



South County ARES

Introduction to Winlink Express

Agenda

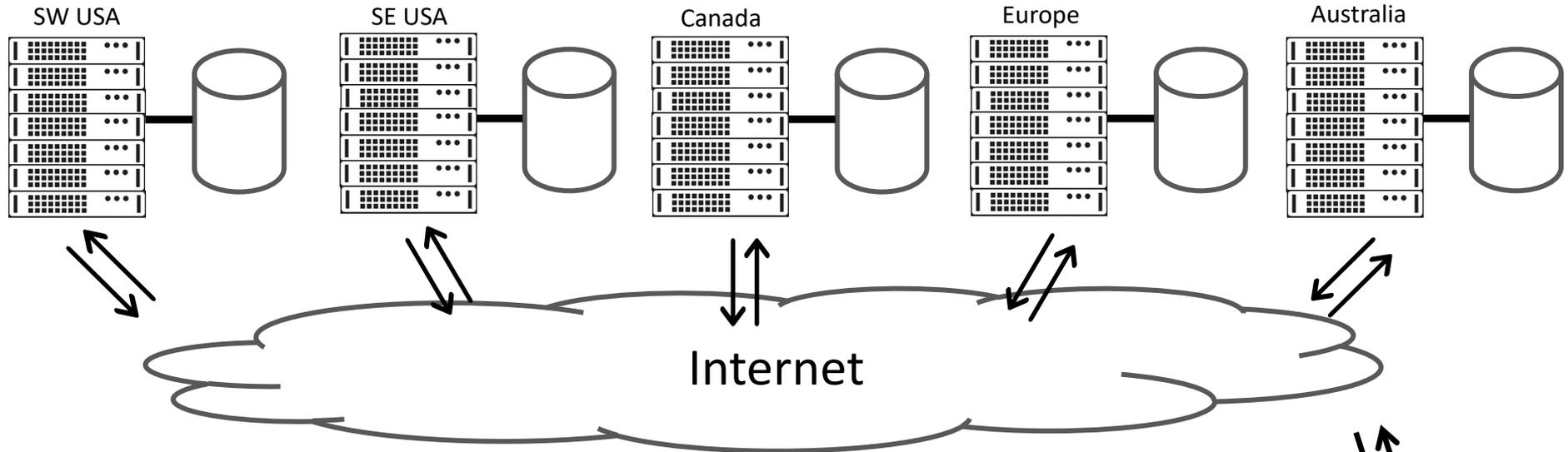
- Overview
- What is Winlink
- How Does Winlink Work?
- Downloading Winlink Express
- Installing Winlink Express
- Using Winlink Express
 - Telnet
 - Packet
 - HF
- Sending from Winlink to the Internet
- Sending from Winlink to a Text Message
- Using Winlink Express Forms
- Pat Winlink

Overview

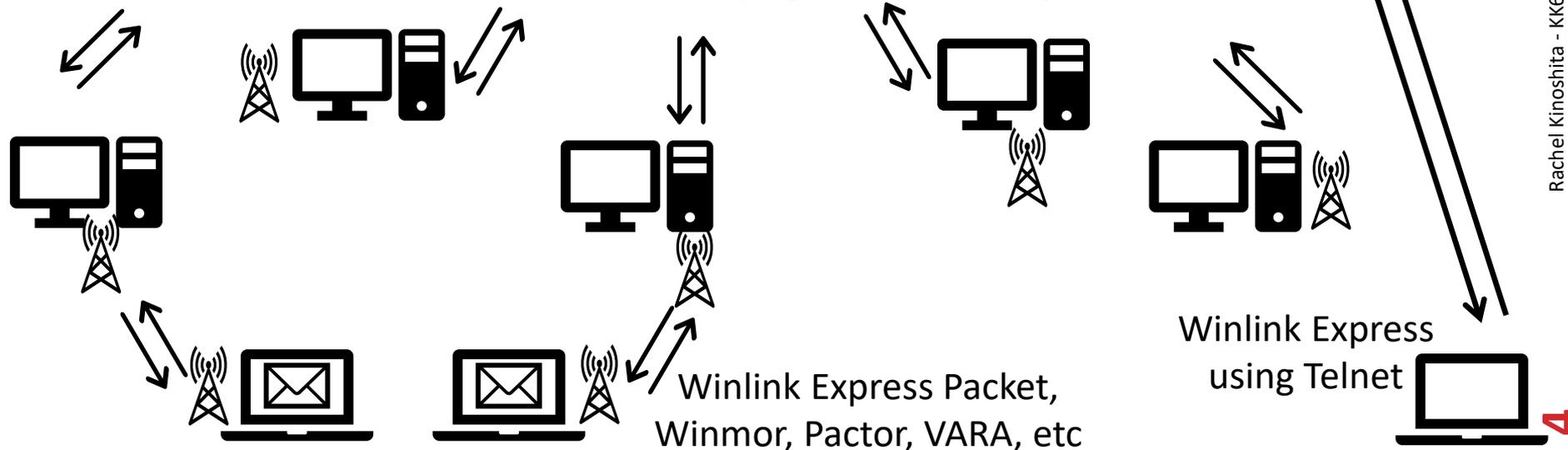
- Winlink for Emergency Communications
 - Winlink is electronic mail, although it differs from how we traditionally think of email
 - Unlike email and texting, the Winlink infrastructure is based off of ham radio communications and not the Internet
 - Excellent method for sending messages that require error free transmissions (i.e. medication names, part/product numbers, etc)
 - Uses store and forward, so messages can be delivered when the recipient is available
 - Can be delivered to Internet email and SMS/MMS
- While the overall network looks complex and somewhat intimidating, never fear, from an end-user point of view the system is relatively simple and easy to use
- Let's start by looking at the Winlink Network

Overview – Winlink Network

5 Common Message Servers running on Amazon AWS worldwide

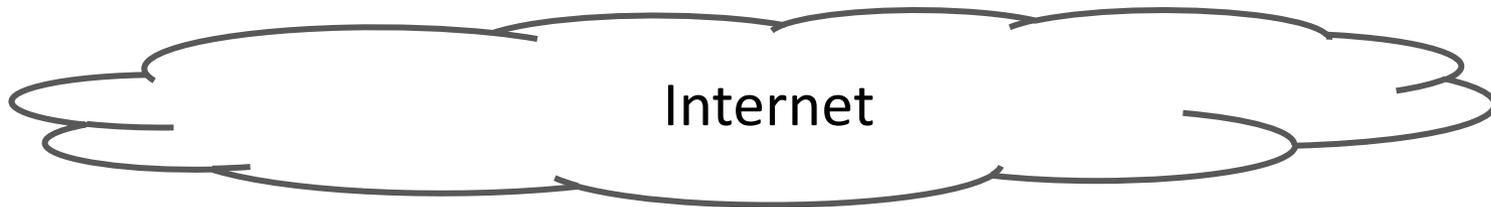
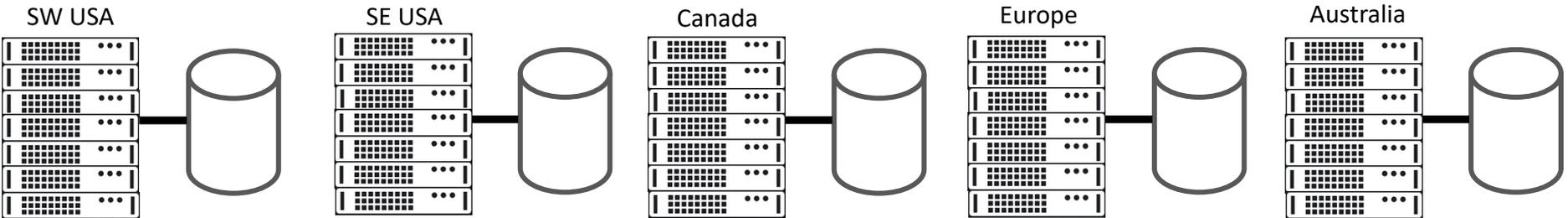


Thousands of Remote Messaging Servers Throughout the World



Message sent end to end with Telnet

5 Common Message Servers running on Amazon AWS worldwide



Message is composed and sent



Winlink Express
using Telnet

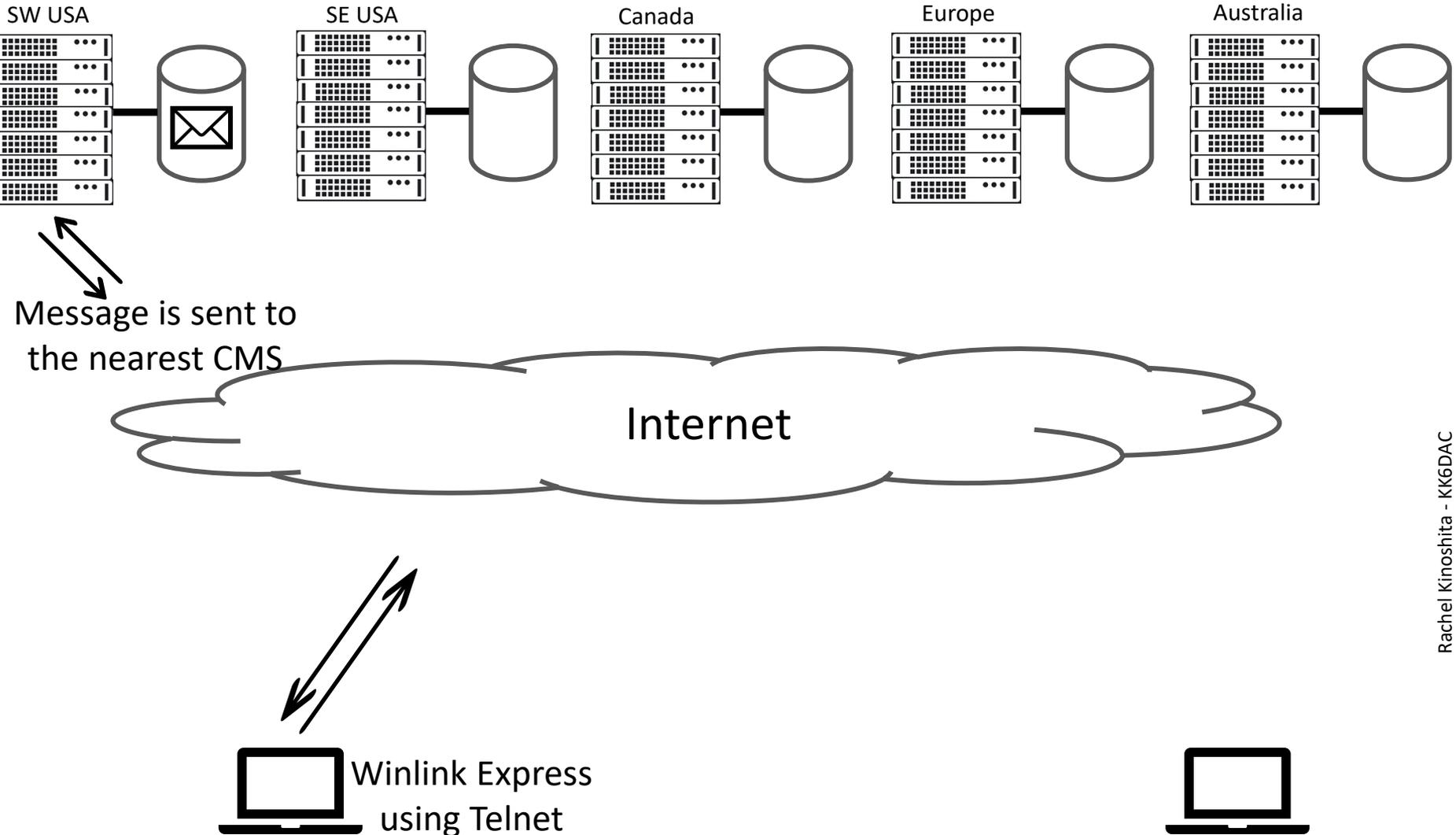
From: KK6DAC
To: K1OSH
Subject: Happy Birthday!

Hey, I hope you had a very happy birthday.
Sorry, I couldn't make it up there this year.



