the-air rekeying (OTAR) or over-the-ethernet keying (OTEK). The KMF equipment includes a KMF application server, KMF database server, and KMF client.

2.3 Network Management Terminals

Network Management Terminals (NMTs) are consoles that connect to the system. The NMT is used by authorized agencies, the System Manager, and technologists to manage their radio fleet units and configurations. While NMTs can be utilized to manage and operate more than one agency's system operations, they are usually controlled by one agency.



2.4 Telephone Interconnect

The telephone interconnect subsystem provides a means to connect the System with the Public Switched Telephone Network (PSTN) allowing properly programmed system subscriber radios to initiate and receive half-duplex telephone calls. Telephone interconnectivity is not considered a critical service. The telephone interconnect system is located at the Zone 2 Master Site in Fairbanks.

2.5 Logging Recorder

Voice logging recorders are directly associated with the console system at a particular dispatch location.

2.6 Data Server

Includes all equipment associated with the integrated voice and data servers, which can provide data over the network.

2.7 Bi-Directional Amplifier

Bi-directional amplifiers (BDAs) extend coverage into, or within, a particular facility or tunnel by repeating transmissions to and from an available donor RF site. BDAs for infrastructure sites are addressed under the RF site equipment category.

3.0 MotoBridge® Gateway System

ALMR has installed a Motorola™ MotoBridge® gateway network that has connectivity to system talkgroups, but it is separate from the system network. It is on a State of Alaska local area network (LAN) with connectivity through SATS.

The MotoBridge® system, known as the Alaska Interoperability Network (AIN), provides interoperability between various communications networks with a radio-over-IP system. Central management of the AIN system is provided by dual-redundant management servers located in Fairbanks and Anchorage. Other components consist of dispatch positions with Workstation Gateway Units (WSGU) and computer consoles for linking conventional and trunked two-way radio systems together, and Radio Gateway Units (RGU) that physically tie the dissimilar radio resources to the network.

MotoBridge® is past its end of life and is being phased out of the system.

3.1 Operations Management Center Server



The Operations Management Center (OMC) Server is the main management server in the system and a central repository where all system users and resources (i.e., administrators, dispatchers, and radios) are registered, and where system-wide information (i.e., active patches and conferences, security parameters, etc.) is stored. The OMC Server runs on the Red Hat Linux® operating system. A user-level interface to the OMC Server is provided by the Administrator Control Panel (ACP) Client PC. The primary OMC Server is located in Zone 1 in Anchorage in the Master Site and the secondary OMC Server is located in Zone 2 in Fairbanks.

3.2 Administrator Control Panel

The Administrator Control Panel (ACP) Client PC allows an administrator, located anywhere in the System, to perform management activities for the system. The ACP Client PC runs on the Microsoft operating system. An ACP Client PC is located with each of the OMC servers.

3.3 Session Initiation Protocol Proxy Server

The Session Initiation Protocol (SIP) Proxy Server is a signaling server for establishing talkpaths (calls) across the system. The SIP Proxy Server complies with international standards for multimedia call routing and telephony services on the Internet. The SIP Proxy Server interacts with the gateway units in the system, which implements the SIP user-agent portion of the standard. The SIP Proxy Server runs on the Red Hat Linux operating system.

3.4 Radio Gateway Unit and Workstation Gateway Unit

The Radio Gateway Unit (RGU) and Workstation Gateway Unit (WSGU) are based on one hardware platform, which can be configured to serve as either a RGU or a WSGU. The RGU connects radio equipment to the system. The WSGU interfaces with the Dispatch Console Desktop Computer (DTC).

The Dispatch Console DTC enables a dispatcher to activate the WSGU, which allows control over many connected remote radios, intercom connections, audio conferences and phone calls. The Dispatch Console PC runs on the Microsoft® operating system.

4.0 WAVE

WAVE is a subscription-based, communications interoperability platform for push-to-talk that instantly connects across disparate networks, different devices, and locations to communicate between smartphones, radios, computers, or landlines.



5.0 Site Equipment

Major components of the system are the remote equipment sites, as identified in Appendix A. Without appropriate site and supporting equipment, the system will not function properly. The supporting site equipment includes communication equipment shelters, transmission towers, site/backup power, and site physical area.

5.1 Shelters

This category includes all stand-alone shelters, both prefabricated and stick-built, used for housing the system and associated communication equipment. For areas within existing buildings, this also includes required improvements to the rooms where the system and associated communications equipment is housed. Components in the shelters include racks, internal wiring, grounding, external ice bridges, foundations and leveling, exterior lighting, heating, ventilation and air conditioning (HVAC), louvers, fans, and door locks.

5.2 Towers

This category includes all components of the tower including the foundation, frame and ladders, grounding, painting, guy wires (as applicable), beacons, foundations, and anchors.

5.3 Site/Back-Up Power

This category includes the distribution panel for external power, inverters, battery plants, battery chargers, and generators. Also included are generator fuel tanks, generator enclosures, and exhaust piping. This category includes backup generators and uninterrupted power source (UPS) systems associated with the Zone Controllers.

