Anchorage Amateur Radio Club Newsletter

Next General Meeting
August 4, 2017
Carr Gottstein Building - 7:00pm

NO GENERAL MEMBERSHIP MEETING IN JULY

Happy 4th of July!
We were glad to have Tally (Thanks Kent KL5T) as the Field Day mascot, meeter and greeter, groundskeeper, supervisor and all around morale booster as part of the team.
Older equipment and projects on display. Thanks to Kent (KL5T) and Dave (AL7LO) for donating the equipment for the display.
Wire Antenna setup

Tilt up tower install

A KL7TS teaching moment
2017 Walk and Roll for Hope Photos (Thanks to Karen Walker KL7KW)

KL7TS and KL7MM bike mobile

Walkers

KL7MM and KL7KW

Rest Station
KL7AA has deployed a robust MESH network serving the Anchorage bowl. Please see the following for more information regarding the ARDEN MESH network. Kent Petty (KL5T) is a great source of information on this and is willing to advise on the setup of a MESH node.

**Project Objectives**

The AREDN™ Project’s focus is Emergency Communications (EmComm). It seeks to provide hams a means to implement this technology in practical ways to support local and regional emergency communications needs. To that end, the project’s objectives are to enable hams to:

- Stand up a working mesh node with minimal expertise and effort
- Configure the mesh network automatically so that advanced network knowledge is not needed
- Use low-cost, reliable commercial equipment
- Define standards for internetwork integration
- Support those in the process of designing and implementing EmComm networks
- Refine the software to make implementation easier, more reliable, and more manageable
# Features and Benefits

Getting out of the WiFi band and onto ham-only channels on 2.4 and 3.4 GHz SIGNIFICANTLY improved the performance of our local network, and the tools and metrics in the latest release give us a much better understanding of our link performance.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive Part 97 Channels</td>
<td>AREDN™ offers two channels on 2.4 GHz, 24 channels on 3.4 GHz and 7 non-shared channels on 5.8 GHz that are not shared with Part 15 users.</td>
</tr>
<tr>
<td>Over-the-Air firmware upgrades</td>
<td>Changes to firmware can be done over an RF link without physical access to the node.</td>
</tr>
<tr>
<td>Maximum data rate of 130 Mbps</td>
<td>802.11n has been added to the RF protocol. This improves the maximum data rate capability from 54 Mbps to 130 Mbps and allows AREDN™ nodes to take advantage of the Ubiquiti MIMO (concurrent data channels in both the vertical and horizontal polarization domains), although proportional data rate increases can also be achieved on non-MIMO devices.</td>
</tr>
<tr>
<td>Low investment entry</td>
<td>Portable nodes with cable and network switch can be established inexpensively; backbone nodes with multiple transceivers and cable are affordable.</td>
</tr>
<tr>
<td>Rapid deployment and implementation</td>
<td>Portable nodes can be setup in a few minutes.</td>
</tr>
<tr>
<td>Multiple antenna choices</td>
<td>There are many choices for sector (60-, 90- and 120-degree) antennas and highly directional (Yagi and dish) antennas.</td>
</tr>
<tr>
<td>Interfaces easily with other Internet capable devices</td>
<td>An AREDN™ network enables emergency responders to use familiar devices such as smartphones, tablets and laptop computers.</td>
</tr>
</tbody>
</table>

AE6XE Orange County California 3 node installation
AREDN™ In Use

The Swallows Day Parade in San Juan Capistrano, California is, according to its organizers, the largest non-motorized parade in the United States. Hundreds of volunteers worked with local officials to maintain public safety among the estimated 35,000 people who attended the 57th annual event. A small team of FCC-licensed amateur radio operators who belong to the Radio Amateur Civil Emergency Service (RACES) provided specialized communication services.

