

# Winlink Express



# Message Handling

## Message Precision vs. Accuracy

**Accuracy is important in all our message handling.**

—“The hiker has been found in the meadow and in good health”

Some mistakes in this message at the character level (spelling) will still allow the information to be accurately received and understood.

—A list of names, request for medical supplies, medications, etc require ***precision*** at the character level when being sent or received.

It is important to understand the level of precision needed. WinLink is a good choice for high precision messages but may be too cumbersome for simple communication where voice is quicker and easier.

# Winlink – A Digital Mode

Over heard from a former FEMA Administrator Craig Fugate, KK4INZ

- ARES #1 mission needs to be making sure the local EOC can talk to the state EOC.
- ARES #2 mission is making sure that the local EOC can talk to its subordinate fire and EMS stations and, by extension, its local medical facilities (hospitals, critical care centers, etc.)
- Focus on developing digital mode expertise. Digital can carry traffic, more accurately and under more adverse conditions, than voice.
- Repeaters will fail and 2-meter simplex will run into coverage issues very fast. Focus on HF.
- Most emergency managers at all levels have no idea what digital capabilities ARES can bring to the EOC. Some have heard of Winlink, few know what it really is or what its capabilities are. Almost none have heard of FT8, JS8, VarAC , PSK31, Olivia or any other digital mode.

# WHAT WINLINK OFFERS FOR EMCOMM

## Flexibility:

- Internet-only (Telnet) direct connections to Winlink.
- Radio link bridge to Internet e-mail.
- Radio-only store and forward messaging.
- Peer-to-peer connections between radio end-users.
- Familiar and simple e-mail client interface.

## Interoperability: Connect different types of systems

- Bridge different radio capabilities (VHF/UHF/HF).
- Seamless integration with Internet e-mail.
- The ability to send / receive SMS messages

Geographical dispersion and redundancy for reliability

# WHAT WINLINK OFFERS FOR EMCOMM (MORE)

- Standard e-mail format with many features.
  - Binary file attachments (pictures, pdf, spreadsheets).
  - Automatic message compression/decompression.
  - White listing used to prevent spam.
- Time independence.
- Ability to collect messages while unattended.
- Good operation at most power levels.
- Not limited by station-to-station propagation.
- Message logging, and ICS report generation.
- Forms and template support.
- Wide adoption by EmComm related agencies.

# Winlink VARA HF RMS Gateways

File Edit View History Bookmarks Tools Help

Inbox - kc5qoc@gmail.com - X Winlink Programs Group - Gc X NE8U - Callsign Lookup by Q X ARRL :: Exhibit Supplies X ARRL :: Field Day X Live System Information | Win X