5.4 Site Physical Area

This category includes all activities for the right-of-way and the area surrounding the structure for which the system is responsible. This would include grading, plowing and graveling access roads, brushing, mowing, and fencing around the area where the shelter and tower are located.

5.5 Equipment and Site Grounding

All site equipment shall be bonded together to form a single common earth ground electrode system as outlined in the Motorola "R56 - Standards and Guidelines for Communication Systems." All internal and external grounding must be in working order and maintained through the life of system usage.



6.0 Communications Transport Network

All voice and data signals that are carried on the system are transported to the Zone 1 Master Controller via SATS or Zone 2 Master Controller via SATS or DoD systems. SATS and DoD systems are comprised of multiple methods of network connectivity to include microwave, commercially leased circuits, and local fiber networks and fall under the responsibility of the SOA or DoD to maintain. In some locations, the connectivity links are provided by Municipality of Anchorage systems before connecting into SATS.

6.1 Microwave Hops. Within the system there are also microwave hops owned by the DoD. These microwave hops are not covered under the maintenance contract and are the responsibility of the individual owning service agency.

6.2 Channel Banks. The system channel banks provide a connectivity gateway from the system central controllers to the remote RF sites. The channel banks provide individual Channel Service Units (CSU) to each remote site location and link them to the Master Site zone controller.

6.3 Fiber Rings. Although Ethernet is usually thought of as having a star topology, it is also possible to build an Ethernet network as a ring. This configuration has the advantage of providing a redundant pathway if a link goes down. A ring topology is often used in applications such as traffic signals and surveillance, where long distances may make it difficult to run fiber in a star formation from a central switch and where downtime must be minimized.¹

6.4 Leased circuit. A private telecommunications circuit between two or more locations provided according to a commercial contract. Each side of the line is permanently connected, always active, and dedicated to the other. Leased lines can be used for telephone, internet, or other data communication services.²

6.5 Subscriber Unit. A device with radio-telephone capabilities whether fixed, mobile, transportable, vehicular, portable, or hand-held.

¹ Definition taken from Black Box Network Services, Inside the Box e-newsletter, undated, <https://bboxblog.wordpress.com/2012/05/22/fiber-ring-topology-provides-both-distance-and-resilience/>

² Definition obtained from Wikipedia, https://en.wikipedia.org/wiki/Leased_line



7.0 Non-RF Site Connectivity Requirements

Table A.1.1 MotoBridge®. MotoBridge® gateway devices are at the end of life. Some units are still in use providing hard-wired patches/connections between agencies.

Site	MotoBridge®	Owning Agency
Anchorage - Tudor Rd ALMR Rm	1 unit	SOA
Byers - SATS	1 unit	SOA
Eielson AFB - SF Dispatch	1 unit	DOD-Eielson
Eielson – Quarry Hill	1 unit	DOD-Eielson
Fairbanks APSCS/DOF Supply Rd shop	1 unit	SOA
Ft Greely	2 units	DOD-USARAK
Ft Greely – West Tower	1 unit	DOD-USARAK
Ft Wainwright	1 unit	DOD-USARAK
Ft Wainwright – Birch Hill Controller	3 units**	DOD-USARAK
Glennallen – SATS	1 unit	SOA
JBER – Fire Station 1	1 unit	DOD-JBER
JBER – MOC	1 unit	DOD-JBER
JBER – R1 North	2 units	DOD-JBER
JBER - RCC	2 units	DOD-JBER
Site Summit	1 unit	DOD-USARAK
Sterling – SATS Site	1 unit	SOA
Tok - SATS	1 unit	SOA
Transportable Area South (not funded-no connectivity)	3 units	DOD-ALCOM
Transportable Area North (not funded-no connectivity)	3 units	DOD-ALCOM
Main OMC/ACP/SIP Server – Anchorage (Tudor Rd)	1 unit each	SOA



Table A.1.2 Consoles.

Consoles are purchased and operated by individual agencies for the purposes of dispatching.