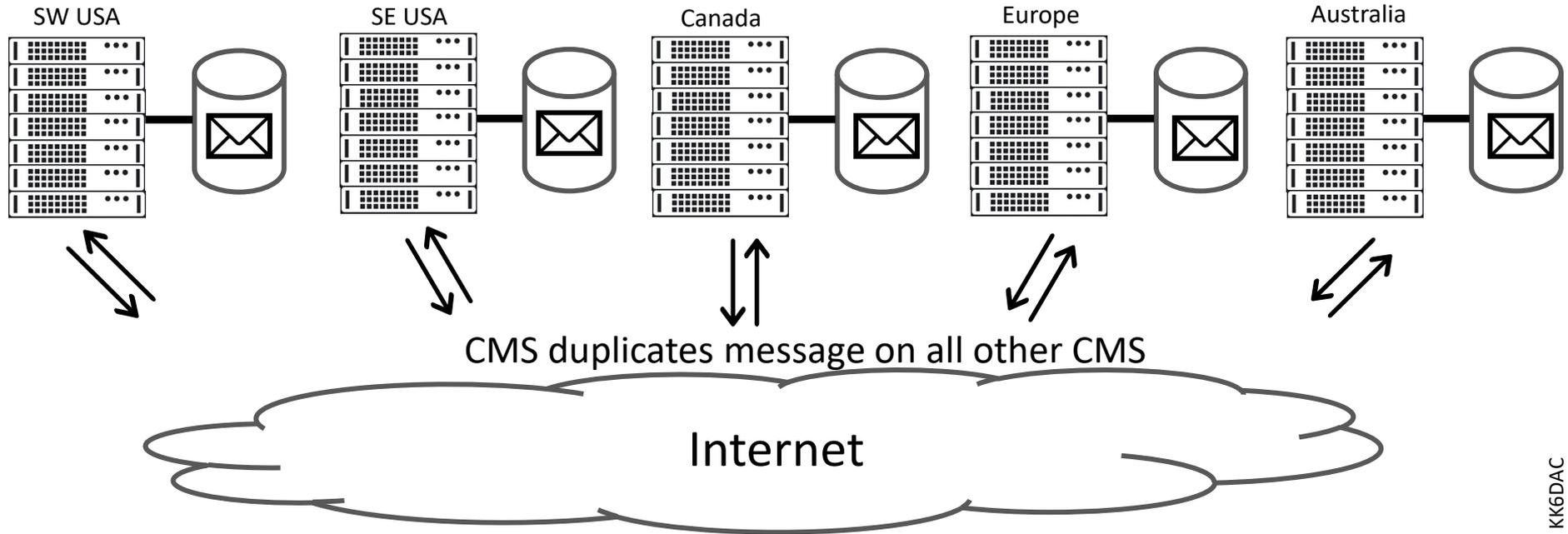
Message sent end to end with Telnet

5 Common Message Servers running on Amazon AWS worldwide



Message sent end to end with Telnet

5 Common Message Servers running on Amazon AWS worldwide

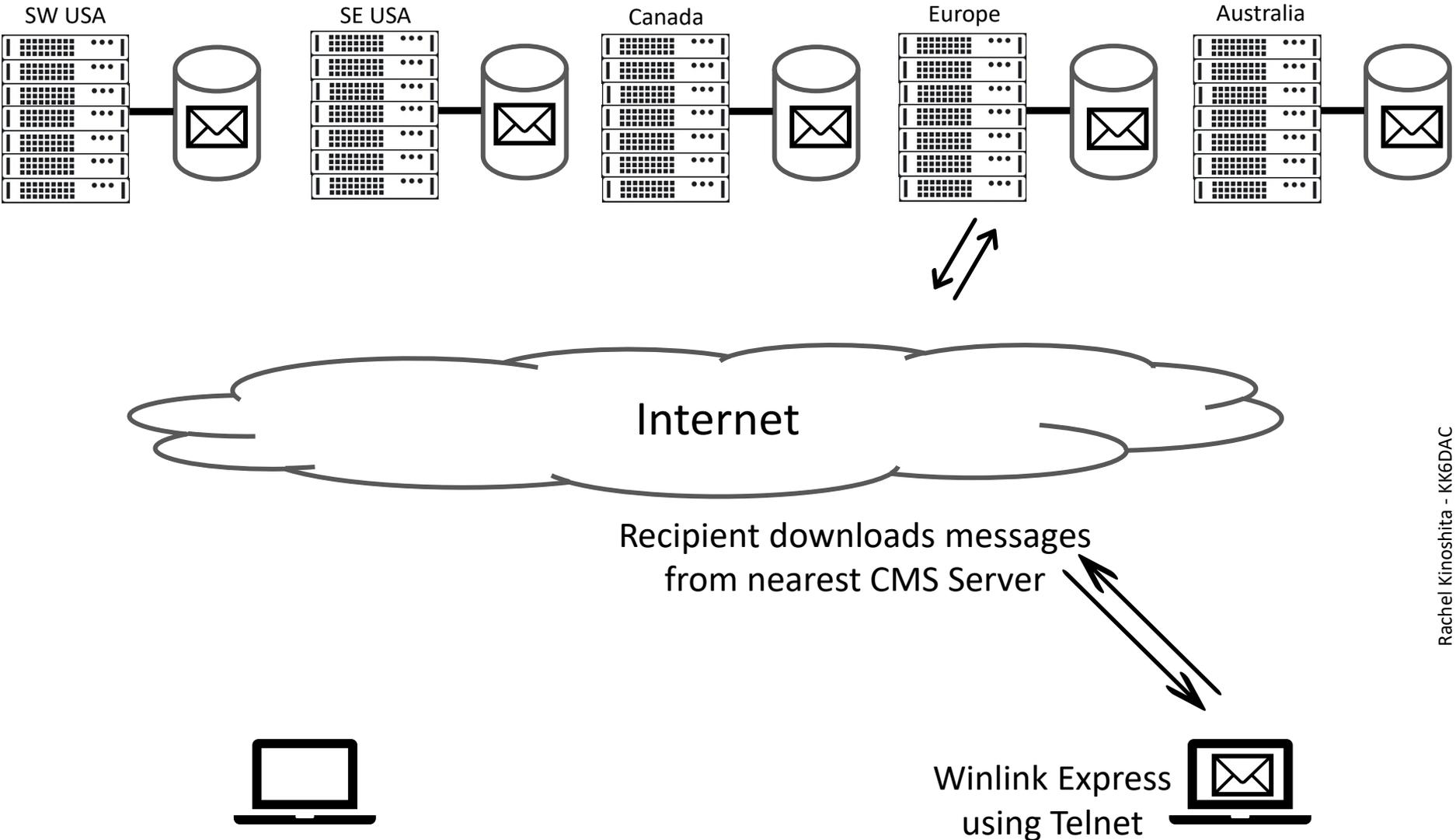


 Winlink Express
using Telnet



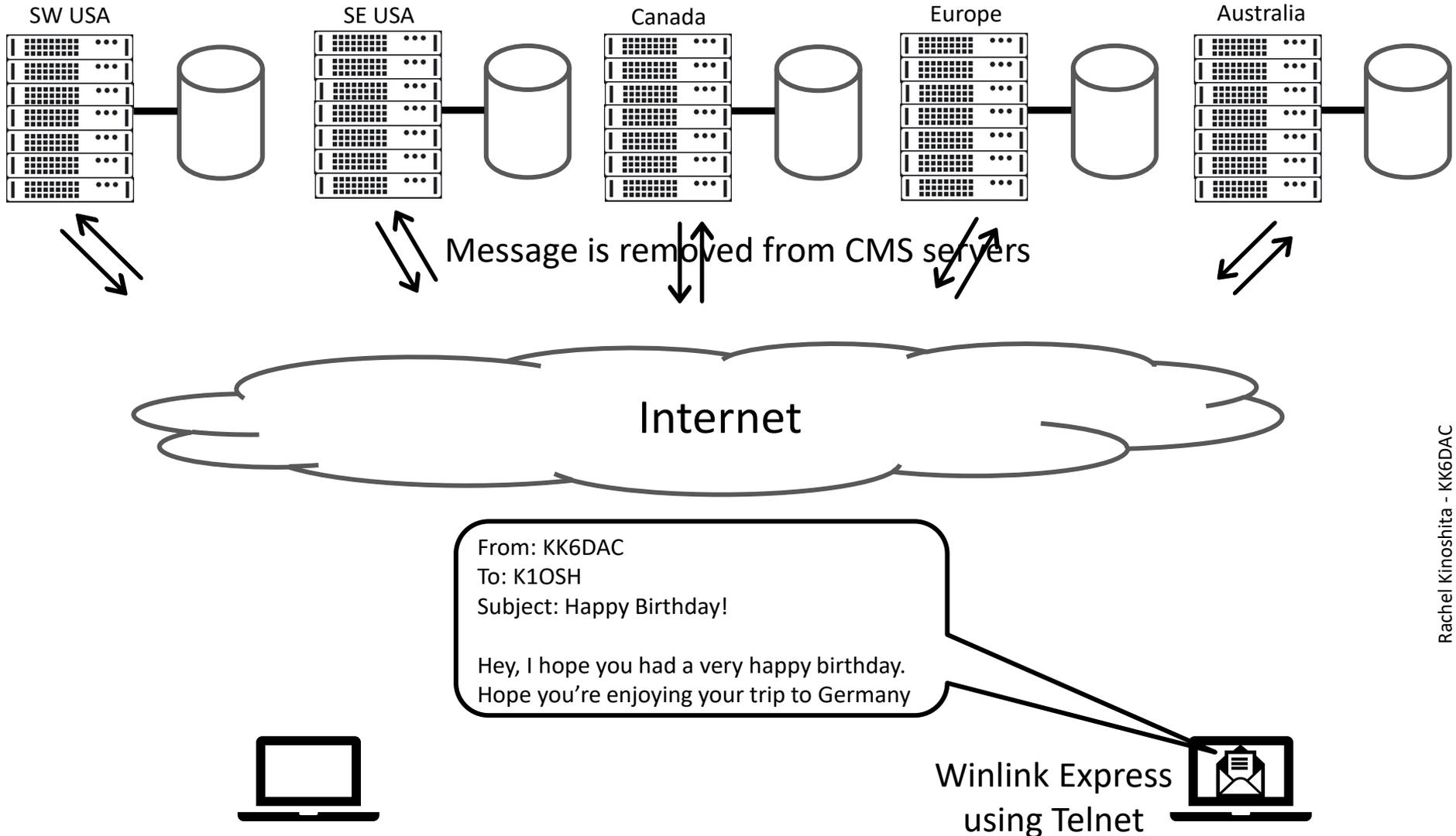
Message sent end to end with Telnet

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Message sent end to end with Telnet

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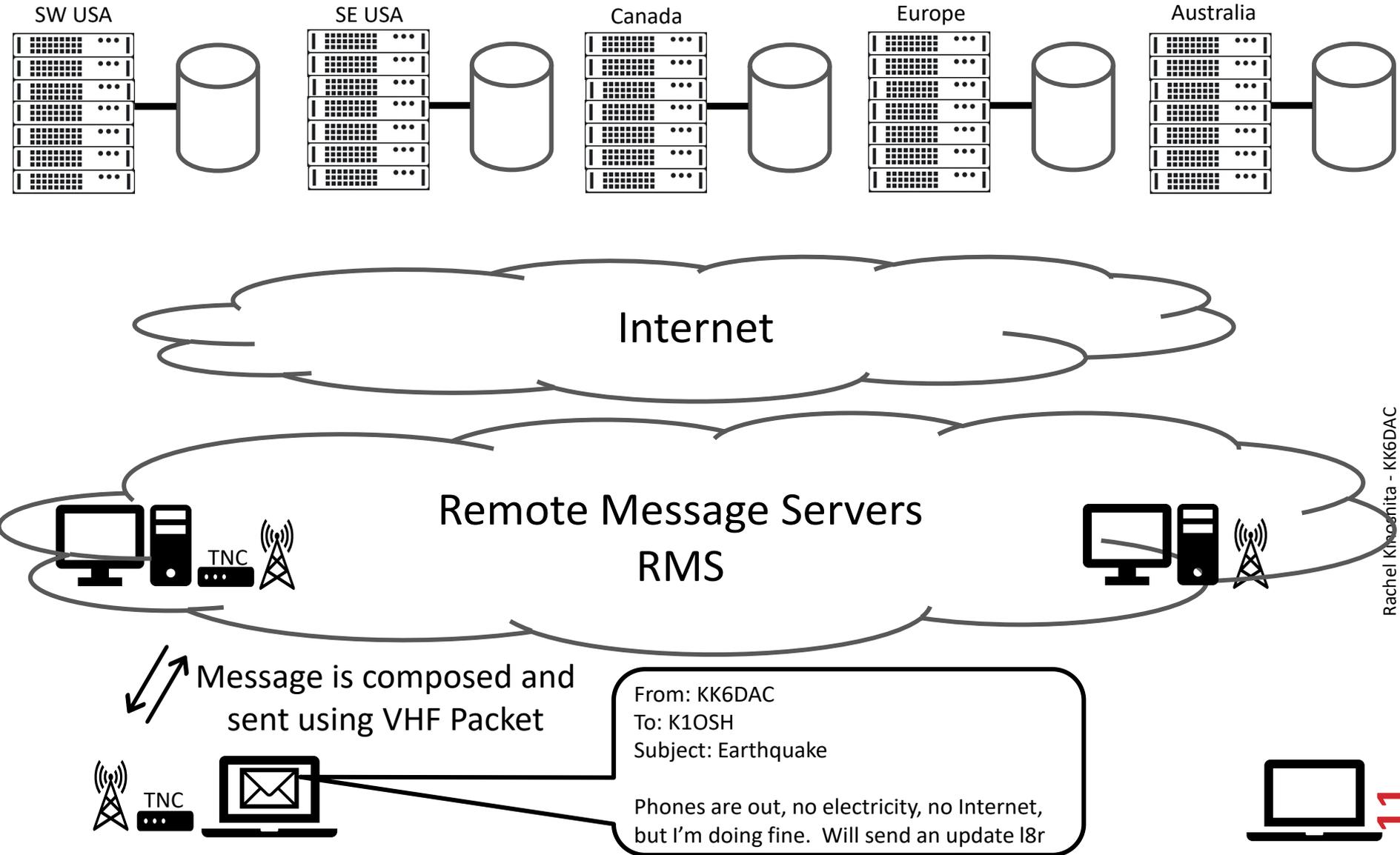


Sending via VHF and HF

- If Winlink Express sends through the Internet using Telnet, how is this any different from regular email?
- In the case of Telnet, it's not all that different. But Telnet is just a launching point and a way to get your feet wet
- Now, let's see what it's like to send / receive a message via VHF and HF

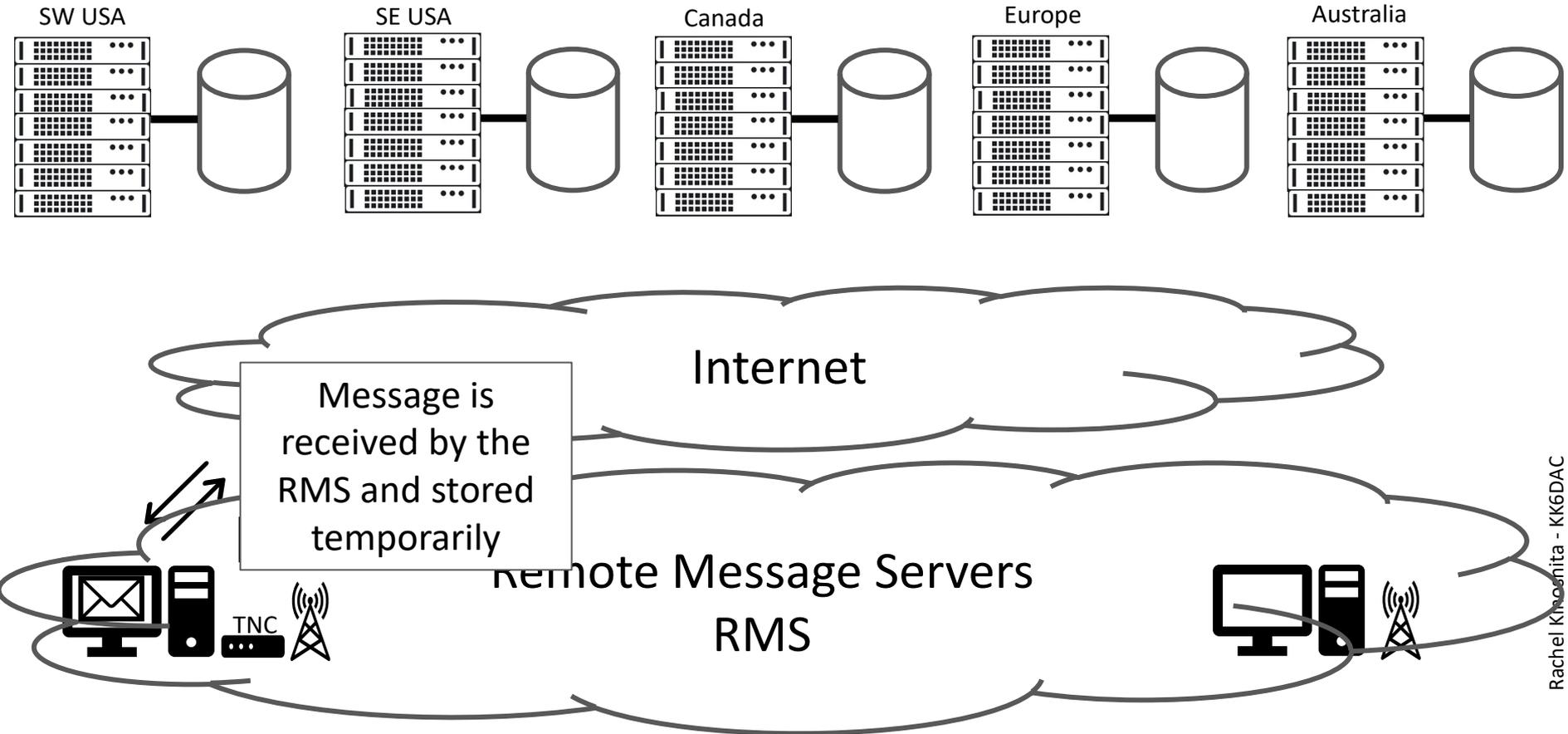
Send using VHF (Packet)