https://winlink.org/RMSChannels

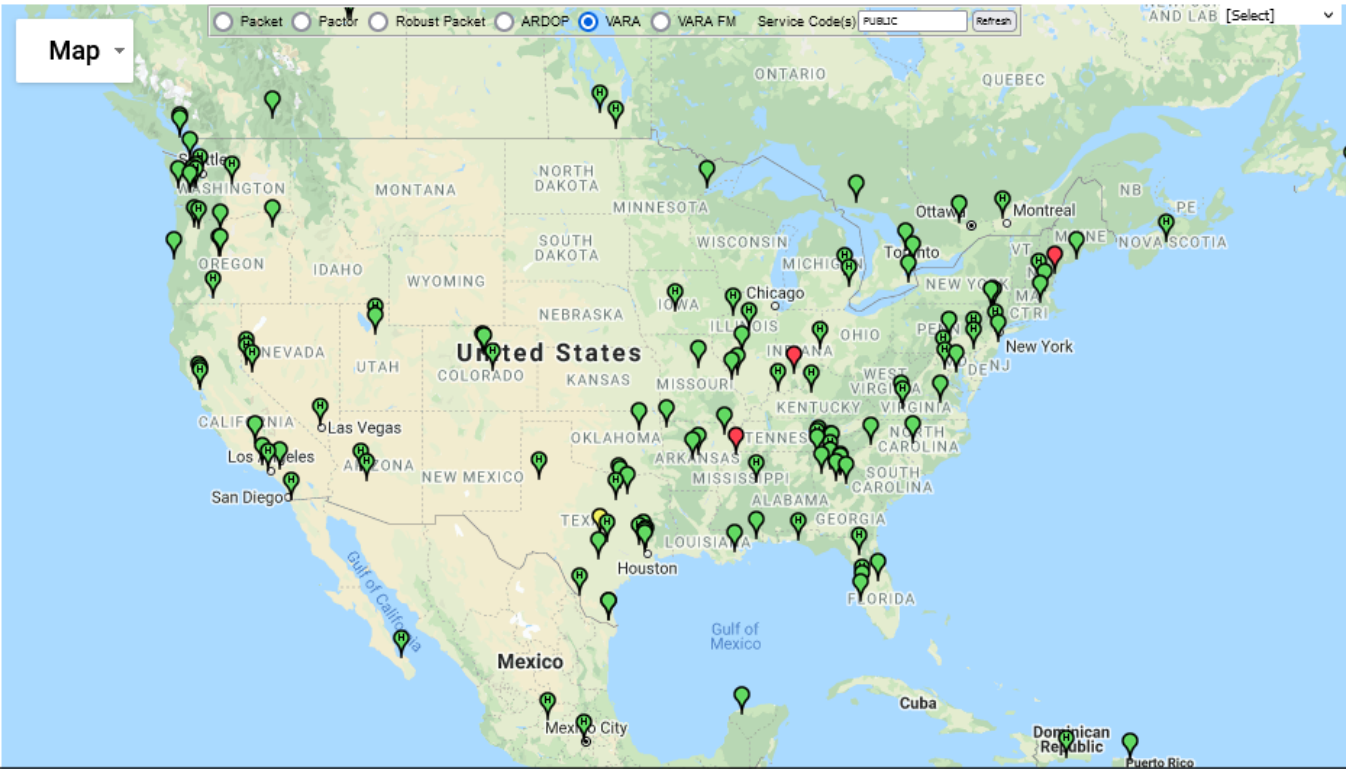
Most Visited Getting Started SPOT Mail GoodSam Banking Facebook Quilting Alaska Ham Radio Packet RPi basque 3D-Printer Other Bookmarks

## Live System Information

RMS Map RMS List Cnx Map Prop Map CMS Status Traffic RMS Ver. User Ver. Local

Map

Packet Packet Robust Packet ARDOP **VARA** VARA FM Service Code(s) PUBLIC Refresh AND LAB [Select]



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# Winlink RMS Packet Gateways

File Edit View History Bookmarks Tools Help

Inbox - kc5qoc@gmail.com X Winlink Programs Group - Gc X NE8U - Callsign Lookup by Q X ARRL :: Exhibit Supplies X ARRL :: Field Day X Live System Information | Win X +