ZONE 1 - Consoles				
Agency	Motorola Site ID	Site Name	Type	Contract
DOD	SZ01421D7	JBER FRA PMO – OP1	MCC 7500	Yes
DOD	SZ01421D8	JBER FRA Fire – OP1	MCC 7500	Yes
DOD	SZ01421D8	JBER FRA Fire – OP2	MCC 7500	Yes
DOD	SZ01421D10	ELM ALT MOC – OP1	MCC 7500	Yes
DOD	SZ01421D11	JBER MOC – OP1	MCC 7500	Yes
DOD	SZ01421D11	JBER MOC – OP2	MCC 7500	Yes
DOD	SZ01421D11	JBER MOC – OP3	MCC 7500	Yes
DOD	SZ01421D11	JBER MOC – OP4	MCC 7500	Yes
DOD	SZ01421D11	JBER MOC – OP5	MCC 7500	Yes
DOD	SZ01421D12	JBER Fire – OP1	MCC 7500	Yes
DOD	SZ01421D12	JBER Fire – OP2	MCC 7500	Yes
DOD	SZ01421D12	JBER SF – OP3	MCC 7500	Yes
DOD	SZ01421D13	JBER SF – OP1	MCC 7500	Yes
DOD	SZ01421D13	JBER FD – OP2	MCC 7500	Yes
SPSCC	SZ01421D24	Soldotna Public Safety Communications Center (SPSCC) – OP1	MCC 7500	Yes
SPSCC	SZ01421D24	Soldotna Public Safety Communications Center (SPSCC) – OP2	MCC 7500	Yes
SPSCC	SZ01421D24	Soldotna Public Safety Communications Center (SPSCC) – OP3	MCC 7500	Yes
SPSCC	SZ01421D24	Soldotna Public Safety Communications Center (SPSCC) – OP4	MCC 7500	Yes
SPSCC	SZ01421D24	Soldotna Public Safety Communications Center (SPSCC) – OP5	MCC 7500	Yes
SPSCC	SZ01421D24	Soldotna Public Safety Communications Center (SPSCC) – OP6	MCC 7500	Yes
SPSCC	SZ01421D24	Soldotna Public Safety Communications Center (SPSCC) – OP7	MCC 7500	Yes
SPSCC	SZ01421D24	Soldotna Public Safety Communications Center (SPSCC) – OP9	MCC 7500E	Yes



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SPSCC	SZ01421D24	Soldotna Public Safety Communications Center (SPSCC) – OP10	MCC 7500E	Yes
SPSCC	SZ01421D24	Soldotna Public Safety Communications Center (SPSCC) – OP11	MCC 7500E	Yes
DOC	SZ01421D25	Goose Creek Correction Center (GCCC) – OP1	MCC 7500	Yes
DOC	SZ01421D25	Goose Creek Correction Center (GCCC) – OP2	MCC 7500	Yes
DOC	SZ01421D25	Goose Creek Correction Center (GCCC) – OP3	MCC 7500	Yes
DOC	SZ01421D25	Goose Creek Correction Center (GCCC) – OP4	MCC 7500	Yes
DHSEM	SZ01421D26	Armory – OP1	MCC 7500	Yes
MATCOM	SZ01421D27	MATCOM – OP1	MCC 7500	No
MATCOM	SZ01421D27	MATCOM – OP2	MCC 7500	No
MATCOM	SZ01421D27	MATCOM – OP3	MCC 7500	No
MATCOM	SZ01421D27	MATCOM – OP4	MCC 7500	No
MATCOM	SZ01421D27	MATCOM – OP5	MCC 7500	No
MATCOM	SZ01421D27	MATCOM – OP6	MCC 7500	No
Palmer PD	SZ01421D28	Palmer PD – OP1	MCC 7500	No
Palmer PD	SZ01421D28	Palmer PD – OP2	MCC 7500	No
Palmer PD	SZ01421D28	Palmer PD – OP3	MCC 7500	No
Palmer PD	SZ01421D28	Palmer PD – OP4	MCC 7500	No
Valdez PD	SZ01421D29	Valdez PD – OP1	MCC 7500	No
Valdez PD	SZ01421D29	Valdez PD – OP2	MCC 7500	No
Valdez PD	SZ01421D29	Valdez PD – OP3	MCC 7500	No
DOF	SZ01421D40	Department of Forestry - Soldotna – OP1	MCC 7500E	Yes
DOF	SZ01421D40	Department of Forestry - Soldotna – OP2	MCC 7500E	Yes
DOF	SZ01421D41	Department of Forestry - Palmer – OP1	MCC 7500E	Yes
DOF	SZ01421D41	Department of Forestry - Palmer – OP2	MCC 7500E	Yes
DOF	SZ01421D41	Department of Forestry - Palmer – OP3	MCC 7500E	Yes
DOF	SZ01421D41	Department of Forestry - Palmer – OP4	MCC 7500E	Yes