5 Common Message Servers running on Amazon AWS worldwide



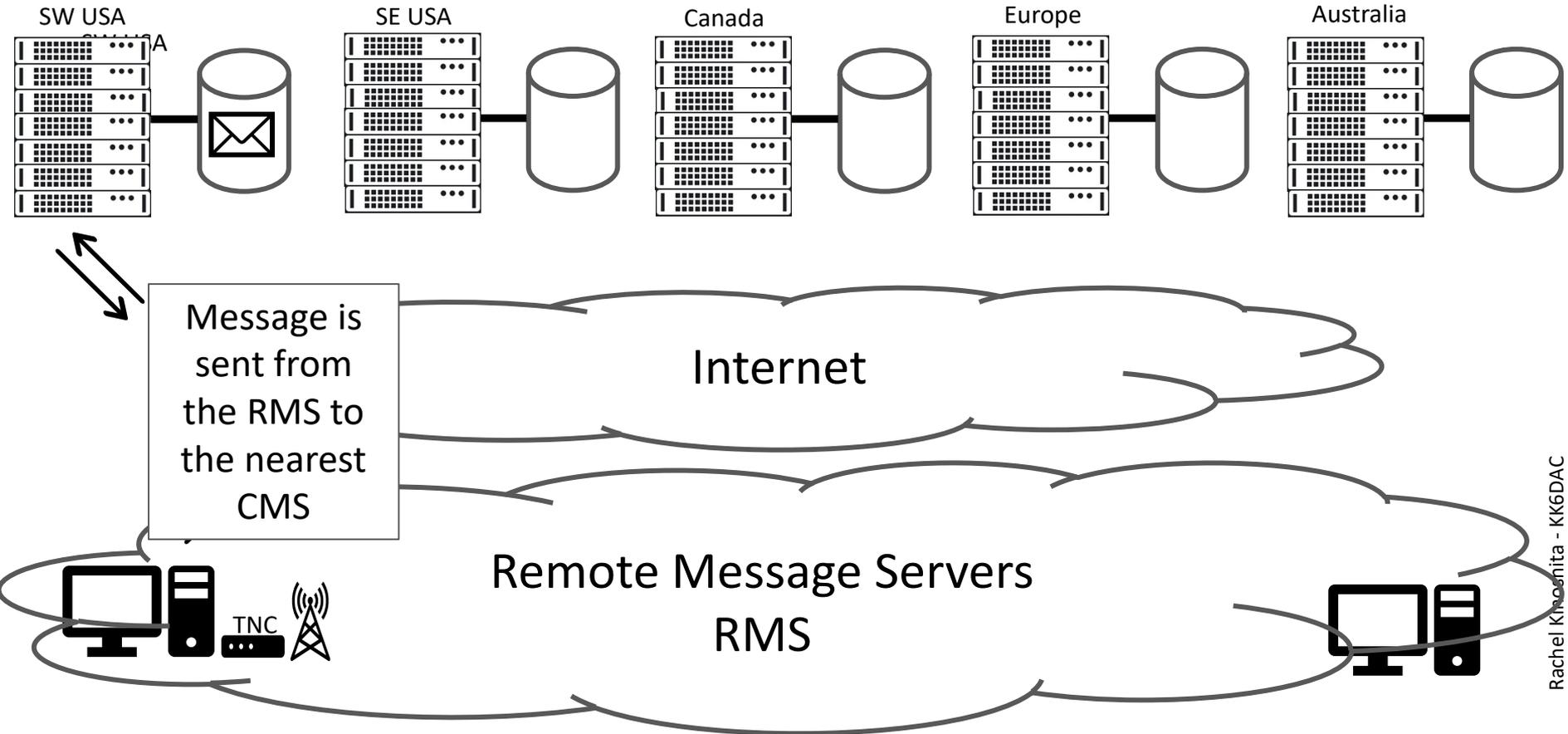
Send using VHF (Packet)

5 Common Message Servers running on Amazon AWS worldwide



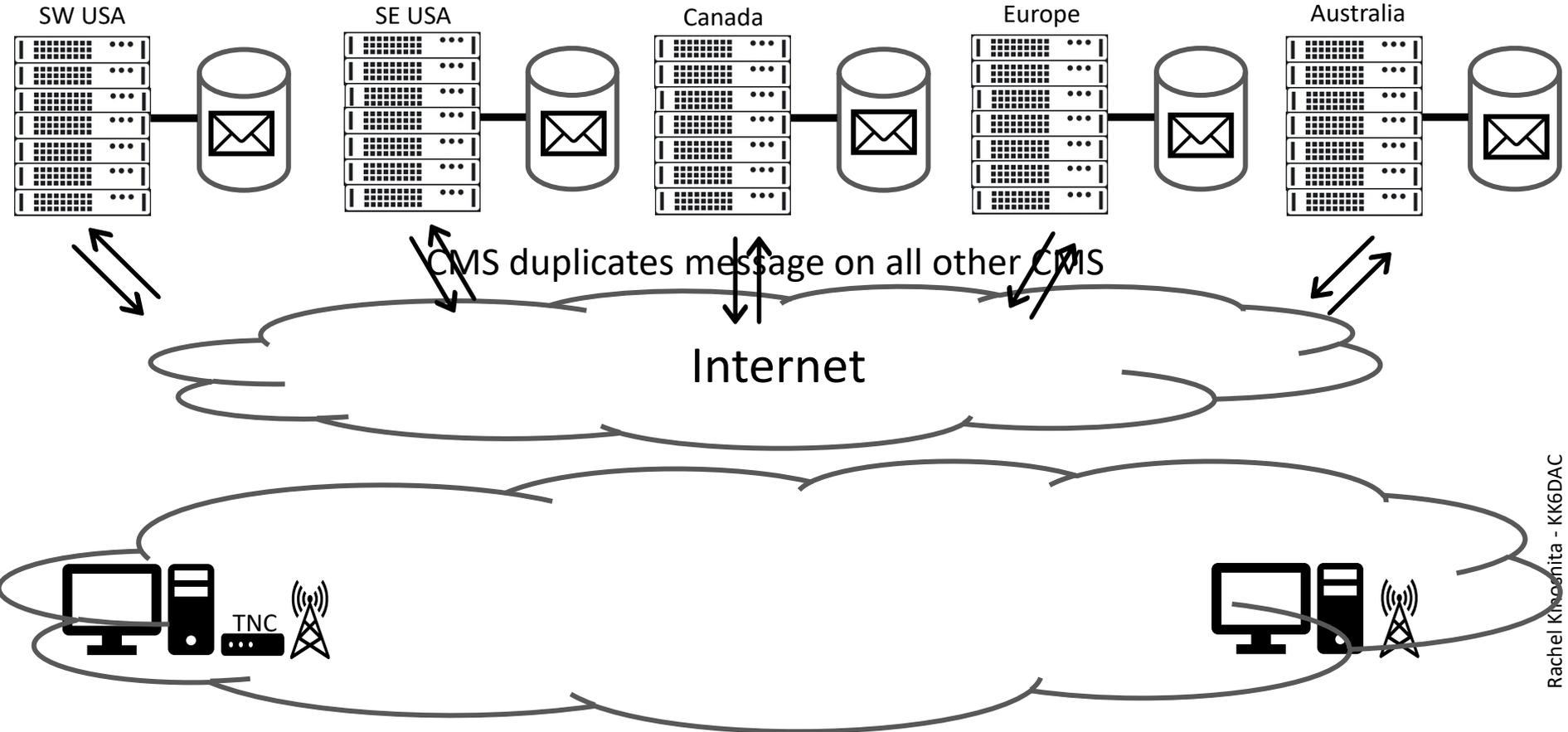
Send using VHF (Packet)

5 Common Message Servers running on Amazon AWS worldwide



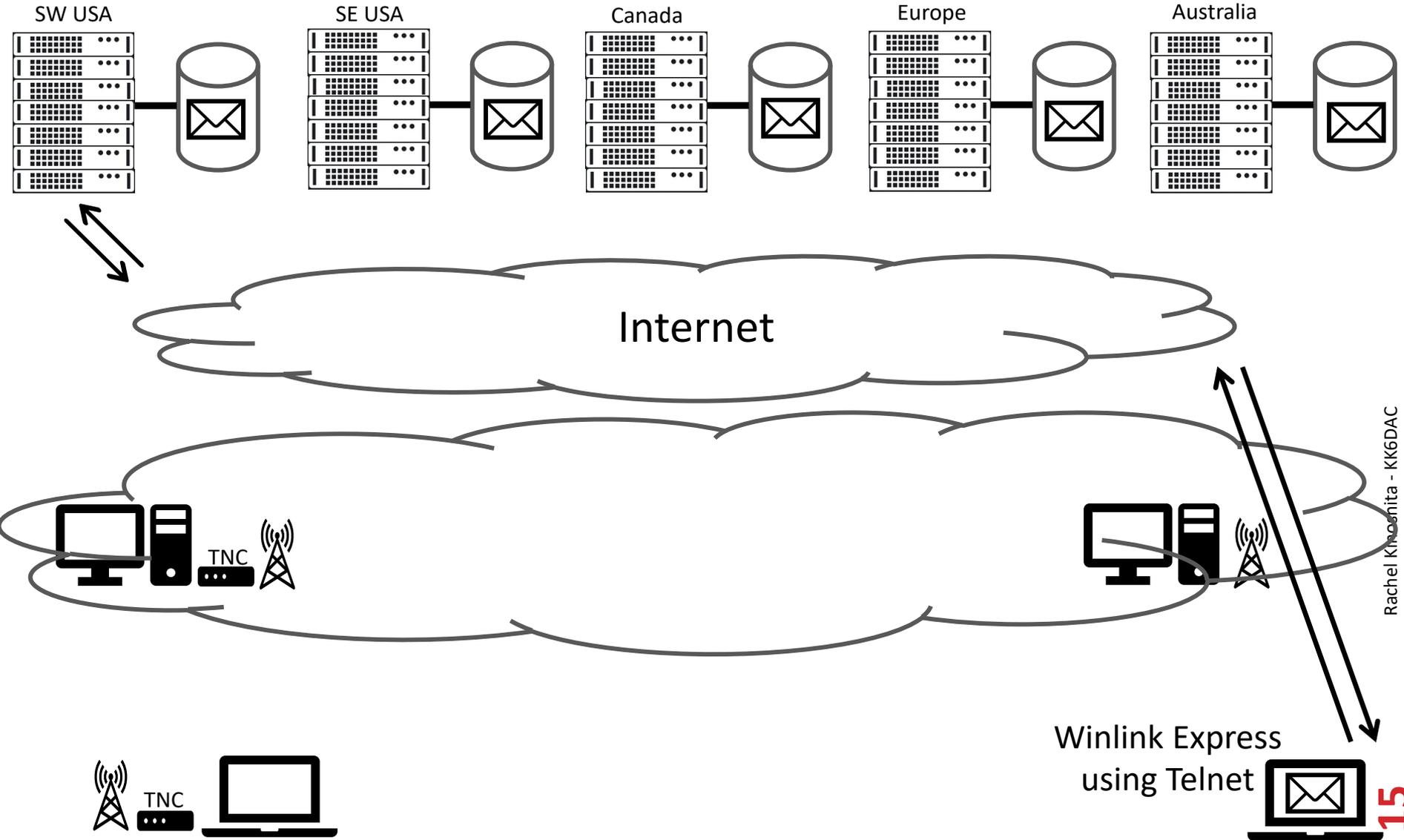
Send using VHF (Packet)

5 Common Message Servers running on Amazon AWS worldwide



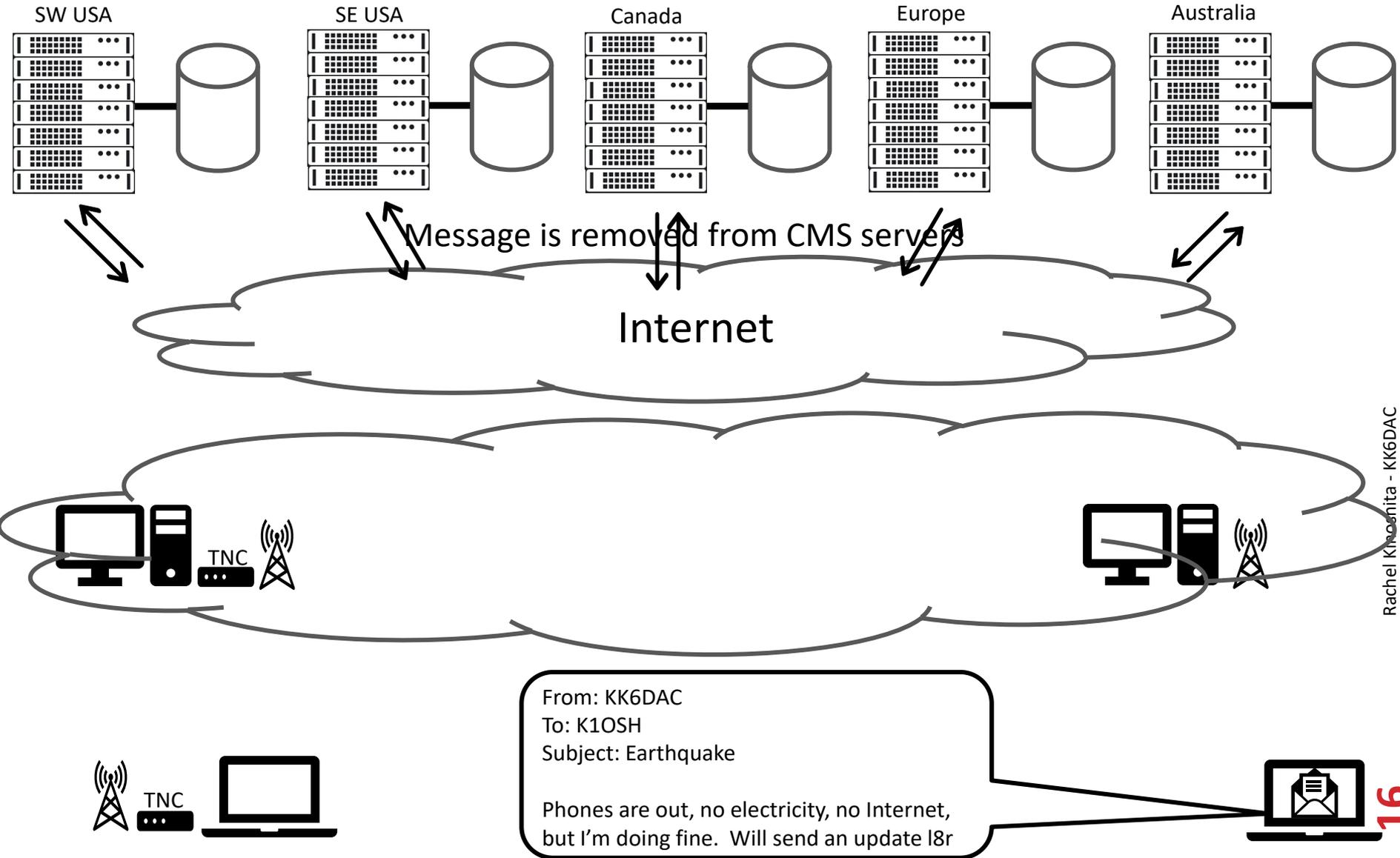
Send using VHF (Packet)