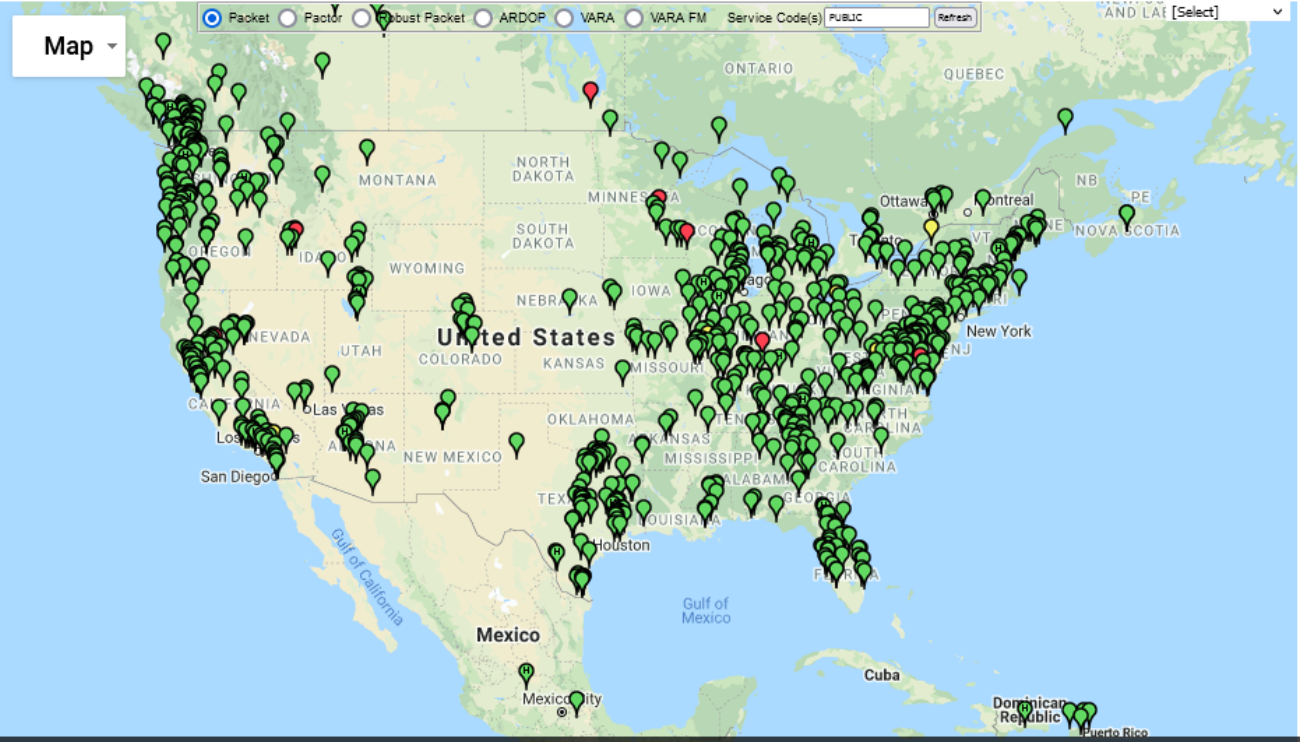
← → ↻ 🏠 <https://winlink.org/RMSChannels> ☆ 🔒 ⚙️ ⬇️ 🔍 ☰


⚙️ Most Visited 🌈 Getting Started 📁 SPOT 📁 Mail 📁 GoodSam 📁 Banking 📁 Facebook 📁 Quilting 📁 Alaska 📁 Ham Radio 📁 Packet 📁 RPi 📁 basque 📁 3D-Printer 📁 Other Bookmarks