Tudor Road	SZ01421D107	Tudor Road - TR MCC - OP1	MCC 7500	Yes
ZONE 2 - Consoles				
Agency	Motorola Site ID	Site Name	Type	Contract
DOD	SZ01422D5	Eielson Red Flag (RF) – OP1	MCC 7500	Yes
DOD	SZ01422D6	Eielson Security Forces (SF) – OP1	MCC 7500	Yes
DOD	SZ01422D6	Eielson Security Forces (SF) – OP2	MCC 7500	Yes
DOD	SZ01422D6	Eielson Security Forces (SF) – OP3	MCC 7500	Yes
DOD	SZ01422D7	Eielson Command Post (CP) – OP1	MCC 7500	Yes
DOD	SZ01422D8	Eielson Alternate Command Post (CP) – OP1	MCC 7500	Yes
DOD	SZ01422D9	Eielson Alternate Fire Department (FD) – OP1	MCC 7500	Yes
DOD	SZ01422D9	Eielson Alternate Fire Department (FD) – OP2	MCC 7500	Yes
DOD	SZ01422D10	Eielson LMR – OP1	MCC 7500	Yes
DOD	SZ01422D11	Fort Wainwright Fire Department – OP1	MCC 7500	Yes
DOD	SZ01422D11	Fort Wainwright Fire Department – OP2	MCC 7500	Yes
DOD	SZ01422D12	Fort Wainwright PMO – OP1	MCC 7500	Yes
DOD	SZ01422D12	Fort Wainwright PMO – OP2	MCC 7500	Yes
DOD	SZ01422D12	Fort Wainwright PMO – OP3	MCC 7500	Yes
DOD	SZ01422D12	Fort Wainwright PMO – OP4	MCC 7500	Yes
DOD	SZ01422D15	Fort Greely – OP1	MCC 7500	Yes
DOD	SZ01422D15	Fort Greely – OP2	MCC 7500	Yes
DOD	SZ01422D16	Birch Hill Master Site – OP1	MCC 7500	Yes
Fairbanks, City of	SZ01422D22	Fairbanks Emergency Communications Center - FECC – OP1	MCC 7500	No
Fairbanks, City of	SZ01422D22	Fairbanks Emergency Communications Center - FECC – OP2	MCC 7500	No
Fairbanks, City of	SZ01422D22	Fairbanks Emergency Communications Center - FECC – OP3	MCC 7500	No
Fairbanks, City of	SZ01422D22	Fairbanks Emergency Communications Center - FECC – OP4	MCC 7500	No
Fairbanks, City of	SZ01422D22	Fairbanks Emergency Communications Center - FECC – OP5	MCC 7500	No
Fairbanks, City of	SZ01422D22	Fairbanks Emergency Communications Center - FECC – OP6	MCC 7500	No



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Fairbanks, City of	SZ01422D22	Fairbanks Emergency Communications Center - FECC – OP7	MCC 7500	No
Fairbanks, City of	SZ01422D22	Fairbanks Emergency Communications Center - FECC – OP8	MCC 7500	No
Fairbanks, City of	SZ01422D22	Fairbanks Emergency Communications Center - FECC – OP9	MCC 7500	No
Fairbanks, City of	SZ01422D22	Fairbanks Emergency Communications Center - FECC – OP10	MCC 7500	No
Fairbanks, City of	SZ01422D24	Fairbanks EOC (Alt Loc) – OP1	MCC 7500	No
Fairbanks, City of	SZ01422D24	Fairbanks EOC (Alt Loc) – OP2	MCC 7500	No
DOT	SZ01422D23	Fairbanks International Airport (FIA) - DOT – OP1	MCC 7500E	Yes
DOT	SZ01422D23	Fairbanks International Airport (FIA) - DOT – OP2	MCC 7500E	Yes
DOT	SZ01422D23	Fairbanks International Airport (FIA) - DOT – OP3	MCC 7500E	Yes
AST	SZ01422D25	DPS - Fairbanks AST – OP1	MCC 7500	Yes
AST	SZ01422D25	DPS - Fairbanks AST – OP2	MCC 7500	Yes
AST	SZ01422D25	DPS - Fairbanks AST – OP3	MCC 7500	Yes
AST	SZ01422D25	DPS - Fairbanks AST – OP4	MCC 7500	Yes
AST	SZ01422D25	DPS - Fairbanks AST – OP5	MCC 7500	Yes
AST	SZ01422D25	DPS - Fairbanks AST – OP6	MCC 7500	Yes
AST	SZ01422D25	DPS - Fairbanks AST – OP7	MCC 7500	Yes
AST	SZ01422D25	DPS - Fairbanks AST – OP8	MCC 7500	Yes
AST	SZ01422D25	DPS - Fairbanks AST – OP9	MCC 7500	Yes
AST	SZ01422D25	DPS - Fairbanks AST – OP10	MCC 7500	Yes
DOF	SZ01422D40	NFDC Forestry - Fairbanks – OP1	MCC 7500E	Yes
DOF	SZ01422D40	NFDC Forestry - Fairbanks – OP2	MCC 7500E	Yes
DOF	SZ01422D40	NFDC Forestry - Fairbanks – OP3	MCC 7500E	Yes
DOF	SZ01422D40	NFDC Forestry - Fairbanks – OP4	MCC 7500E	Yes
DOF	SZ01422D40	NFDC Forestry – Fairbanks – OP5	MCC 7500E	Yes



Appendix B Administration/Management

1.0 Executive Council. The Executive Council will empower the User Council to define, modify, and select the support services as defined within this document.

2.0 User Council. The User Council will define, modify, and select the support services as defined within this document.

2.1 General Responsibilities. The User Council has the following general responsibilities under this agreement:

2.1.1 Define the level of system maintenance and operations services required and present this information to the Executive Council.

3.0 Operations Management Services

The Operations Manager is a cost-shared position and reports functionally to the User Council yet has the authority to represent the User Council interests and make decisions on issues related to the day-to-day operation of the system, and any urgent or emergency system operational or repair decisions, as permitted by this and any and all other memoranda of understanding or agreement.

An urgent or emergency situation will be one where immediate decision authority is needed to allow the system as a whole, or any of the critical components, to continue supporting normal wide-area communications.