5 Common Message Servers running on Amazon AWS worldwide

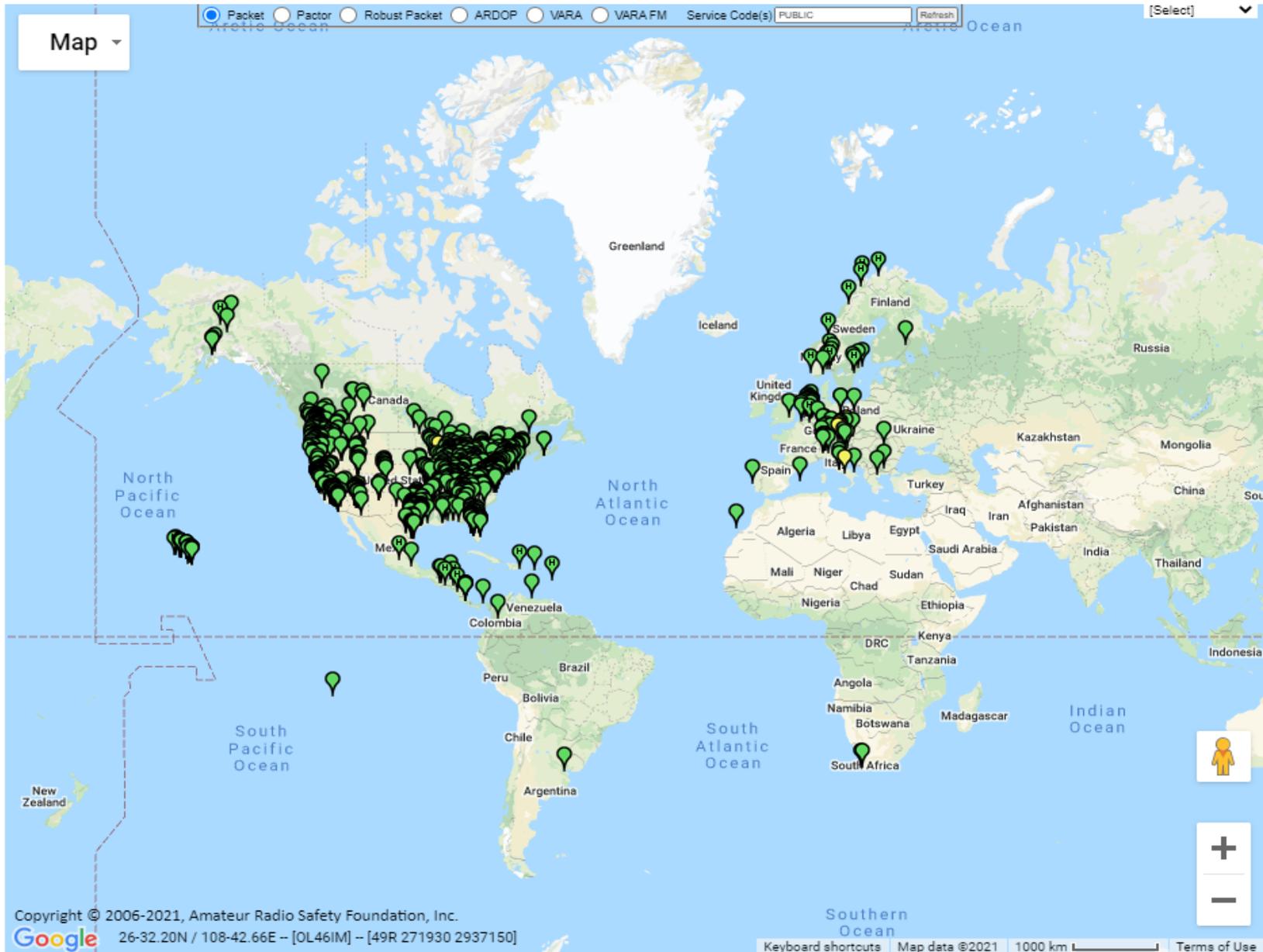


Send using VHF (Packet)

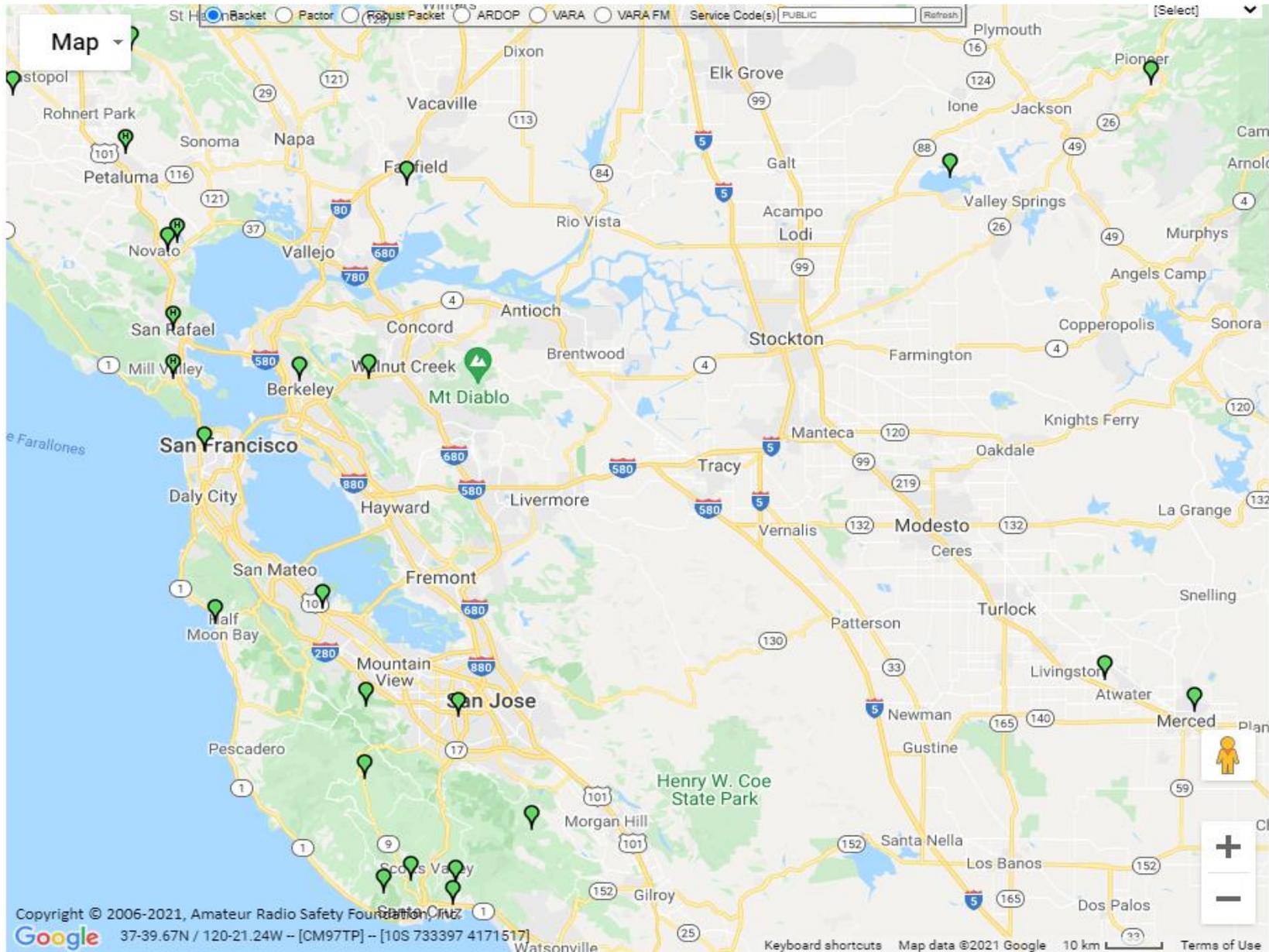
5 Common Message Servers running on Amazon AWS worldwide