## Live System Information

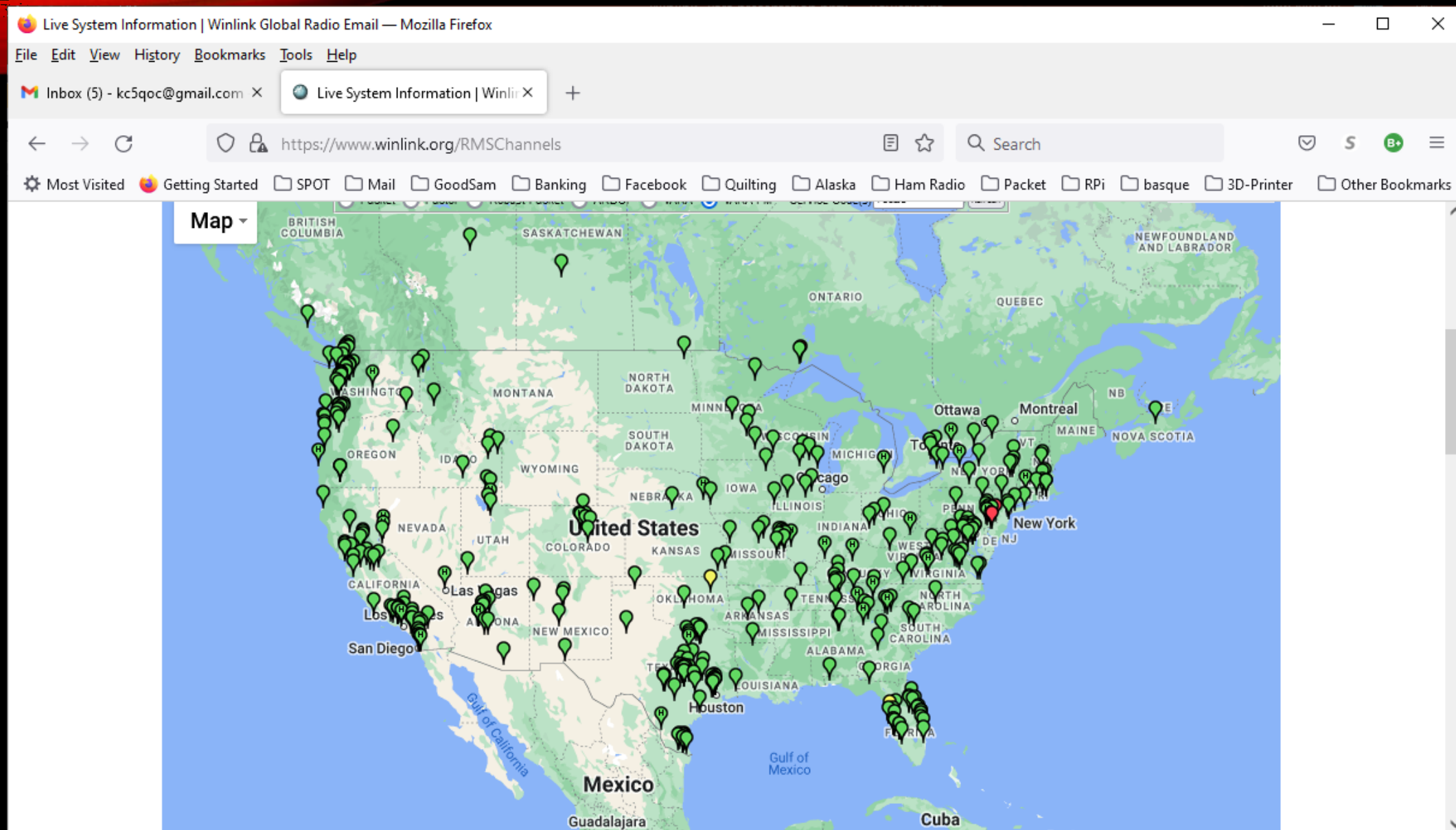
**RMS Map** RMS List Cnx Map Prop Map CMS Status Traffic RMS Ver. User Ver. Local

Map ☒ Packet ☐ Packet ☐ Packet ☐ ARDOP ☐ VARA ☐ VARA FM Service Code(s) PUBLIC Refresh AND LAT [Select]



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# Winlink VARA FM RMS Gateways



# Winlink New Mexico Area RMS Stations

Packet Channel Selector						
Exit   Select Channel   Update Table Via Internet   Update Table Via Radio						
Stations found within 185 miles of your grid square.						
Callsign	Frequency (MHz)	Baud	Grid Square	Group	Distance (mi)	Bearing (Degrees)
KC5QOC-12	145.070	1200	DM65QD	PUBLIC	000	000
KC5QOC-10	145.010	1200	DM65QD	PUBLIC	000	000
NM5PB-10	145.010	1200	DM65QC	PUBLIC	004	180
NM5PB-13	145.070	4800	DM65QC	PUBLIC	004	180
WD5JRO-10	145.010	1200	DM65VT	PUBLIC	052	027
K6KUF-10	145.070	1200	DM64NB	PUBLIC	076	191

Vara FM Channel Selector						
Exit   Select Channel   Update Table Via Internet   Update Table Via Radio						
Stations found within 185 miles of your grid square.						
Callsign	Frequency (MHz)	Channel Width	Grid Square	Group	Distance (mi)	Bearing (Degrees)
NM5PB-13	145.070	Narrow	DM65QC	PUBLIC	004	180
NM5LS-10	145.090	Narrow	DM65RH	PUBLIC	012	025
K6KUF-10	145.070	Wide	DM64NB	PUBLIC	076	191
KD5SAR-10	147.980	Narrow	DM55PM	PUBLIC	120	283

# SOUND CARD OPERATION

## WINLINK EXPRESS MODES

Mode	Speed	Application
<del>Winmor (HF)</del>	<del>Up to 1300bps</del>	Obsolete
ARDOP (HF)	Up to 4,000bps	Included
Vara (HF)	Up to 7,000bps	External
Packet (V/UHF)	1200/9600bps <sup>1</sup>	External
Vara FM (V/UHF)	Up to 25,210bps	External