The RACES team developed a plan to provide real-time video camera coverage of the parade route to support the Sheriff’s department and emergency response agencies. Orange County Sheriff’s Administrative Sgt. Joseph Cope noted that “This mesh camera system provided by RACES members was a very valuable tool for our command staff. As we were taking the calls, we could see the activity taking place in real time.” In a meeting with city staff, he also stated, “The parade was the safest in years. Incredibly, there was only one arrest for fighting, which just happened to take place in the cameras view.”

The parade cameras sent images across the radio network to the Orange County Sheriff’s Department state-of-the-art Mobile Command Center (MCC). This MCC is a semi-tractor trailer with generated power and patch panels for video, data, and radio needs, including more than a dozen high-definition monitors positioned both internally and externally.
Practical EmComm Uses

Many applications are available to support the critical communications requirements of CERT, law enforcement assistance, ARES, RACES and events such as fire and hurricane watches.

Telephones
- Voice over IP telephone systems
- SIP-based direct-dial calling to similarly configured smartphones within the network
- Gateway to PSTN when Internet is available to a node
- Asterisk and FreePBX

Cameras
- Streaming video with IP webcams
- Skype-like video conferencing
- VideoChat

Keyboard to Keyboard
- Email
- Chat applications – MeshChat

Mapping
- Open Street Map
- HTML mapping with Google APIs

Database and File Sharing
- CERT data gathering
- Cloud-based (OwnCloud) file sharing
- Google Person Finder

Network Monitoring
- Nagios
- Zabbix
- Iperf
- SNMP

How It Works

In the AREDN™ schematic model illustrated below we see the familiar external and user domains... although the user domain now contains computers which deliver services such as email, FTP, VoIP, chat, etc.

The new domain here is an RF mesh network which forms the business end of the AREDN™ technology.

How OLSR Works

Optimized Link State Routing
- Determines the best path to use

The route data will take through this network is dependent on the reliability of the links between them.

Need Help?
Contact AREDN™
www.aredn.org
Call to Order

The meeting was called to order at 7:00 PM by President Lara Baker AL2R. A quorum was established. Members and guests introduced themselves, 23 were in attendance.

Business

Lara Baker AL2R informed the membership that a volunteer was needed for the Tour de Cure on Sunday June 4th and that two volunteers were needed for the Alaska Run for Women on June 10th. Lara also noted that there would not be a membership meeting in July, but the Board meeting will occur.

Presentations

T.J. Sheffield KL7TS gave a great presentation on Cross Band Linking. T.J. gave a brief history involving Cross Linking usage on the Iditarod Trail and TLRRS (Tatalina Long Range Radar System). The presentation included applicable rules, proper operation, PL/CTCSS, DCS (Digital Code Squelch), positive control as well as some great slides and graphics to augment the presentation.

Craig Bledsoe introduced a new ham (Bill Penny, KL4LU) and spoke briefly about the importance of welcoming and Elmering new hams.

Door Prizes

3 door prizes were awarded.

The meeting adjourned at 7:45pm

Respectfully submitted as recorded on June 2, 2017 by:

Richard Tweet KL2AZ, Secretary
The meeting was called to order at 7:03 PM by President Lara Baker AL2R

A quorum was established: (2 Officers, 7 Board members needed)

BOARD MEMBERS PRESENT:

BOARD MEMBERS PRESENT VIA TELECONFERENCE:
Jim Wiley KL7CC, Rich Gillin AL4S

NON-VOTING MEMBERS/GUESTS PRESENT
Allen Abbott KB1QCE

EXCUSED BOARD MEMBERS
Alice Baker KL2GD, Kent Petty KL5T

UNEXCUSED BOARD MEMBERS
None

REQUEST FOR AGENDA ITEMS
None

GUESTS
Dave Webb N9AIG

TIME CRITICAL ITEM(S)
None

REPORTS

SECRETARY REPORT
Previous Board meeting minutes for May 2017 and General Membership meeting minutes for June 2017 were presented. Motion made by Dave Heimke AL7LO, seconded by Keith Clark KL7MM to accept the minutes with minor corrections. The motion carried unanimously.

TREASURER’S REPORT
Lara Baker AL2R reported that AARC had received a refund of gaming taxes of approximately $200.