Overview – Winlink Packet Network

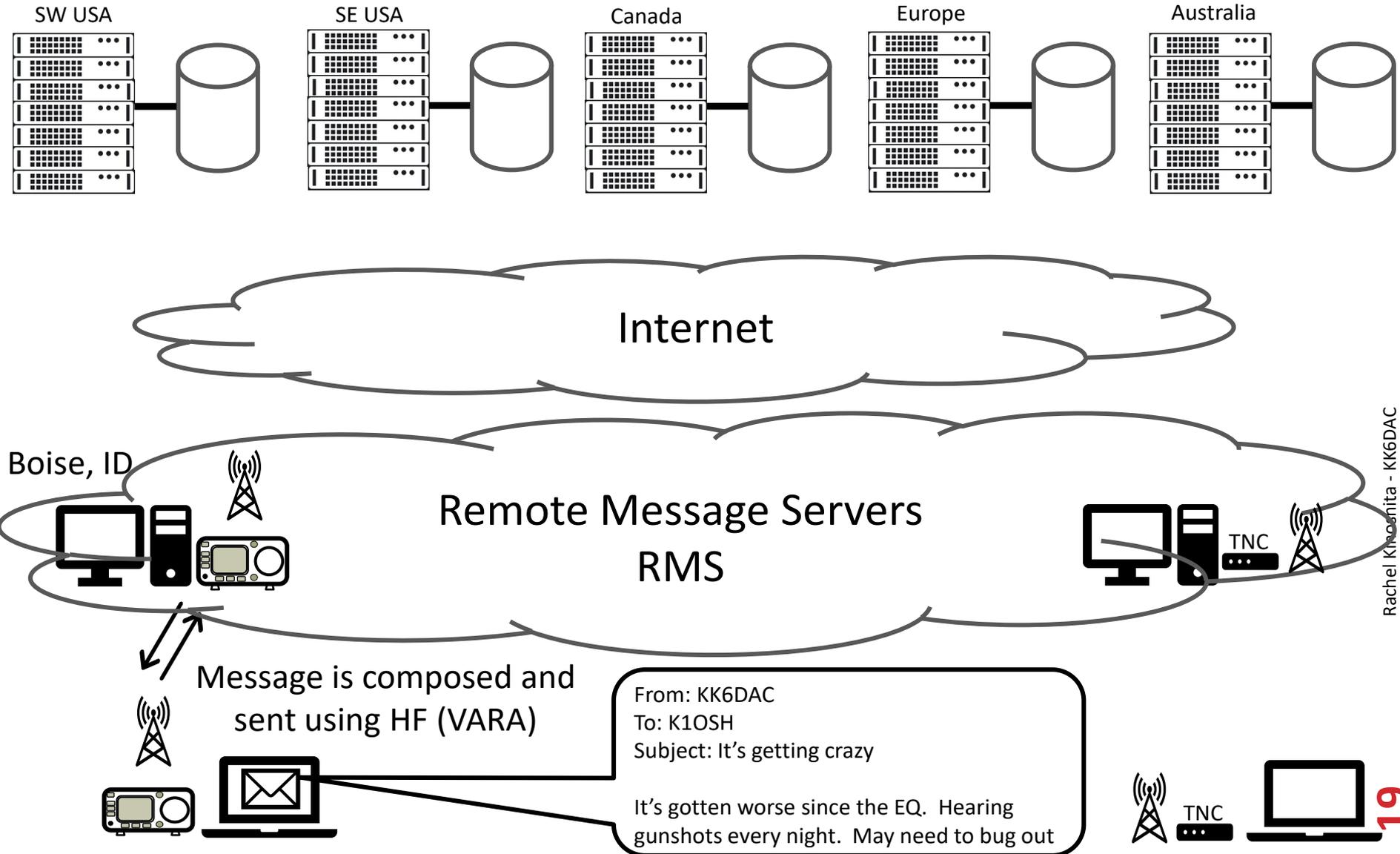


Overview – Winlink Packet Network



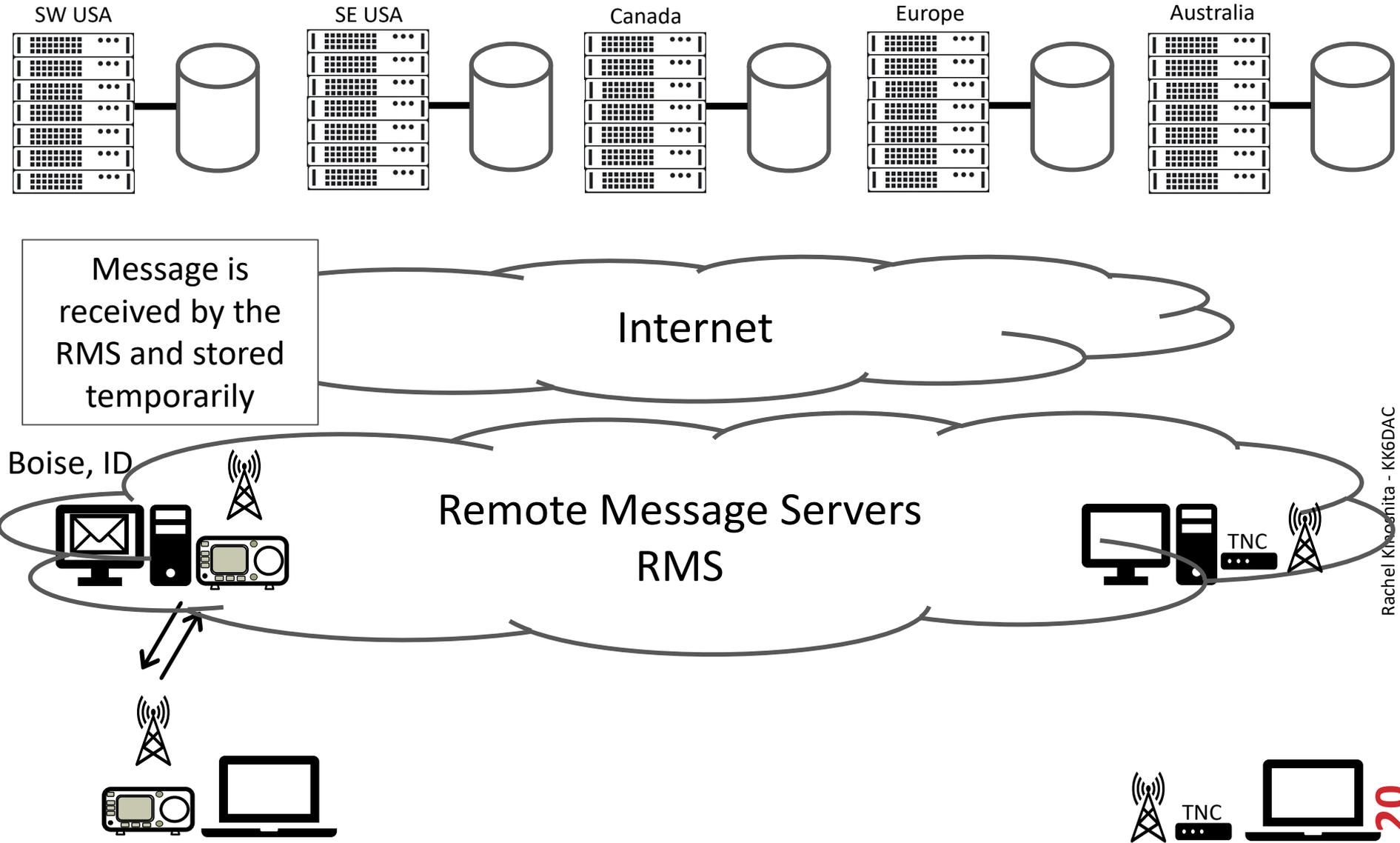
Send using HF, Receive using VHF

5 Common Message Servers running on Amazon AWS worldwide



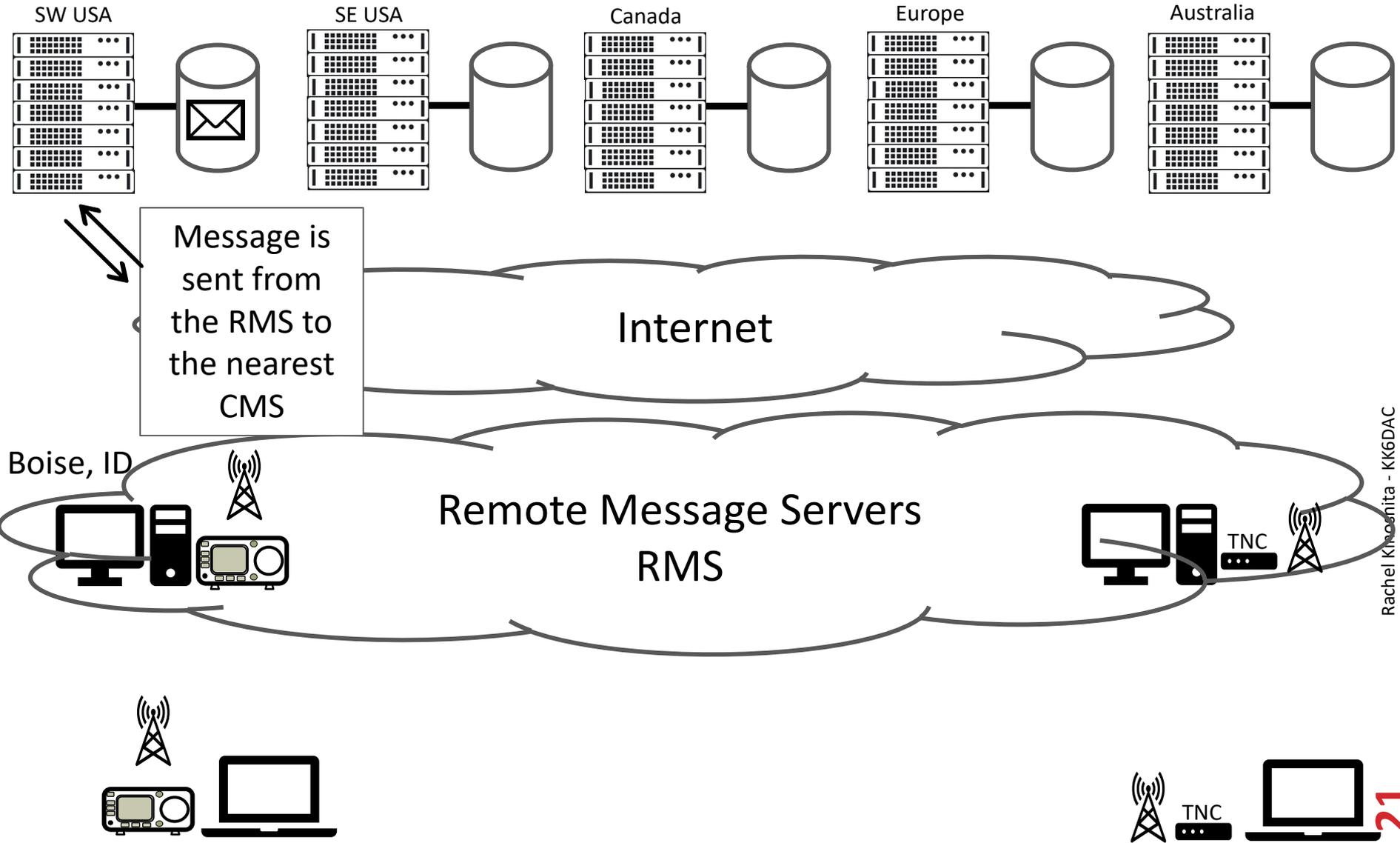
Send using HF, Receive using VHF

5 Common Message Servers running on Amazon AWS worldwide



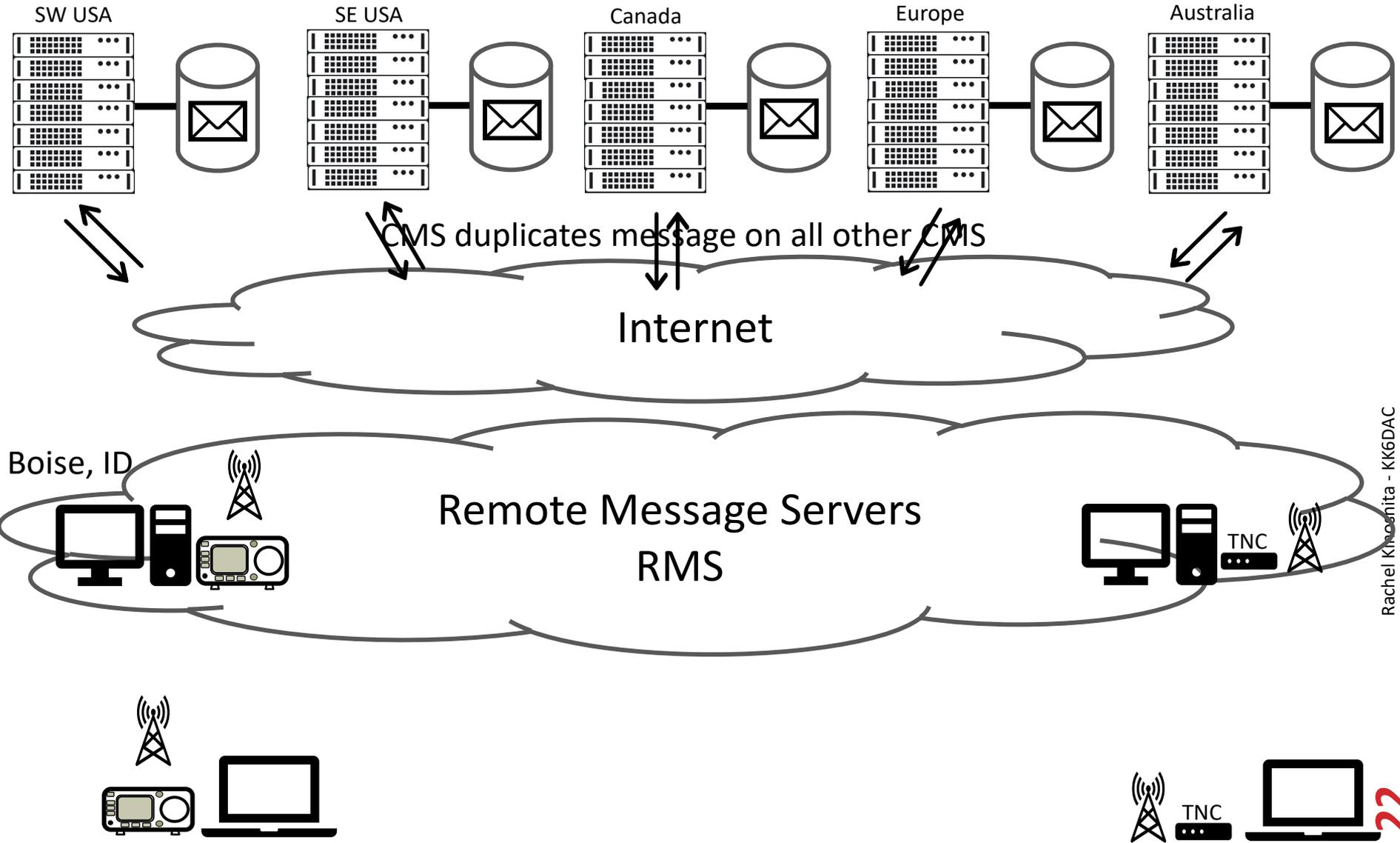
Send using HF, Receive using VHF

5 Common Message Servers running on Amazon AWS worldwide



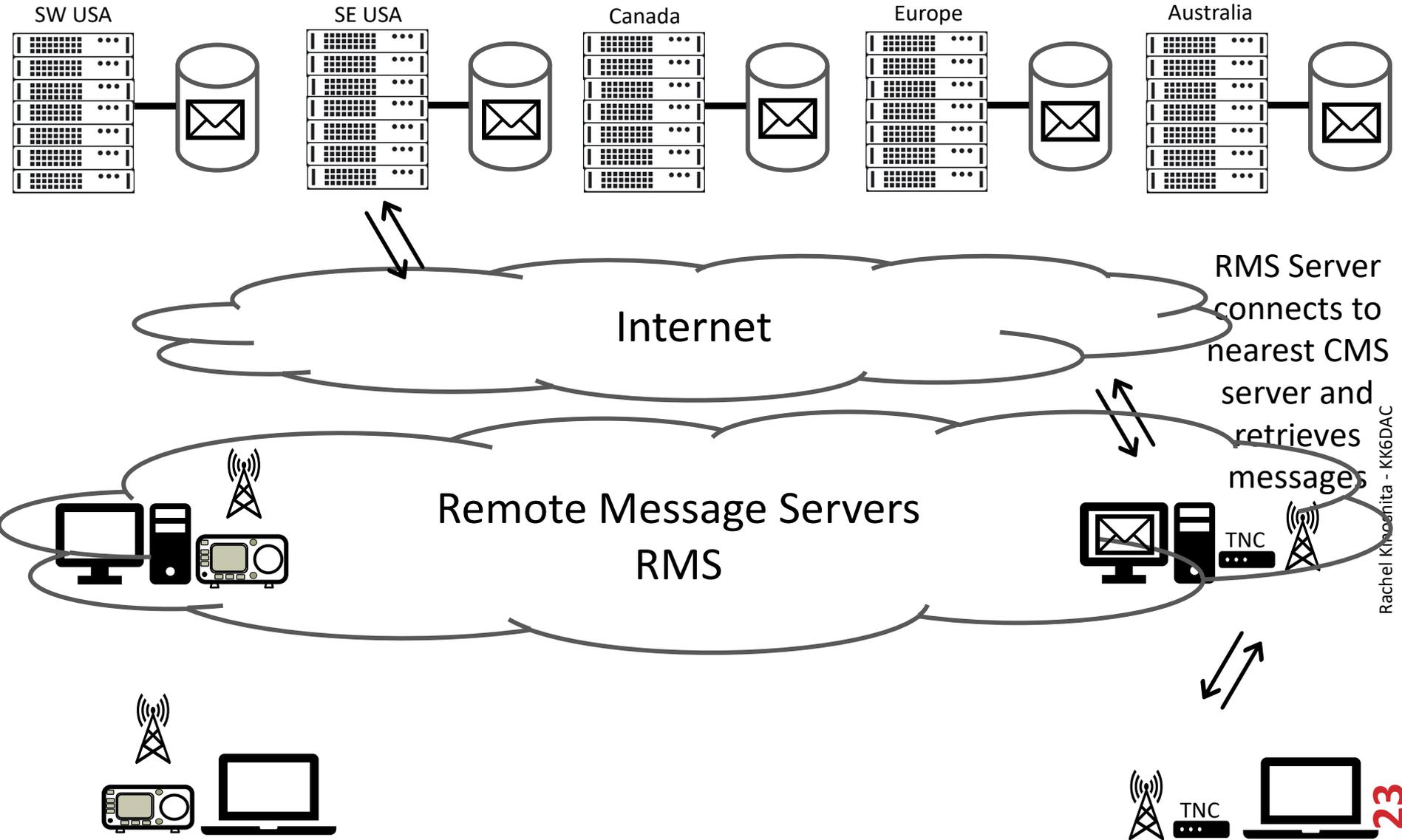