- ARDOP was developed by the WDT and is included with Winlink Express
- Vara and Packet modes are provided by separate applications:
  - Vara (HF) and Vara FM (V/UHF)
  - UZ7HO Soundmodem (V/UHF Packet)
  - Direwolf (V/UHF Packet)

<sup>1</sup>. Both Soundmodem and Direwolf provide additional PSK modes between 1200 and 9600

# VARA FM New Features

- Auto Tune Capability – automatically adjust your signal for the best throughput
- Ping Function to test the route
- Rate adaptive to signal conditions – will get data through when voice will not
- Digipeater capability can be optionally enabled on any RMS Express or VARA FM gateway making relay of messages over long distances possible.
- The software modem is a freestanding program and can be used without Winlink software, if only digipeating is required.
- Operation of VARA FM sessions thru voice repeaters is improved.

# The New Kid on the Block

## Vara FM

Vara FM uses a very efficient FEC/ARQ protocol, resulting in a significant speed improvement over traditional Packet Radio (over 2X 9600 packet). It will shift to the different speed levels automatically based on the receive signal quality.

Vara FM Narrow can also be used over regular voice repeaters or cross-band repeaters (at somewhat slower rates) Unlike Packet, Vara FM does not support store-and-forward systems like packet digipeaters and nodes. It will be used for point-to-point links to gateways or peer-to-peer partners or VARA FM Digipeaters

VARA FM v3.0.5

Level	VARA FM WIDE				VARA FM NARROW			
	Symbol Rate	Carriers	Mod.	Net Rate (bps)	Symbol Rate	Carriers	Mod.	Net Rate (bps)
1	42	55	4PSK	1098	42	55	4PSK	1098
2	42	55	4PSK	2253	42	55	4PSK	2253
3	42	98	4PSK	4040	42	55	4PSK	3022
4	42	98	4PSK	5387	42	55	16QAM	4032
5	42	98	16QAM	7185	42	55	16QAM	5375
6	42	98	16QAM	9580	42	55	32QAM	6720
7	42	116	16QAM	11340	42	55	64QAM	8065
8	42	116	32QAM	14144	42	55	64QAM	9072
9	42	116	64QAM	16932	42	55	128QAM	10585
10	42	116	64QAM	19003	42	55	256QAM	12091
11	42	116	128QAM	22102				
12	42	116	256QAM	25210				