FINANCE COMMITTEE
Keith Clark KL7MM gave the report of the Finance committee from their June 19th meeting. Keith reported on finance reports and spending outlooks, restitution payments to AARC remain at $0, Foreaker Group. Discussion was held on current data rate plans available to AARC and the availability to the MESH network.
FINANCE COMMITTEE
Keith Clark KL7MM reported on the May 8, 2017 Finance Committee meeting. Members using Amazon Smile have resulted in a $5 payment, restitution case is being researched, and inspection/appraisal is complete on FCC Building.

PROJECTS COMMITTEE
Kent Petty KL5T reported on project status at the Anchorage Senior Center and noted Sid, KL7SID (Senior Center EC) is his contact there. Rotor control cables are installed, rotor install is next followed by antenna installation.

GRANT COMMITTEE
Lara Baker AL2R reported there have been no grant requests received and no grant applications have been made on behalf of AARC. Lara reported on the Grant Committee’s meeting with Laurie Wolf of the Foraker Group and the suggestions/guidance she provided to the committee for obtaining grants.

GAMING REPORT
Lara Baker AL2R reported gaming reports are still being timely filed with $0 gaming receipts and the AARC remains in good standing with the state gaming commission.

BUILDING COMMITTEE
Dave Heimke AL7LO reported on the May 1st meeting with the airport leasing department. The committee was to reengage with the commercial appraiser to discuss the comparables and extraordinary assumptions the appraiser used to determine the $.70/sf lease rate for the FCC property. The committee is actively building the case to be presented to the appraiser at a future meeting in order to achieve an agreeable lease rate. Dave presented the board with all lease options presented by airport leasing, application status, rent credits and use of volunteer labor, additional inspections for follow up discussions with the appraiser, certificate of occupancy, and the need for development of an AARC mission statement.

VE REPORT
Lara Baker AL2R reported on the last testing session resulting in a new Technician and a new General licensee. Discussion was held on submissions and the FCC response files, remote vs. online testing, costs associated with printed exams, possible fees for testing.

TRUSTEE REPORT
Keith Clark KL7MM reported that the KL7AA renewal was within the 90 day renewal window and was filed. Keith will be writing a letter of reference for a member applying for a college memorial scholarship. KL7AA will be used for Field Day and Keith will contact Randy Vallee for use of KL7G for the event. The Gold Nugget Triathlon volunteers will be using the .94/.67 repeaters. Lara reported that he has access to a helicopter that can be used to service the .30/.33 repeaters. Discussion noted the .30/.33 repeaters are not AARC’s responsibility but are ARES to maintain. Jim Wiley KL7CC noted he is the Trustee for the ARES repeaters.

MEMBERSHIP REPORT
None as Rich Gillin AL4S was excused

BY-LAWS
None

GRANT COMMITTEE
No report

GAMING REPORT
Lara Baker AL2R reported that AARC is only required to file annual reports at this time per the accountant.
PROJECTS COMMITTEE
Dave Heimke reported on the FCC Occupy project. Currently awaiting cost proposals from the general contractor on building capital improvement costs. Once received and compiled, a meeting will be scheduled with Airport Leasing to discuss lease rates.

EQUIPMENT REPORT
None

VE REPORT
Jim Wiley KL7CC reported that issues with the KL7AA website are still being worked and that there was nothing new to report. A brief discussion was held on online testing availability and associated requirements.

TRUSTEE REPORT
Keith Clark KL7MM reported that 2017 Field Day will be using the club callsign at the 6721 Raspberry site.

MEMBERSHIP REPORT
Rich Gillin AL4S reported on membership income for the month

BY-LAWS
No report

ARES
No report

OLD BUSINESS
Web Migration – Discussed during VE report

Vacant Board Positions (Board member, Treasurer) and Newsletter editor – Discussion noted Board member position comes up for vote in September, current Board members are looking for a person to fill the Treasurer position. Club secretary continues as Newsletter Editor until a volunteer can be found.