It is recognized that the Operations Manager may have to obtain authorizations from the appropriate infrastructure-owning agency to make longer-term or non-emergency capital or repair expenditure decisions.

3.1 Direct Responsibilities. The Operations Manager has direct responsibility for:

3.1.1 All activities dealing with operations support for portions of the shared system infrastructure, as approved by the ALMR Executive Council.

3.1.2 Coordinating with the User Council to manage the operation of the system to comply with specified parameters, service levels, and metrics defined in this SLA.

3.1.3 Coordinating with the User Council to recommend policies, procedures, contracts, organizations, and agreements that provide the service levels as defined in this SLA.

3.1.4 A complete list of OMO services is outlined in the OMO Customer Support Plan located on the ALMR website.



4.0 System Management Office (SMO) Services

To properly support system operations and maintenance (O&M), users and service providers are required to have properly qualified personnel. This includes System Managers and System Technologist/Technicians whose requirements are minimum thresholds and non-negotiable. Individuals filling these roles must be compliant 100 percent of the time. A complete list of SMO services is outlined in the SMO CSP located on the ALMR website.

5.0 Training

Manufacturer recommended courses are necessary to achieve system training goals. These requirements are minimum thresholds. The following link is from Motorola Solutions Education Services Product and System Technical Training Course Catalog. It contains a list of course requirements for P25 components to which the ALMR contracted service providers must be proficient.

https://www.motorolasolutions.com/en_us/products/training.html

Logger/recorder solutions are also employed on the ALMR system. They are trusted by emergency response organizations to reliably record emergency communications for compliance, liability management, and quality assurance/quality improvement.

Recorded voice, text, and data is encrypted and protected from unauthorized access, along with a built-in authentication process to maintain data integrity.ⁱⁱⁱ ALMR contracted service providers are required to have the appropriate levels of training to troubleshoot and maintain the devices.

Local vendors who are contracted by infrastructure-owning agencies to perform maintenance on their components, which are connected to the system, are required to have the same level of manufacturer's training as the ALMR contracted maintenance provider.

ⁱⁱⁱ Taken from <https://www.nice.com/protecting/911-logging-recorder-ems/>



Appendix C Site Ownership

1.0 Responsibilities. Site owners (RF sites, master sites, console sites) have specific responsibilities that come with owning the physical site in which ALMR RF equipment may be housed. Those include, but are not limited to, the equipment and services contained in Section 9 and Table A.1.2.

Other important areas of responsibility unique to site owners are:

- Land use permits or agreements.
- Spectrum agreements and licenses.
- Shelter structure and foundation.
- Site and RF equipment grounding, backup power (including UPS devices).
- Commercial power/leased circuits and use agreements, microwave hops, and fiber rings.
- Heating and cooling systems and all required periodic maintenance to include periodic filter changes.
- Periodic inspections and all maintenance required of power systems to include solar, battery plants, and generators.
- Tower structure, lighting, licensing, painting, and guy wires/straps.
- Antennas and associated coaxial cables.
- Internal equipment racks (other than RF), jumpers, and all site grounding.
- Ice bridges.
- Fencing and gate locks.
- Vegetation control, road maintenance and snow removal.
- Site winterization procedures, as applicable.

It is also the site owner's responsibility to have the current information for points of contact for contracted maintenance/service providers for their sites, including contacts if utilizing commercial power/leased circuits or having connections to fiber rings.

1.1 State of Alaska-owned sites

Zone 1

Alcantra
Anchor River
Atwood
Auke Lake
Bailey Hill
Blueberry Hill
Byers Creek
Chulitna
Cooper Mountain
Cottonwood Creek



Diamond Ridge
Dimond Courthouse
Divide
Ernestine Mountain
Fire Station 12
Girdwood
Glennallen
Goose Creek 700/800MHz
Haines
Heney Range
High Mountain
Honolulu
Hope
Hurricane
Kasilof
Kenai Beacon
Lena Point
Lions Head
Moose Pass
New Knik
Nikiski
Ninilchik
Pillar Mountain
Pipeline Hills
Portage
Rabbit Creek
Saddle Mountain
Sawmill
Seldovia
Seward
Silvertip
Sitka
Skagway
Ski Hill
Sourdough
Sterling
Summit Lake
Sunnahae Mountain
Tahneta Pass
Tolsona
Tsina
Anchorage Master Site
Valdez
Whittier
Willow Creek



Willow Mountain
Wolcott Mountain
Women’s Bay

Zone 2

Beaver Creek
Canyon Creek
Cathedral Rapids
Delta
Dot Lake
Ester Dome
Garner
Harding Lake
Independent Ridge
Money Knob
Nenana
Paxson
Peger Road
Reindeer Hills
Tok
Trims
Yanert

SOA 24-Hour Point of Contact	Phone
On-Call Technician	907-440-8611

1.2 DoD-Owned Sites

Zone 1

R1 North (JBER)
Site Summit (USARAK)
TAS (ALCOM) (not funded/currently no ALMR connectivity)

Zone 2

Birch Hill (USARAK)
Fairbanks Master Site (USARAK)
Black Rapids (USARAK)
Clear (Clear AFS)
Donnelly Dome (USARAK)
Fort Greely (USARAK)
Hill 3265 (Eielson AFB)
Pole Hill (Eielson AFB)
Quarry Hill (Eielson AFB)
TAN (ALCOM) (not funded/currently no ALMR connectivity)



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NOTE: The transportable systems (TAS and TAN) are under a separate maintenance contract, but are still available for deployment, if requested and approved. At this time, the transportables are funded and are in the process of being updated. However, the DoD is working on a new contract at the time of this document update.