# Winlink Forms

Winlink has a great many forms available from a variety of sources

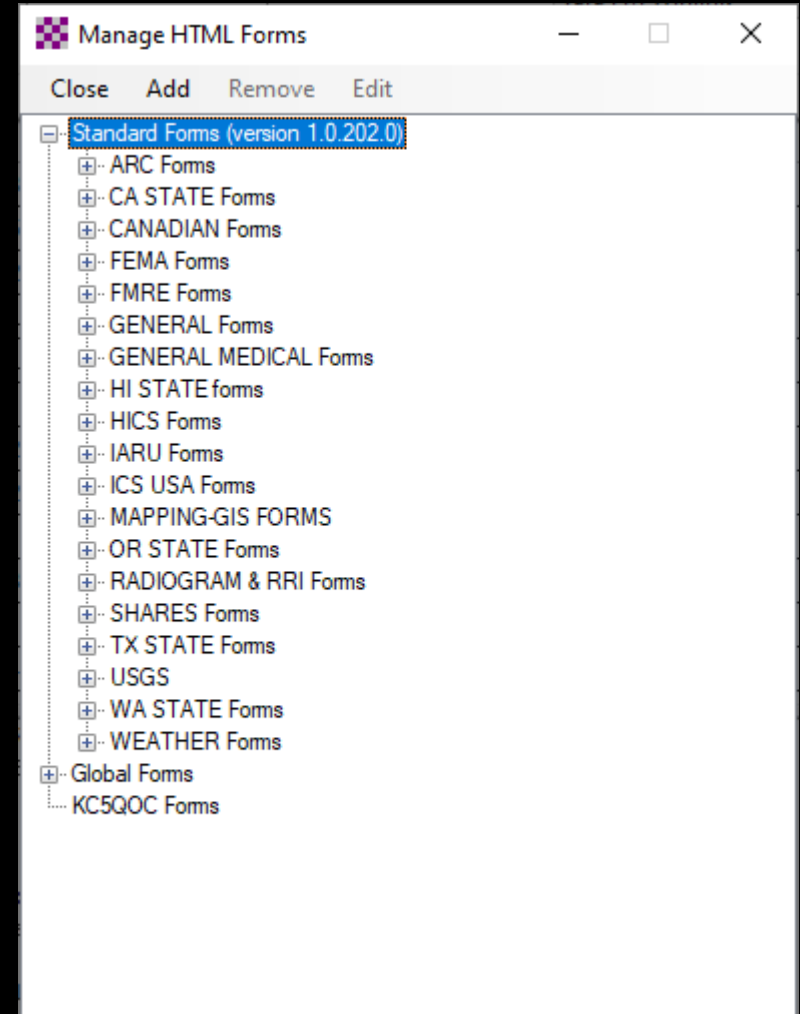
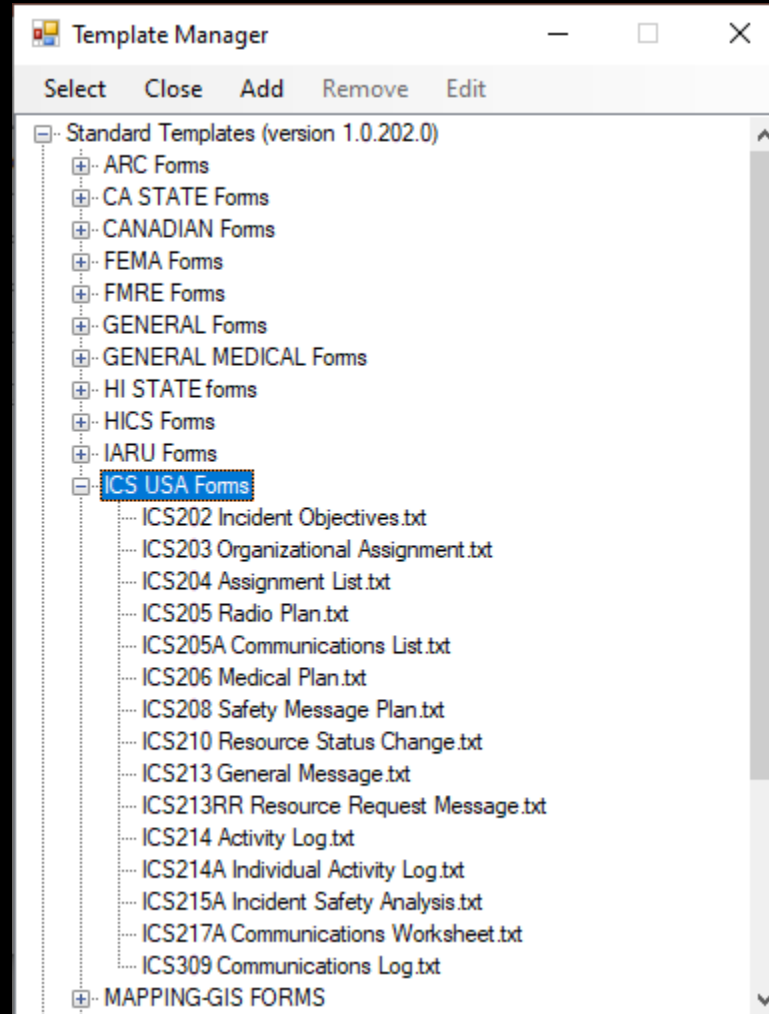
ICS