AARC Naming Convention – Discussion held that as a 501c3, the AARC should be known as something other than a club. A suggestion was made to be the Anchorage Amateur Radio Community and the issue will be further discussed by the Board.

Access Policy – No discussion, will be discussed at July Board meeting

Education Manager – Brief discussion held as to what would the new position’s duties and responsibilities be if the position is created. Further discussion will be held in July.

AARC Vision Statement – Continues to be a work in progress. The Board will vote on the policy in July

NEW BUSINESS
None

PROGRAM FOR AUGUST MEETING (NO MEMBERSHIP MEETING IN JULY)
Allen Abbott KB1QCE reported that the topic would be Public Service – Meet Our Partners. Organizations the AARC has supported in their events will be invited to speak regarding their Organization, how AARC has helped the event etc. Allen noted that the Anchorage Tour de Cure event raised $200,000 for the American Diabetes Association.

ADJOURNMENT
The meeting adjourned at 8:02 pm. Respectfully submitted as recorded on June 20, 2017 by Richard Tweet, Secretary
1st Friday each month: AARC general meeting - 7:00 PM in the Carr-Gottstein Building, on the APU Campus. Talk in will be on 147.33+ repeater. **NO MEETING IN JULY**

1st Thursday each month: Moosehorn Amateur Radio Club General meeting - 7:00 PM Location is at Borough Emergency Response Center on Wilson Way in Soldotna (behind Soldotna FD. Call for directions on 146.88 repeater (no tone). Moosehorn ARC also holds a weekly luncheon every Thursday, locations and times change — contact George Van Lone, KL7AN: donnav@acsalaska.net

2nd Saturday each month: PARKA (Polar Amateur Radio Klub of Alaska) Meeting at 11:00 AM. Polar Amateur Radio Klub of Alaska. All amateurs welcome. Denny’s on Denali Street in Anchorage. Some business is discussed. Originally established as an all woman organization, membership now includes spouses or significant others. Talk in on 147.30+.

2nd Saturday each month (except for holidays): VE License Exams at 2:00 PM. at Hope Cottage 540 W. International. Be sure to bring photo ID, copy of license (if any) and any certificates of completion. Contact: Jim Wiley, KL7CC 688-0660.

3rd Tuesday each month: AARC Board Meeting at 7:00 PM at Hope Cottage 540 W. International. All hams are invited and encouraged to attend.

2nd Wednesday of each month: EARS general meeting at 6:00 PM. EARS meetings are held at the EARS shack location. Contact info - Ron Keech, KL7YK for information. EARS: 552-2664 (recording); Talk in on 146.67-. Email: club@KL7air.us or kl7yk@arrl.net

4th Saturday of each month: Valley VE Testing at 7:00 PM. Sessions will be held at Fire Station 61, at 7 pm on the fourth Saturday of each month unless it is a major holiday weekend. Contact Ken Slauson, KL7VE, Ken.Slauson@gmail.com or 907-376-8698.

**The last Friday each month: MARA meeting at 7:00 PM, Wasilla Fire Station 61.** Talk-in help for the meeting can be acquired on the 147.33 repeater. Further details can be found by contacting Don Bush, KL7JFT, dbush@gci.net. **NO MEETING IN JULY**

**Every Monday at 11:00 AM: Meeting of interested Amateur Radio Operators** — and lunch at Denny’s on DeBarr — across from Costco. Many code and HF operators attend this function. Come talk radio. For information, contact Kathy O’Keefe, KL7KO, kokalaska@gmail.com

**Every Saturday at 7:00 AM:** Meeting of a group of Amateur Radio Operators at Denny’s on Denali for breakfast. Topics? Radio, photography, and upcoming events For information, contact Kathy O’Keefe, KL7KO, kokalaska@gmail.com.
**Active Nets in Alaska**

**VHF NETS**
The local VHF Nets have a Packet side as well. Look for 2 meter Packet at 145.01 (Eagle) and 147.96 (Valley). The Eagle and Valley nodes provide a talk” or chat function. Also, if you are unable to connect directly to one of the nodes, try digipeating through EARS on either frequency. Do this by typing `c eagle v ears` or `c valley v ears` on the appropriate frequency. Check www.KL7AIR.us for more information on the digipeaters.