DoD 24-hour Point of Contact	24-Hour Point of Contact	Phone
Clear Air Force Station	SATCOM Technician on duty	907-585-6125, satcom3@us.af.mil
Eielson	Communications Focal Point (CFP)	907-377-2666, Option 2
Donnelly Dome, Hill 3265, and Pole Hill (Red Flag)	Range Engineer	907-377-1400(W), 907-488-4862 (H), john.karish.1@us.af.mil
354 Range Sq (Red Flag)	Range Engineer	907-377-1400(W), 907-488-4862 (H), john.karish.1@us.af.mil
Joint Base Elmendorf-Richardson	673 rd Comm. Sq. on-call	907-570-8004
11ABN/USARAK – Fort Greely/Fort Wainwright	Mr. Thomas (Rick) Williams	907-384-2608 (O), 907-351-0936 (C), 317-384-2608 (DSN) Thomas.r.williams82.civ@army.mil



Appendix D Agencies with Subscribers Only

1.0 Responsibilities. The responsibility for having a viable interoperable communications system that meets the technical and operational requirements of the user agencies lies with everyone who utilizes it. Agencies operating subscriber units on the ALMR system have specific responsibilities to their fellow users and to help maintain the security and health of the system.

Radio operators comprise the majority of ALMR users and can compromise the system through unauthorized or inappropriate use of a subscriber radio. Therefore, agencies are expected to know and follow all policies and procedures regarding the ALMR system.

1.1 ALMR provides portable and mobile radio communication coverage (tested to 95% mobile coverage) to its members subject to the member's compliance with recommended optimal performance standards for equipment and maintenance. Each agency is responsible for the proper maintenance and repair of its radio subscriber equipment. Manufacturers typically recommend maintenance/calibration be performed on subscriber units on an annual basis. This assures agency radios are in optimal operating order and will not have an adverse impact on others using ALMR.

Additionally, SOA deploys DiagnostX devices around the system, which scan radios to ensure they are tuned to the proper frequencies. Periodic reports are generated to identify subscribers identified as out of calibration/compliance. Agencies with suspect subscribers should contact their radio shop/vendor promptly to have the radio serviced to ensure it will perform properly. Once the radio has been serviced, the owning agency should contact the OMO to have it removed from the list.

1.2 Each agency who owns subscriber units should ensure appropriate accountability to prevent unauthorized use or monitoring. An annual audit report containing all reported infrastructure equipment, spare infrastructure equipment, software, system keys, and subscriber units will be provided to owning agency POCs no later than the end of December each year. Within two weeks of receipt, the POC should reconcile the report against their records and forward any discrepancies via email or fax to the Help Desk (see Asset Management Procedure 400-8).

1.3 All subscriber unit changes (add/delete/change/inhibit/reinstate) made on the system are required to be reported. These changes are reported by faxing or emailing a completed ALMR Subscriber Request Form to the Help Desk. Some user agencies (DoD) can make changes on their own network management terminal. However, this does not negate the requirement for them to submit a completed Subscriber Request Form to the Help Desk (see Asset Management Procedure 400-8).



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1.4 User agencies should hold regular, in-house training sessions on radio use. This training should include, but is not limited to, day-to-day operations, emergency button use, and multi-agency/multi-jurisdictional responses.

1.5 User agencies are responsible for reviewing talkgroup usage annually and removing inactive/underutilized talkgroups. Agencies are also responsible for their codeplug development and any associated programming fees (see Talkgroup Development Procedure 400-14).



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Agencies with only Subscribers on ALMR