Send using HF, Receive using VHF

5 Common Message Servers running on Amazon AWS worldwide



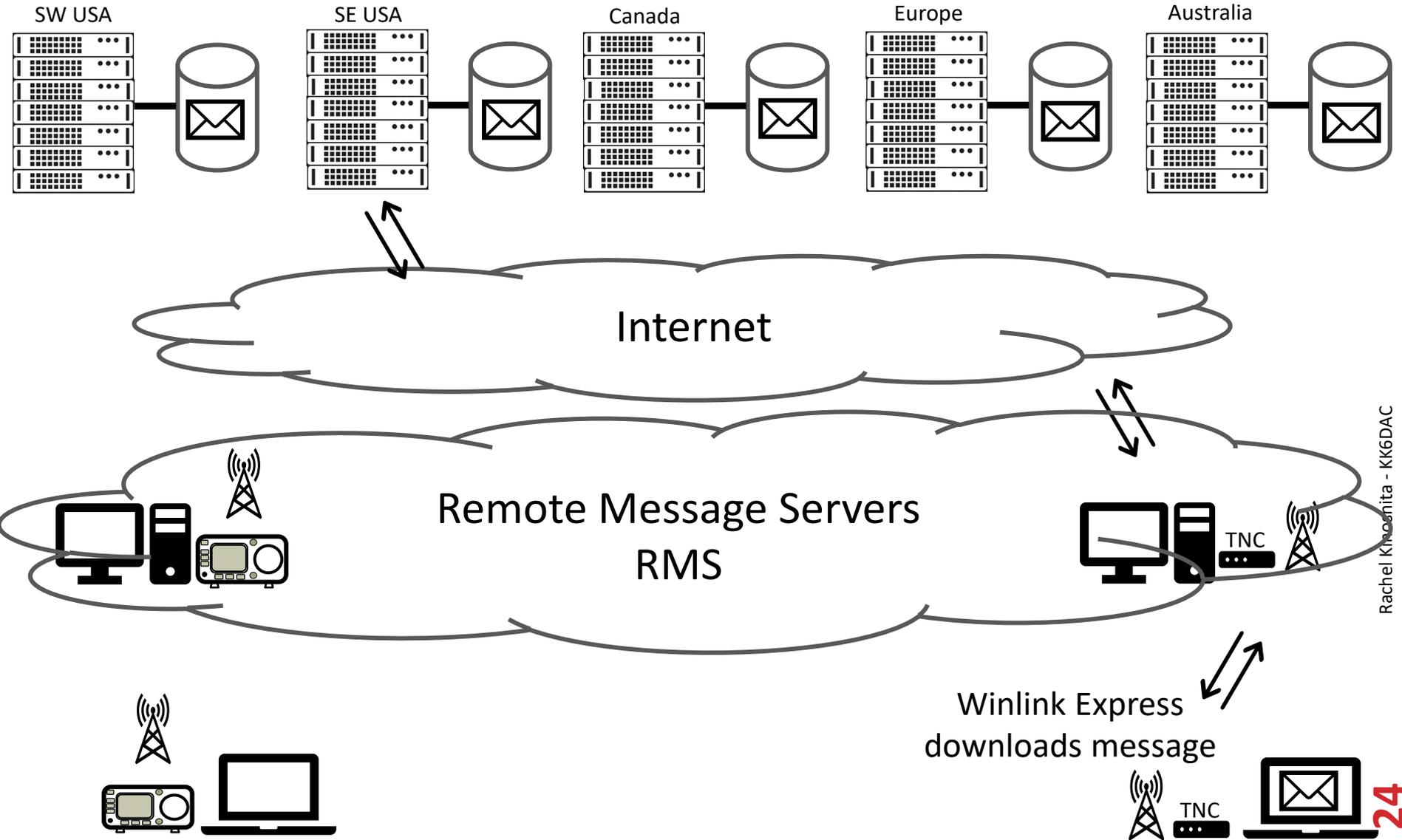
Send using HF, Receive using VHF

5 Common Message Servers running on Amazon AWS worldwide



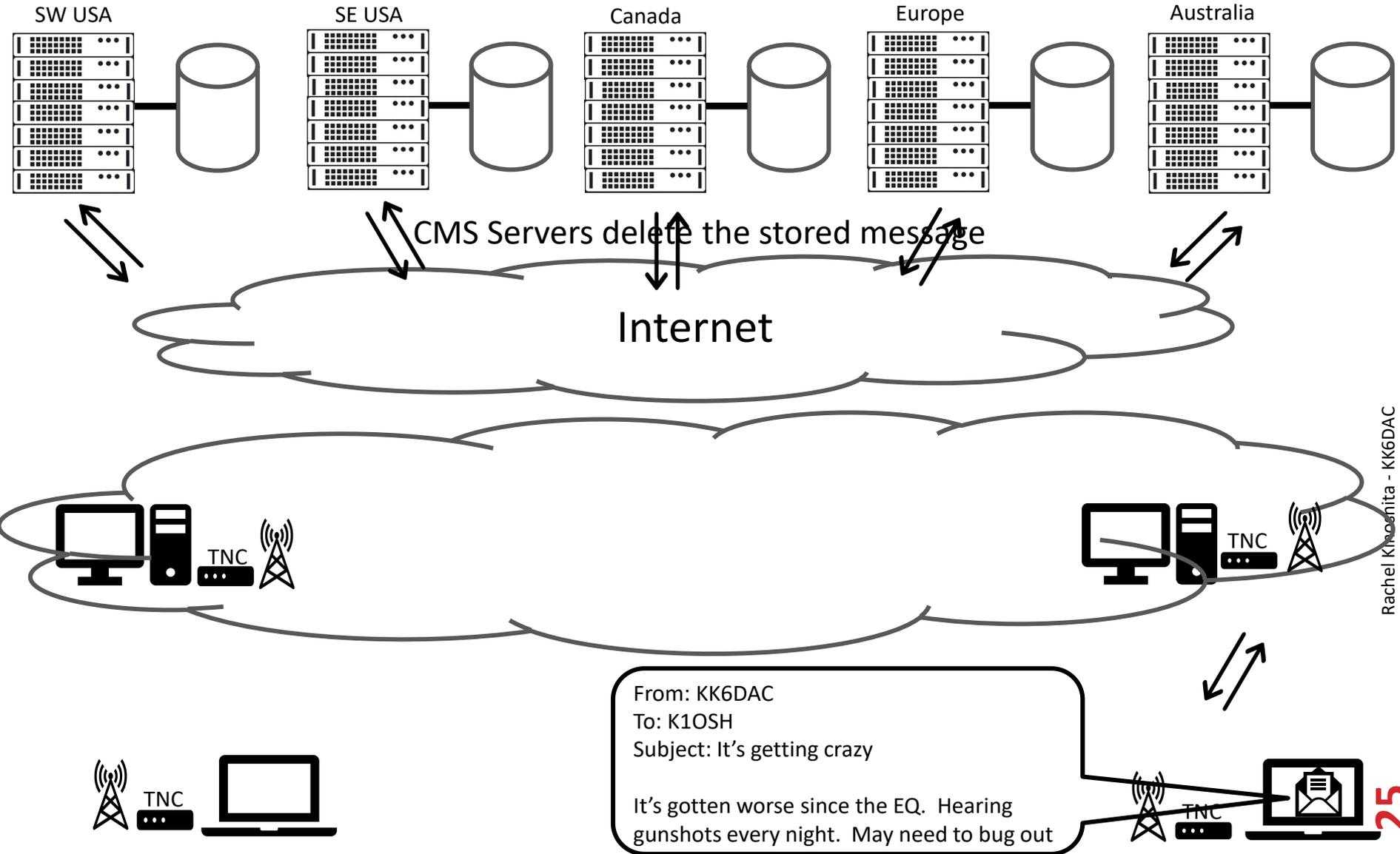
Send using HF, Receive using VHF

5 Common Message Servers running on Amazon AWS worldwide

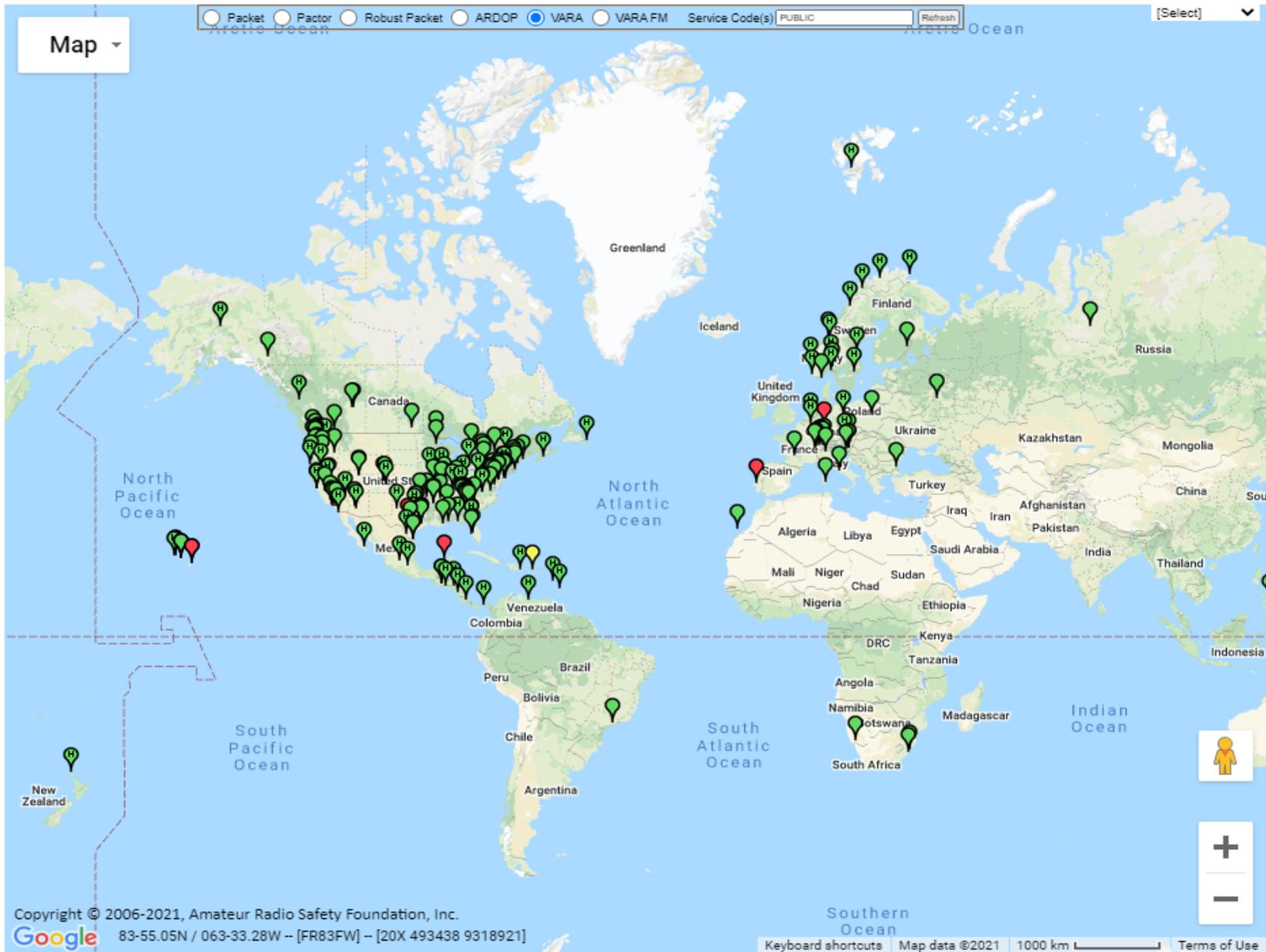


Send using HF (VARA, Pactor, Ardop)

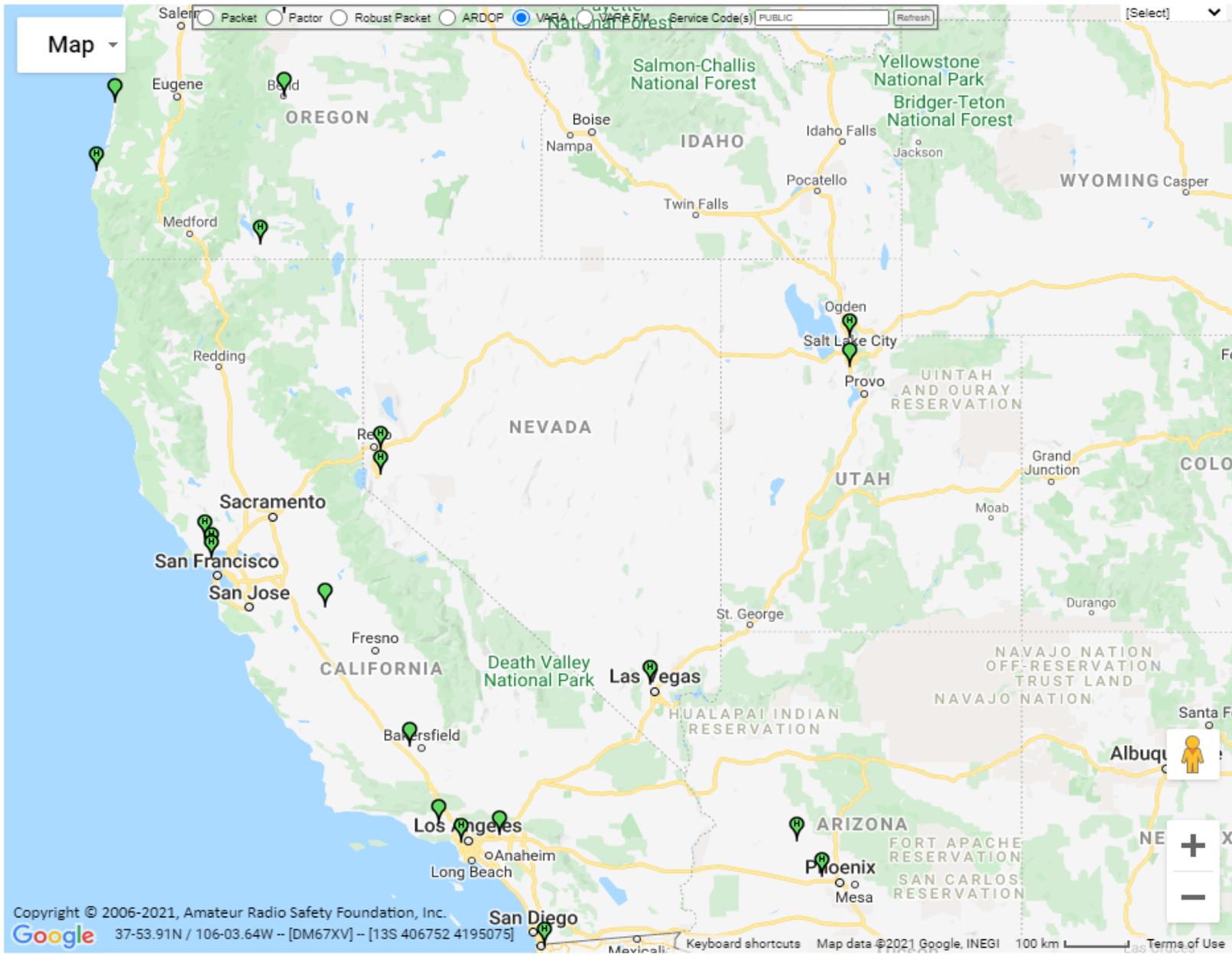
5 Common Message Servers running on Amazon AWS worldwide