**ARES Net**: 147.33 w/ 103.5Hz tone (Backup 147.30 w/ 141.3Hz tone) — Thursdays at 8:00PM

**No Name Net**: 146.43 simplex—Sundays 8:00PM

**South Central Simplex Net**: 146.52 FM, 144.2 USB, 446.0 FM, 432.2 USB, 223.5 FM, 927.5FM, 1294.5 FM, 52.525 FM, 50.125 USB, 29.6 FDM, 28.4 USB, 145.01 Packet (Eagle Node), 147.96 Packet (Valley Node) - Tuesdays 8:00PM

**Alaska VHF Up Net**: 144.200 USB—Saturdays 9:00 AM

**Alaska Morning Net**: The Alaska Morning Net is held Monday through Saturday from 9:00 AM—11:00 AM on the IRLP Reflector 9109. This net can be reached via several hosting nodes in the area. Please visit www.status.irlp.net/index.php?PSTART=2&mode=3 to find the closest node. Also the net can be reached via EchoLink on 9191 (WL7LP-R) and Allstar nodes 27133 and 29332. The Alaska Statewide ARES net is held on Thursday evenings at 8:30pm (following the Anchorage ARES net) at the same locations and also the 8:30pm Sunday evening Alaska Statewide Radio Link.

**HF Nets**

**Alaska Snipers Net**: 3.920 MHz 6:00pm daily

**Alaska Bush Net**: 7.093 MHz 8:00pm daily

**Alaska Motley Net**: 3.933 MHz 9:00pm daily

**ACWN (Alaska CW Net)**: 3540 kHz, 7042 kHz, 14050 kHz Non-directed, CW calling and traffic watch for relaying NTS of other written traffic. AL7N monitors continuously receivers always on WL2K. (RMS connection available — AL7N@winlink.org)

**Alaska Pacific Net**: 14.292 MHz 8:30am M-F

**ERC HF Net**: 3.880 MHz 8:30pm Sundays
### DATA YOU CAN USE

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Tone</th>
<th>Callsign</th>
<th>Features</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>147.18-</td>
<td>88.5</td>
<td>ADES</td>
<td></td>
<td>JBER</td>
</tr>
<tr>
<td>146.88-</td>
<td>no tone</td>
<td>AL7LE</td>
<td>Phone patch</td>
<td>Kenai/Soldotna</td>
</tr>
<tr>
<td>146.82-</td>
<td>103.5</td>
<td>WL7CWE</td>
<td>IRLP</td>
<td>Anchorage</td>
</tr>
<tr>
<td>146.76-</td>
<td>123.0</td>
<td>KL3K</td>
<td>IRLP</td>
<td>Seward</td>
</tr>
<tr>
<td>146.94-</td>
<td>103.5</td>
<td>KL7AA</td>
<td>Phone patch</td>
<td>Anchorage to Wasilla</td>
</tr>
<tr>
<td>224.94-</td>
<td>no tone</td>
<td>KL7AA</td>
<td></td>
<td>Anchorage</td>
</tr>
<tr>
<td>444.70+</td>
<td>103.5</td>
<td>KL7AA</td>
<td>Phone patch</td>
<td>Anchorage</td>
</tr>
<tr>
<td>146.67-</td>
<td>103.5</td>
<td>KL7AIR</td>
<td>MARS station</td>
<td>Anchorage &amp; Highway N</td>
</tr>
<tr>
<td>147.30+</td>
<td>141.3</td>
<td>KL7ION</td>
<td></td>
<td>Very Wide Area</td>
</tr>
<tr>
<td>146.85-</td>
<td>103.5</td>
<td>KL7JFU</td>
<td>Cross Banded to 444.600</td>
<td>Mat Valley</td>
</tr>
<tr>
<td>444.6+</td>
<td>103.5</td>
<td>KL7JFU</td>
<td>Cross Banded to 146.85</td>
<td>Mat Valley</td>
</tr>
<tr>
<td>146.91-</td>
<td>no tone</td>
<td>KL7JL</td>
<td></td>
<td>Homer</td>
</tr>
<tr>
<td>147.15+</td>
<td>107.2</td>
<td>KL5E</td>
<td>Phone patch</td>
<td>Eagle River/Chugiak</td>
</tr>
<tr>
<td>147.84-</td>
<td>103.5</td>
<td>WL7CWE</td>
<td></td>
<td>Wasilla repeater</td>
</tr>
<tr>
<td>147.33+</td>
<td>103.5</td>
<td>WL7CWF</td>
<td>Cross linked to 443.900</td>
<td>Very Wide Area</td>
</tr>
<tr>
<td>443.900+</td>
<td>103.5</td>
<td>WL7CWF</td>
<td>Cross linked to 147.33</td>
<td>Very Wide Area</td>
</tr>
</tbody>
</table>