State	Federal Non-DoD	DoD
49th Civic Affairs Brigade	Bureau of Alcohol, Tobacco, Firearms & Explosives	13th Space Warning Squadron - Clear Air Station
103rd Weapons of Mass Destruction - Civil Support	Bureau of Land Management	354th Fighter Wing - Eielson Air Force Base
168th Wing	Customs and Border Protection	673rd Air Base Wing - Joint Base Elmendorf-Richardson
176th Wing	Drug Enforcement Agency	US Army Corps of Engineers - AK District
Alaska Army National Guard	Federal Bureau of Investigation	USARAK (Ft Greely, Ft Wainwright)
Alaska Railroad Corporation	Federal Emergency Management Agency	USMC Detachment - MP Company D, 4th LE Battalion
Alcohol and Marijuana Control Office	DHS ICE Enforcement and Removal Operations	
Civil Air Patrol - Alaska Wing	DHS ICE Homeland Security Investigations	
Department of Corrections	Internal Revenue Service - Criminal Investigations	
Department of Public Safety	National Oceanic & Atmospheric Administration -	
Department of Transportation & Public Facilities	National Park Service	
Division of Alaska Pioneer Homes	Federal Protective Services	
DEC - Environmental Crimes Unit	Transportation Security Administration	
DEC - Environmental Health Lab	US Fish & Wildlife Service	
DEC - Prevention, Preparedness and Response	US Forest Service - Chugach Fire and Aviation Management	
Division of Forestry	US Forest Service - Law Enforcement	
Division of Homeland Security & Emergency Management	US Postal Inspection Service	
Division of Juvenile Justice	US Postal Service Office of the Inspector General	
Division of Parks and Outdoor Recreation	US Marshal Service	
Division of Public Health-Section of Emergency		
Office of Information Technology		
Salcha-Delta Soil and Water Conservation District		
UAF Fire Department		
UAF Police Department		



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Agencies with only Subscribers on ALMR (cont)

Municipalities/NGOs					
Alaska Professional Volunteers	Copper River Native Association	Homer Volunteer Fire Department	Lowell Point Volunteer Fire Department	Palmer Police Department	Valdez Fire Department
Amateur Radio Emergency Services	Cordova Police Department	Hope/Sunrise Fire and Emergency Medical Services	MatSu Borough	Providence Kodiak Island Medical Center	Valdez Police Department
Anchorage Amateur Radio Club - Radio Science and	Craig Police Department	Houston Fire Department	MatSu Borough School District	Providence Seward Medical & Care Center	Wasilla Police Department
Anchorage, Municipality of	Cross Road Medical Center	Juneau Police Department	MatSu Regional Medical Center	Rural-Deltana Volunteer Fire Department	Western Emergency Services
Anderson Volunteer Fire Department & Emergency	Delta Junction Volunteer Fire Department	Katchemak Emergency Services	McKinley Volunteer Fire Department	Salcha Fire Rescue	Whitestone Emergency Medical Services
Anton Anderson Memorial Tunnel VFD	Delta Rescue Squad	Kenai Peninsula Borough	Metlakatla Indian Community	Sand Point Department of Public Safety	Whittier Police Department
Bear Creek Fire/Emergency Medical Services	Ester Volunteer Fire Department	Kenai Peninsula Borough School District	Moose Pass Fire/Emergency Medical Services	Seldovia, City of	
Cantwell Volunteer Fire Department	Fairbanks, City of	Kenai Fire Department	Mt Sanford Tribal Consortium	Seward, City of	
Capital City Fire/Rescue	Fairbanks Memorial Hospital	Kenai Police Department	Naukati Bay Volunteer Fire Department and Emergency	Seward Volunteer Ambulance Corps	
Capital Transit	Fairbanks North Star Borough	Kenaitze Indian Tribe Tribal Security	Nenana, City of	Skagway, Municipality of	
Central Emergency Services	Gakona Fire Department	Kennicott/McCarthy Volunteer Fire Department	Nikiski Fire Department	Soldotna Police Department	
Chena GoldStream Fire Department	Girdwood Fire Department	Kenny Lake Volunteer Fire Department	North Pole, City of	Steese Volunteer Fire Department	
Chickaloon Community Volunteer Fire Department	Glenn Rich Fire and Rescue	Ketchikan, City of	North Star Fire Department	Tok Area Emergency Medical Services	
Chickaloon Tribal Police Department	Guardian Flight	Klawock Police Department	North Tongass Volunteer Fire Department	Tok Volunteer Fire Department	
Cooper Landing Emergency Services	Haines Borough Police Department	Kodiak, City of	Palmer Department of Public Works	Tri-Valley Volunteer Fire Department	
Copper River Emergency Medical Services	Homer Police Department	LifeMed Alaska, LLC	Palmer Fire Department	Valdez, City of	



Appendix E Acronyms and Definitions

Agreement: shortened term used to refer to the Cooperative and Mutual Aid Agreement, Service Level Agreement or Membership Agreement within each associated document after the initial use.

Alaska Federal Executive Association (AFEA): federal government entities, agencies, and organizations, other than the Department of Defense, that operates on the shared ALMR system infrastructure.

Alaska Land Mobile Radio (ALMR) Communications System: the ALMR Communications System, as established in the Cooperative and Mutual Aid Agreement.

Alaska Municipal League: a voluntary non-profit organization in Alaska that represents 165 cities, boroughs, and unified municipalities.

Alaska Public Safety Communication Services (APSCS): a State of Alaska (SOA) office in the Department of Public Safety (DPS) that operates and maintains the SOA Telecommunications System (SATS) supporting ALMR and providing public safety communication services and support to state agencies.

Cooperative and Mutual Aid Agreement: the instrument that establishes ALMR and sets out the terms and conditions by which the system will be governed, managed, operated, and modified by the parties signing the agreement.