Overview – Winlink HF VARA Network



Overview – Winlink HF VARA Network

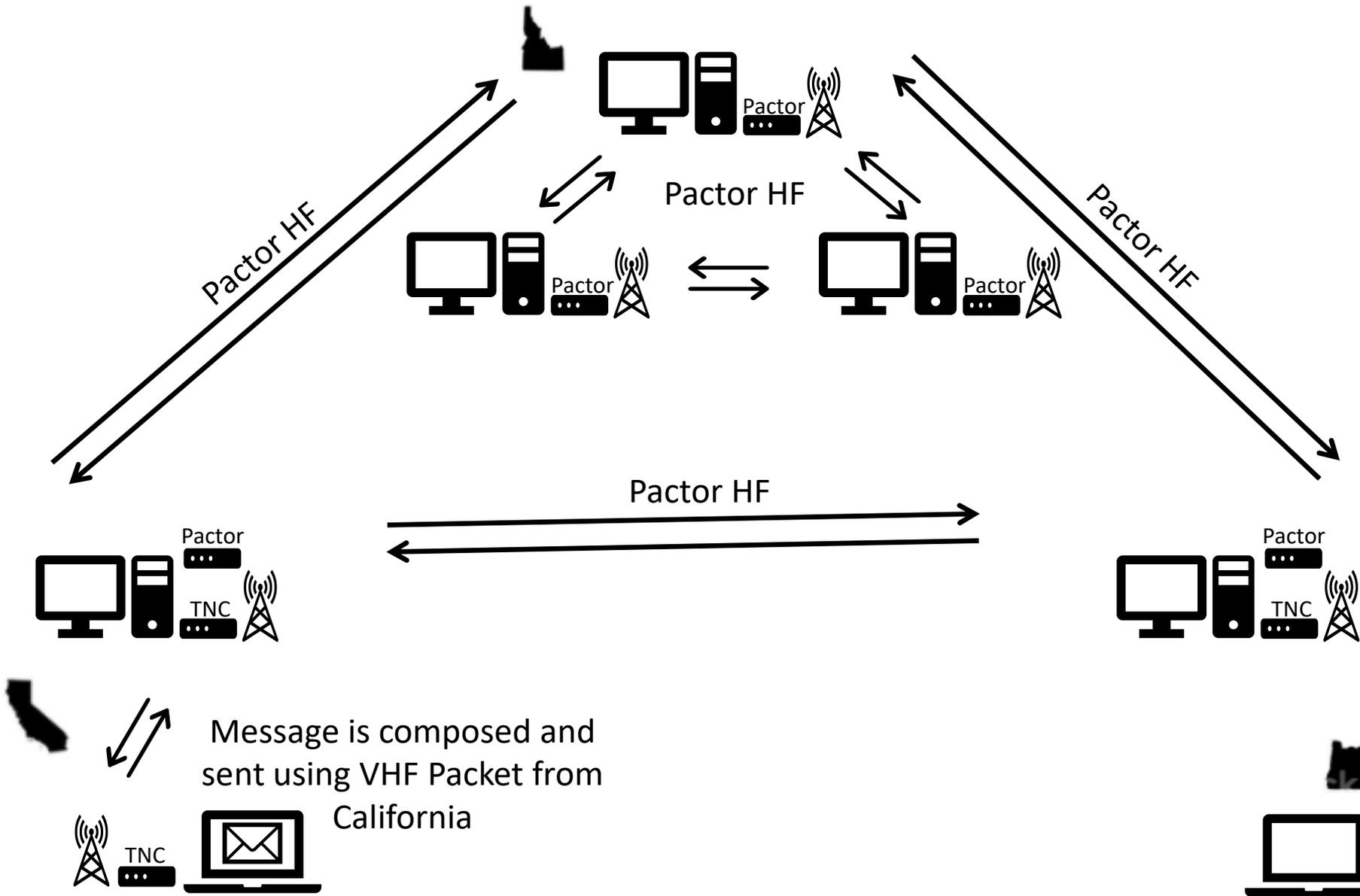


Sending via Radio Only

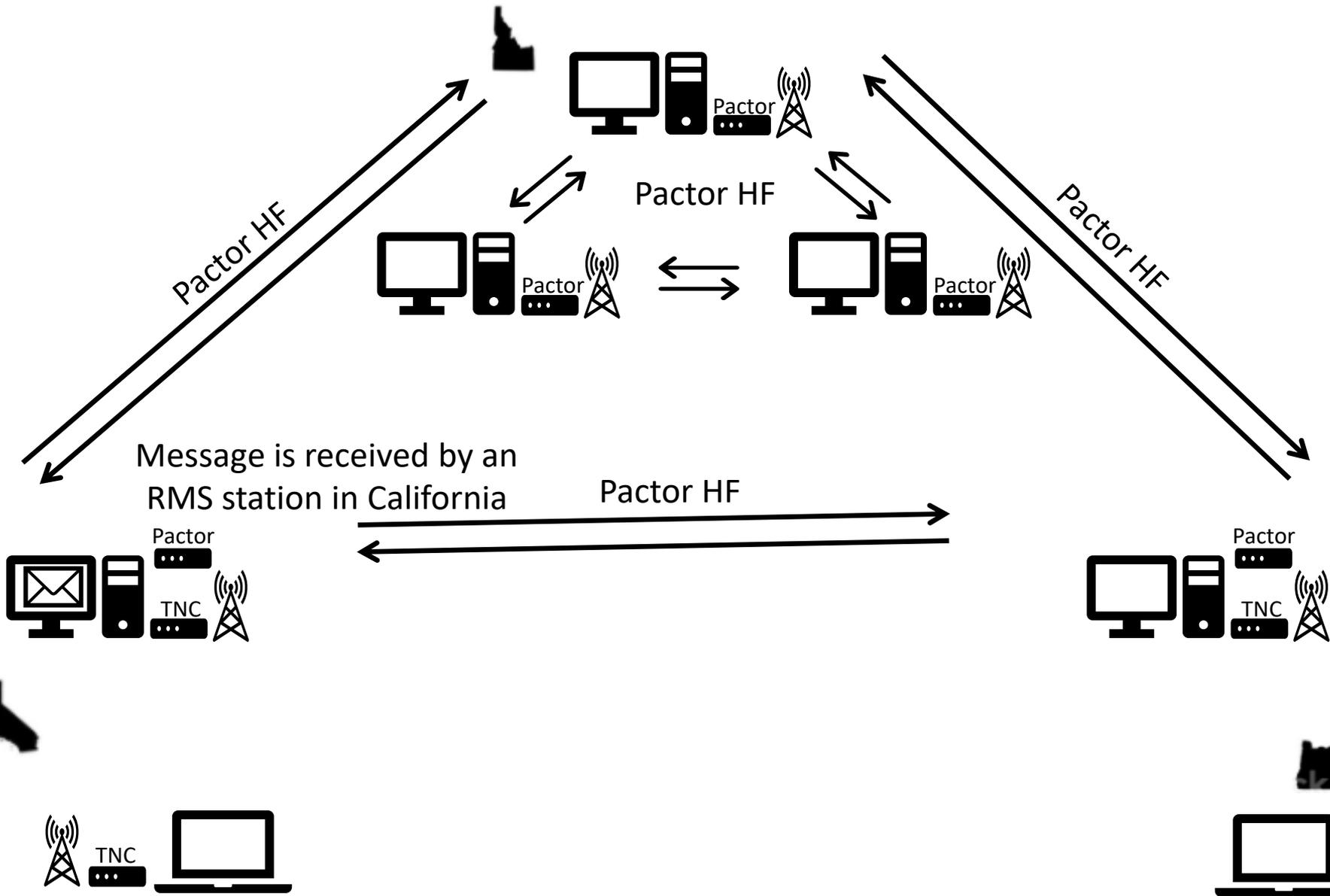
- In those examples, Winlink is still using the Internet
- So, what good is Winlink for Emergency Communications?
 - The RMS Servers can communicate over both the Internet and using radio-only (typically Pactor*)
 - In a localized disaster, an RMS can use radio-only to transfer the message outside the area where the receiving RMS can use the Internet to deliver to the Common Message Servers (CMS)
 - If a global disaster occurs, messages can be delivered worldwide using radio-only. Keep in mind, this method is much slower, so keep your messages short and don't expect instant turn-around
 - With radio-only, you can only send to other Winlink users. You cannot send to Internet email addresses, nor SMS/MMS

*Pactor is a mode / protocol designed to transfer digital data over weak or noisy signals. Mostly used on HF. Pactor modems sell for between \$1500 and \$2000.

Send using Radio Only

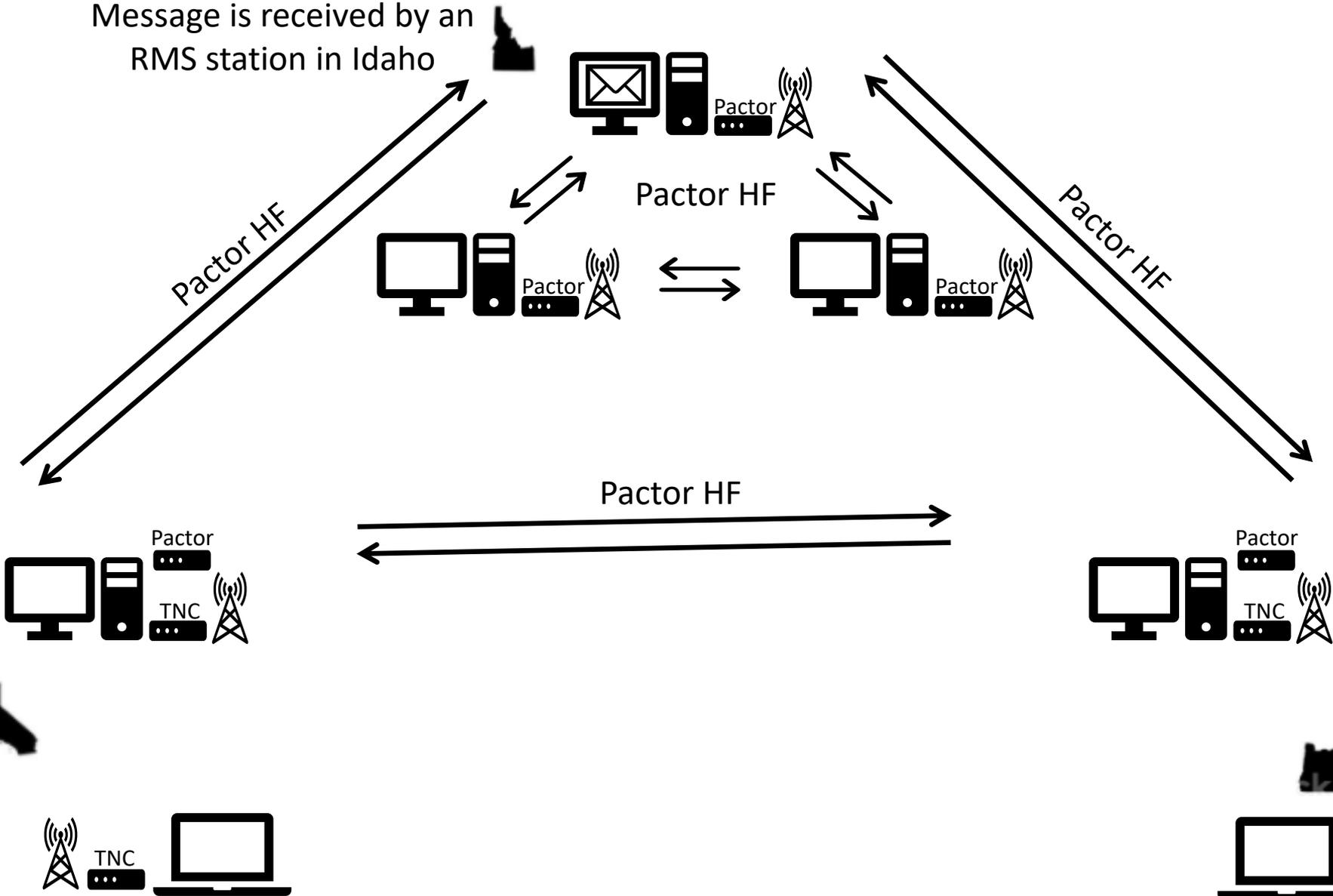


Send using Radio Only

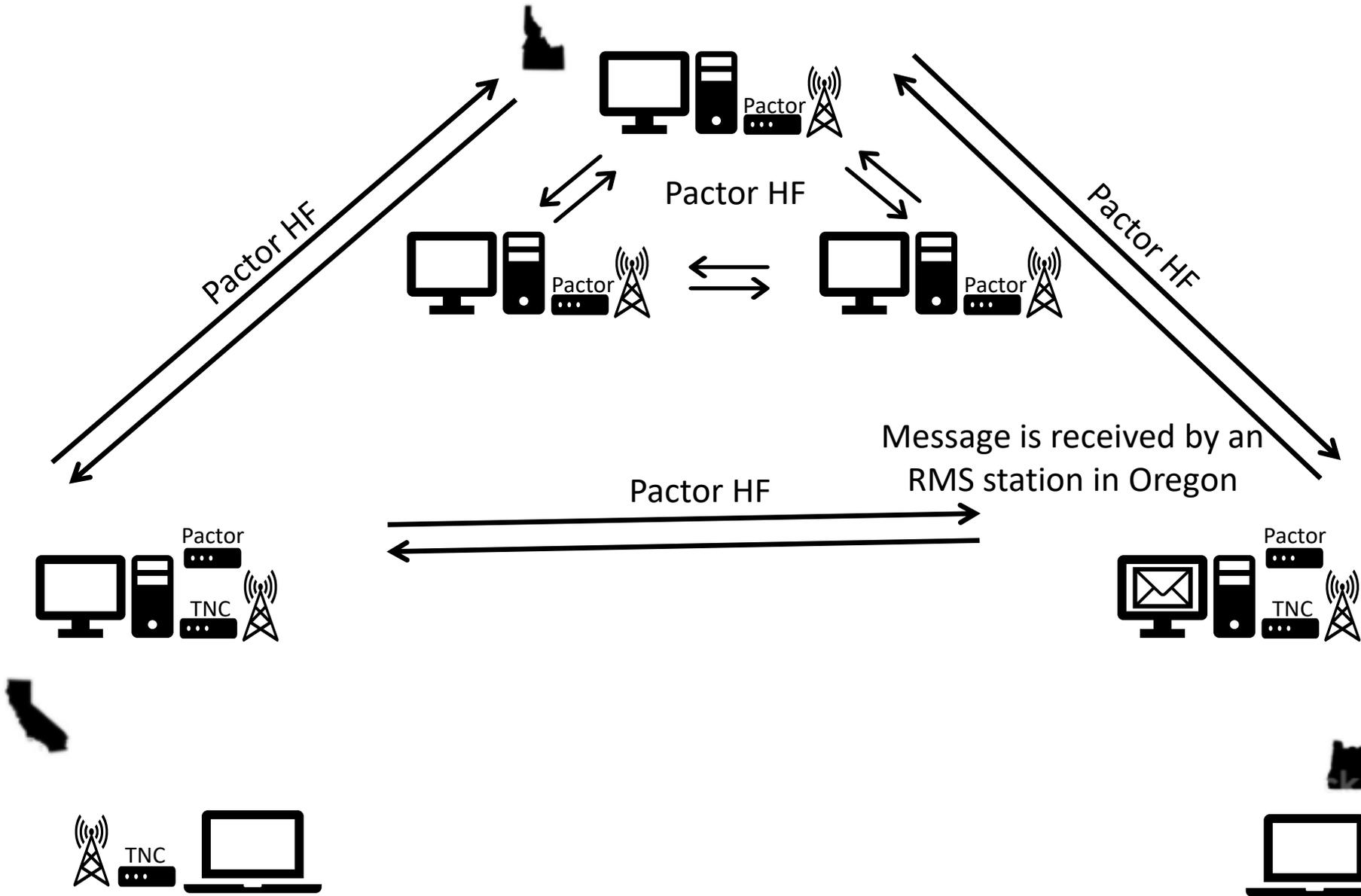


Send using Radio Only

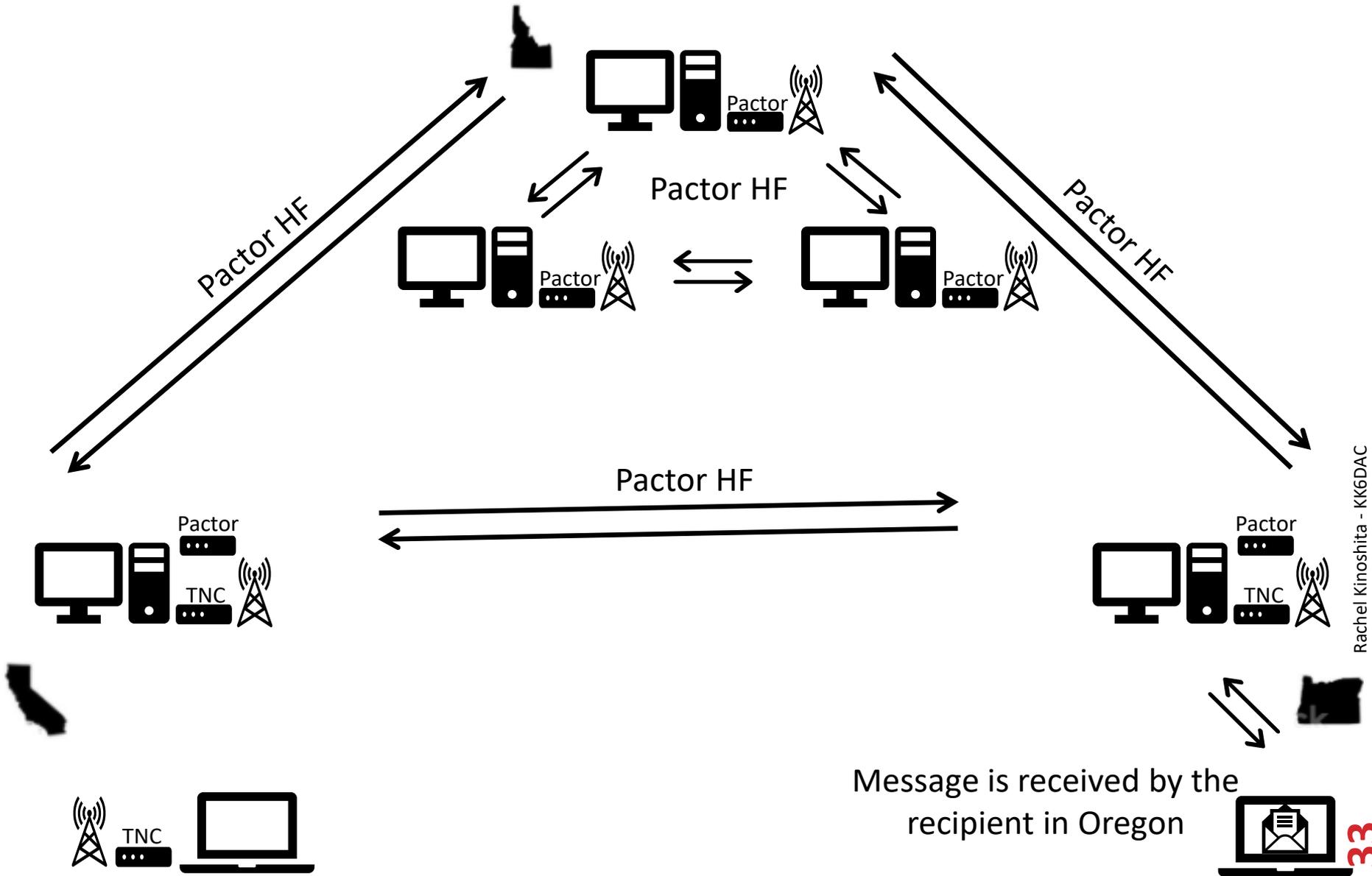
Message is received by an RMS station in Idaho



Send using Radio Only



Send using Radio Only



Downloading Winlink Express

- Using your favorite browser, go to:
 - <https://www.winlink.org/>
 - Then click on Download



Winlink Global Radio Email®...

...is a network of amateur radio and authorized government-licensed stations that provides worldwide radio email using radio pathways where the internet is not present. The system is built, operated and administered entirely by licensed "Ham" volunteers. It supports email with attachments, position reporting, weather and information bulletins, and is well-known for its role in interoperable emergency and disaster relief communications. It is capable of operating

On The Air Podcast Covers Winlink

August 18, 2021--On The Air Podcast host Steve Ford, WB8IMY, has a nice chat with Oliver Dully, K6OLI --the LA region's DEC-- about Winlink from the user's perspective. On The Air is the ARRL magazine for beginning to intermediate hams and the podcast supplements an issue's contents. Listen to the program and learn about Winlink Global Radio Email at the link below:

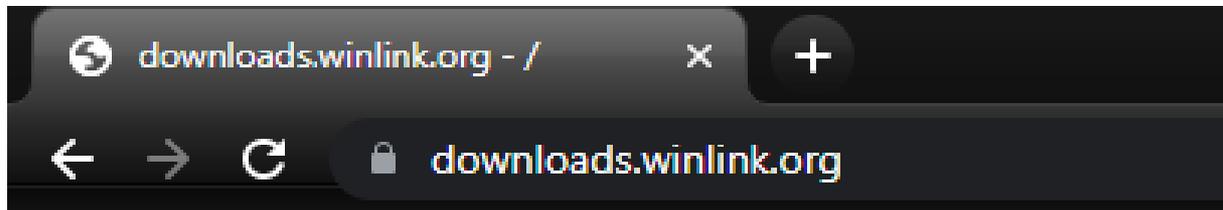
[ARRL's On The Air Episode 20](#)

Fast Info...