### South Central Area Simplex Frequencies

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>146.52</td>
<td>National Calling and Emergency Frequency</td>
</tr>
<tr>
<td>147.57</td>
<td>DX Spotting Frequency</td>
</tr>
<tr>
<td>146.49</td>
<td>Anchorage Area Simplex Chat</td>
</tr>
<tr>
<td>146.43</td>
<td>Mat-Su Valley Simplex Chat</td>
</tr>
<tr>
<td>147.42</td>
<td>Kenai Peninsula Simplex Chat</td>
</tr>
</tbody>
</table>

### WinLink Information

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Callsign</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>144.9</td>
<td>WL7CVG-10</td>
<td>Anchorage Area RMS</td>
</tr>
<tr>
<td>145.19</td>
<td>KL7JFT-10</td>
<td>Palmer/Mat-Su RMS</td>
</tr>
<tr>
<td>147.96</td>
<td>KL7EDK-10</td>
<td>Fairbanks RMS</td>
</tr>
<tr>
<td>144.9</td>
<td>WL7CVG-4</td>
<td>South Central Digipeater</td>
</tr>
<tr>
<td>144.98</td>
<td>KL7AA-10</td>
<td>Anchorage AARC RMS</td>
</tr>
<tr>
<td>Sun</td>
<td>Mon</td>
<td>Tue</td>
</tr>
<tr>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>30</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

- **4TH OF JULY**
- **HAPPY 4th of JULY!!**
If you have anything you’d like included in the next newsletter such as for sale items, articles, questions, etc. email editor(at)kl7aa.net

Your current AARC Board/Officers

President: Lara Baker AL2R, president(at)kl7aa.net
Vice-President: Kent Petty KL5T, vicepresident(at)kl7aa.net
Treasurer: Alice Baker KL2GD, treasurer(at)kl7aa.net
Secretary: Richard Tweet KL2AZ, secretary(at)kl7aa.net
Board 2019: Dan Knapp KL4CX
Board 2019: Lillian Marvin KL7YF
Board 2019: Rich Gillin AL4S
Board 2018: T.J. Sheffield KL7TS
Board 2018: Keith Clark KL7MM
Board 2018: VACANT
Board 2017: George Wilkinson KL1JJ
Board 2017: Jim Wiley KL7CC
Board 2017: Dave Heimke AL7LO
Activities: Allen Abbott KB1QCE, activities(at)kl7aa.net
Trustee: Keith Clark KL7MM, trustee(at)kl7aa.net
Newsletter Editor: Richard Tweet KL2AZ, editor(at)kl7aa.net
Membership: Rich Gillin AL4S, membership(at)kl7aa.net
VE Testing: Jim Wiley KL7CC, ve(at)kl7aa.net
Webmaster: Brendon Bruns KL1WK, webmaster(at)kl7aa.net
Internet/Network: Rich Gillin AL4S, ip(at)kl7aa.net