American Red Cross

FEMA

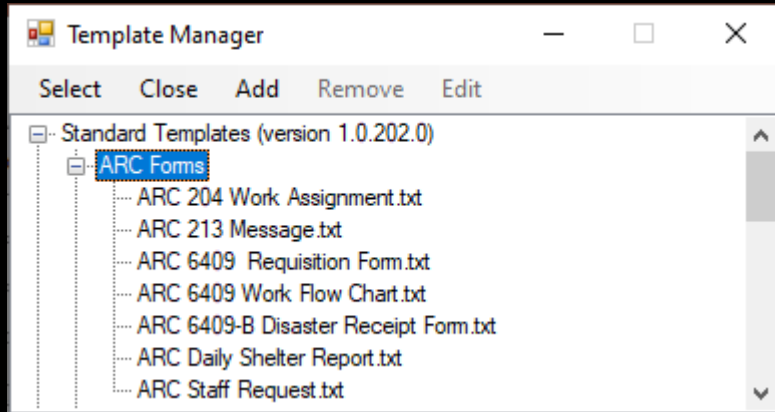
USGS

And Many more



# Winlink Forms

## American Red Cross Standard Forms



The screenshot shows the "ARC 213 Initial" form in Mozilla Firefox. The browser's address bar displays the file path: `file:///C:/RMS Express/KC5QOC/Temp/ARC 213 Message Initia`. The form is titled "ARC 213 General Message" and features the American Red Cross logo. A button labeled "Load ARC 213 INITIAL Data" and a link for "Form Instructions" are visible. The form includes fields for "Red Cross DR#" (with a dropdown set to "IF KNOWN"), "Incident Name:", and "Message#" (with a dropdown set to "SUGGESTED"). There is a "Precedence:" dropdown menu currently set to "Routine". Fields for "To (Name/Position):", "From (Name/Position):", "Subject:", "Date:" (set to "2022-07-15"), and "Time:" (set to "13:45") are present. A large text area for the "Message:" is at the bottom, with a placeholder text "Be Brief and Concise".

# Winlink Forms

We can even have one for the Bernalillo County

Quick Web EOC Resource Request — Mozilla Firefox

File Edit View History Bookmarks Tools Help

Online Course FAQs Online Course Catalog FEMA - Emergency Management Quick Web EOC Resource Request

file:///C:/RMS Express/KC5QOC/Temp/Quick WEB EOC R Search

Most Visited Getting Started SPOT Mail GoodSam Banking Facebook Quilting Alaska Other Bookmarks

### Resource Request Data Input Form New Mexico Bernalillo County EOC

[Load Quick WEB EOC RR data](#)

Request - Limit 50 Char.  
{Mission Name}

1.

Date

2.

Time Reported

3.

Originating Agency  
Id Number

4.

Requesting Official Name  
and Contact Info

5.

Request - Detailed Description  
REF Box 1  
(20 Words MAX)

6.

### Resource Details

#### Request Priority (Precedence)

7. ☐ Life Safety/Immediate (A)  
(4 hrs)

☐ Priority (B)  
(12 hr)

☐ Routine (C)  
(24 hrs)

☐ Long-Term (D)  
(96 hrs)

☐ Extended (E)  
(over 96 hrs)

# Winlink Forms

Create Your Own

I use this one to send text messages for the President of the Church when cell service here is non-existent.

The screenshot shows a web browser window titled "Send SMS/Text Message — Mozilla Firefox". The address bar displays a local file path: `file:///C:/RMS Express/KC5QOC/Temp/Send SMS message.htm`. The browser's bookmark bar includes links like "Most Visited", "Getting Started", "SPOT", "Mail", "GoodSam", "Banking", "Facebook", "Quilting", "Alaska", "Ham Radio", and "Other Bookmarks".

The web form itself is titled "Send SMS/Text message" and features a "Load SMS Data" button. It contains the following fields and controls:

- Cell phone number:** A text input field.
- Carrier:** A dropdown menu currently showing "Select Carrier", with an "Add #" button below it.
- Send to addresses:** A text area for multiple recipients, with a "Clear addresses" button below it.
- Subject:** A text input field.
- SMS/text Message (140 characters):** A large text area for the message content.

At the bottom of the form, there are three buttons: "Save SMS Form Data" (blue), "Submit" (green), and "Reset Form" (red). The version number "Ver 1.2.1.1" is displayed in the bottom right corner.

# Winlink and EMComm

That's All Folks

Questions ?