Codeplug: a radio's personality data, that contains various programmable parameters, including frequencies, time-out-timers, and so on is stored. Codeplug files can be archived on the computer's hard drive for later use or cloned to other radios with identical model and manufacture feature sets..

Department of Defense (DoD) – Alaska: Alaskan Command, US Air Force and US Army, component services operating under United States Pacific Command and United States Northern Command.

Department of Public Safety (DPS): a State of Alaska (SOA) department where the SOA Telecommunications System (SATS) and ALMR programs reside.

DS0: digital signal 0 – the lowest digital signal or data service level having a transmission rate of 64,000 bits per second (64 kb/s), intended to carry one voice channel (a phone call).

Emergency Alarm: a Project 25 feature that, when enabled, allows a user to transmit an emergency alarm to their dispatch center.



Executive Council: governing body made up of three voting members and two associate members representing the original four constituency groups: the State of Alaska, the Department of Defense, Non-DoD Federal agencies (represented by the Alaska Federal Executive Association), and local municipal/government (represented by the Alaska Municipal League and the Municipality of Anchorage).

Local Governments: those Alaska political subdivisions defined as municipalities in AS 29.71.800(14).

Member: a public safety agency including, but not limited to, a general government agency (local, state, tribal, or federal), its authorized employees and personnel (paid or volunteer), and its service provider, participating in and using the system under a membership agreement.

Membership Agreement: the agreement entered into between the ALMR Operations Management Office, as the designated agent for the Executive Council, and the user agency, which sets forth the terms and conditions under which the system provides services to the user agency and the user agency's responsibilities while operating the system. Also referred to as a user agreement.

Municipality of Anchorage (MOA): the MOA covers 1,951 square miles with a population of over 300,000. The MOA stretches from Portage, at the southern border, to the Knik River at the northern border, and encompasses the communities of Girdwood, Indian, Anchorage, Eagle River, Chugiak/Birchwood, and the native village of Eklutna.

Operations Manager: represents the User Council interests and makes decisions on issues related to the day-to-day operation of the system and any urgent or emergency operational or repair decisions; establishes policies, procedures, contracts, organizations, and agreements that provide the service levels as defined in the ALMR Service Level Agreement in coordination with the User Council.

Operations Management Office (OMO): develops recommendations for policies, procedures, and guidelines; identifies technologies and standards; and coordinates intergovernmental resources to facilitate communications interoperability with emphasis on improving public safety and emergency response communications.

Radio: a Project 25 compliant control station, consolette, mobile, or portable radio, which has a unique identification number and is assigned to the ALMR system.

Risk Management Framework (RMF) for DoD Information Technology (IT): a structured approach used to oversee and manage risk for an enterprise. The program and supporting processes manage information security risks to organizational operations (including mission, functions, image, and reputation), organizational assets,



individuals, other organizations, and the Nation, and includes: (1) establishing the context for risk-related activities; (2) assessing risk; (3) responding to risk once determined; and (4) monitoring risk over time. The program requires the completion of the Assessment and Authorization (A&A), formerly Certification and Accreditation (C&A), process which results in an Authorization Decision (AD). The system must be reauthorized no later than every three (3) years

State of Alaska (SOA): the primary maintainer of the State's infrastructure system. The State of Alaska sponsors local/municipal agencies onto the system.

State of Alaska Telecommunications Systems (SATS): the State of Alaska statewide telecommunications system microwave network.

System: the ALMR Communications System, as established in the Cooperative and Mutual Aid Agreement, and any and all System Design/System Analysis (SD/SA) and System Design/System Implementation (SD/SI) documents.

System Management Office: the team of specialists responsible for management of maintenance and operations of the system.

Sustained Operations and Maintenance (O&M): declaration by the Executive Council that the system is ready and capable to support real-time, on-demand, and secure public safety communications, and has received Authorization to Operate (ATO) through assessment and authorization under RMF and other appropriate security programs.

Talkgroup: the electronic equivalent of a channel on a trunked system; a unique group of radio users that can communicate with each other.

Trunking: because of the limited nature of radio spectrum, trunking technology allows the most efficient use of radio channels. Trunking technology is similar to the technology that telephone companies use. In trunked radio communications, all available user channels are placed into one pool. When a person needs to transmit, a channel is automatically selected from the available pool and used for the transmission. When the person is finished with the transmission, the channel is placed back in the pool for another individual to use. The result is more efficient use of the radio spectrum with a minimal probability of not having access to a channel.

User: an agency, person, group, organization, or other entity which has an existing written membership agreement to operate on ALMR with one of the parties to the Cooperative and Mutual Aid Agreement. The terms user and member are synonymous and interchangeable. All terms and conditions of the Cooperative and Mutual Aid agreement defined, apply to local/municipal government agencies that are sponsored/represented by the State of Alaska.



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User Council: governing body responsible for recommending all operational and maintenance decisions affecting the system. Under the direction and supervision of the Executive Council, the User Council has the responsibility for management, oversight, and operation of the system. The User Council oversees the development of system operation plans, procedures, and policies.