- Support Winlink: [Register](#) your program
- **Lost Registration Key?** [Log in](#). It's on your account page.
- Callsign change? [What to do. How to do it.](#)
- Which bands are open? [Propagation Map](#)
- [HTML Forms and Forms not in the Express Standard Library](#)
- No internet? [Winlink Hybrid Network](#)
- [Become a Winlink Gateway Sysop](#)

Downloading Winlink Express

- Click on User Programs



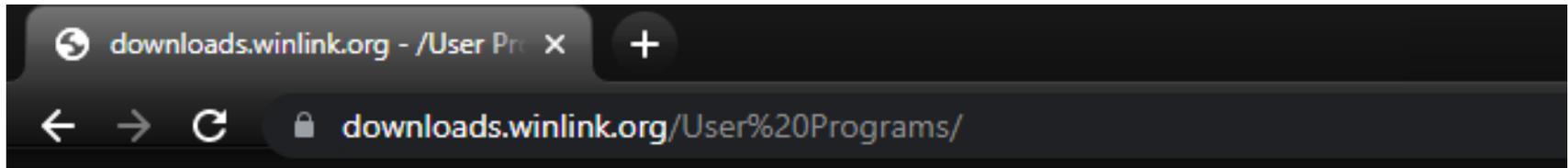
downloads.winlink.org - /

9/7/2021 11:58 AM	<dir> Sysop Programs
7/18/2021 11:41 AM	<dir> User Programs



Downloading Winlink Express

- Look for the latest version of Winlink Express. It will have a name like:
 - Winlink Express install x-y-z-0.zip
 - Where x-y-z is the version number
- Click on the filename to download



downloads.winlink.org - /User Programs/

[\[To Parent Directory\]](#)

5/21/2018	6:55 PM	626	Latest VARA Modem download site.rtf
7/19/2018	6:23 AM	1846835	Paclink_install_4-3-11-0.zip
5/21/2018	6:55 PM	1132	README_Software_Install_Instructions.txt
11/20/2020	9:22 AM	847697	RMS_Link_Test_install_2-0-24-0.zip
5/21/2018	6:55 PM	12176	SCS_PTC-IIIusb_and_end_of_PTC-IIusb_IIpro_IIex.pdf
7/18/2021	11:42 AM	22282156	Winlink_Express_install_1-5-39-0.zip



Installing Winlink Express

- On your local PC, double-click the zip file you just downloaded
- The zip file will contain a single executable file: Winlink_Express_install.exe

Name	Type	Compressed size	Password ...	Size	Ratio	Date modified
Winlink_Express_install.exe	Application	21,760 KB	No	21,780 KB	1%	7/18/2021 1:39 PM

- Double-click on the exe file, you may see this warning:



- It is safe to continue, so click on More info and then “Run anyway”

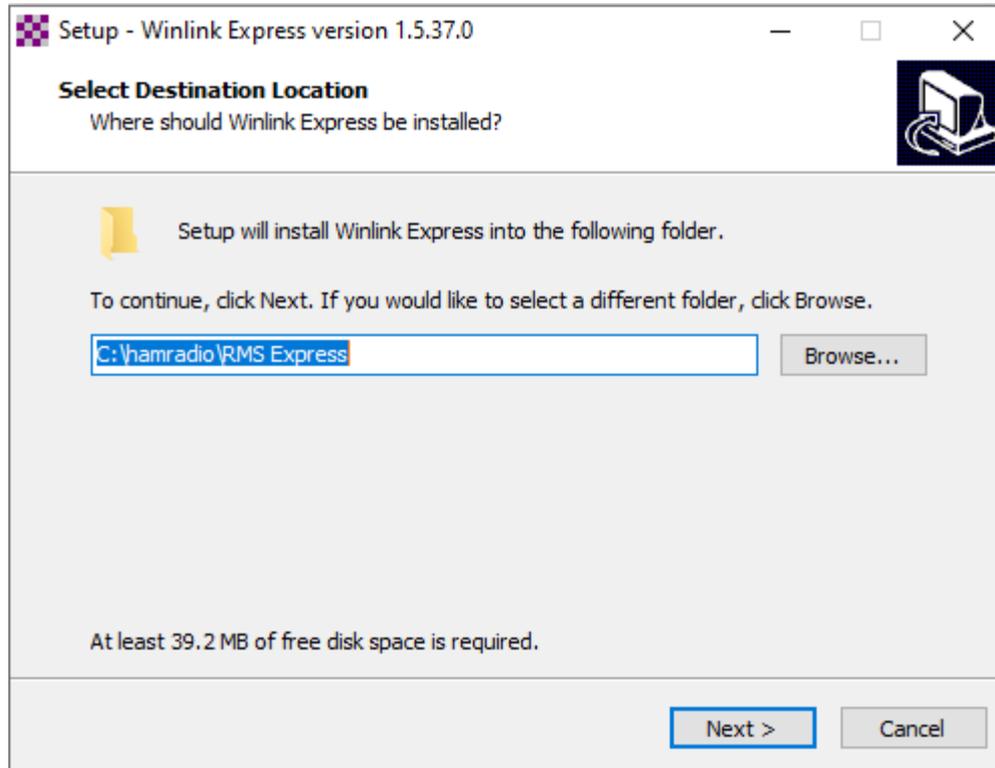
Installing Winlink Express

- You can safely click on “Run anyway”



Installing Winlink Express

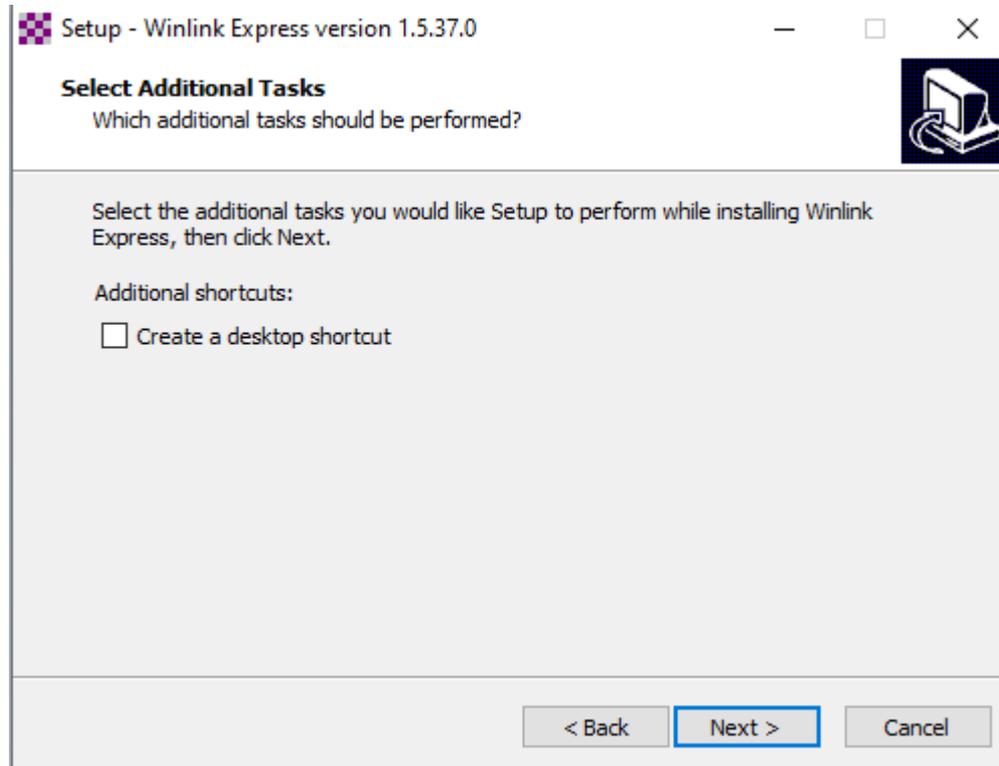
- You should now get a box that asks where you want to install Winlink Express:



- Enter a directory for installation and click on “Next”

Installing Winlink Express

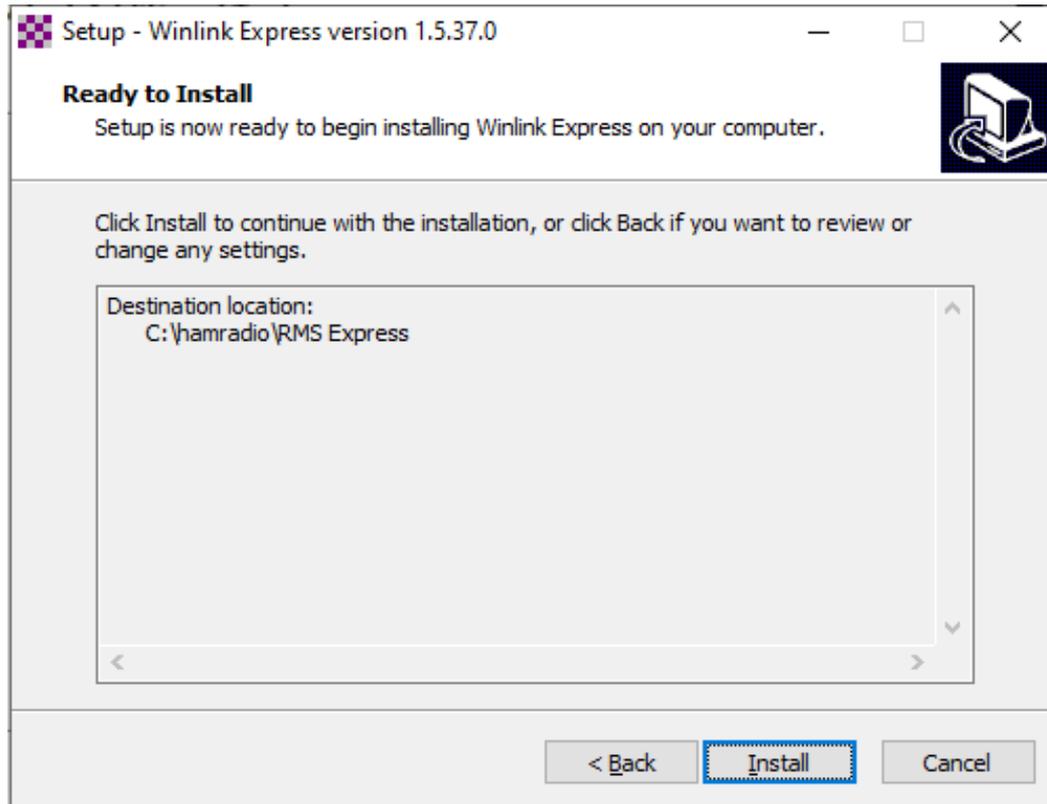
- Another box will pop up and ask if you want the install to create a Desktop shortcut



- If you want the installer to create a shortcut on your Desktop, click the box, then click “Next”

Installing Winlink Express

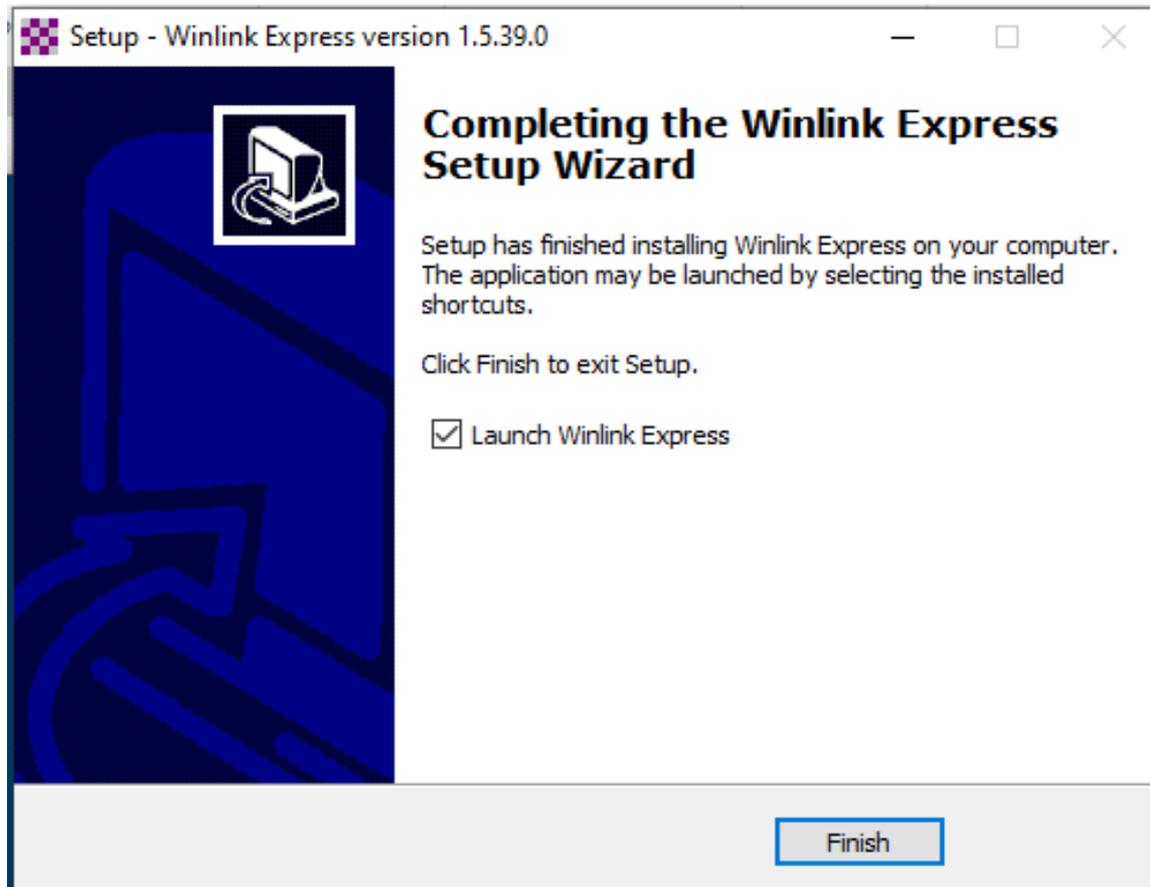
- A pop up box will ask you to confirm the installation location



- If everything looks good, click “Install” to continue

Installing Winlink Express

- A final pop up box will ask you to Finish the installation and launch Winlink Express



Installing Winlink Express

- During the installation you may be prompted to install / update Microsoft .Net. Click Yes to install.
- If all went well, you should now have Winlink Express installed on your computer
- Go ahead and launch Winlink Express

Using Winlink Express for the First Time

- It is recommended that you register with Winlink (\$24), but it is not required
- The fee is tax deductible
- It is a one-time fee and never expires
- The registration fee helps offset the hosting costs
- If you choose not to register, you will get a pop-up every time you use Winlink Express reminding you to register
- To register, follow this link: <https://arsfi.org/express.aspx>

Using Winlink Express for the First Time

The image shows the Winlink Express software interface. The main window is titled "Winlink Express" and has a menu bar with "Settings", "Message", "Attachments", "Move To:", "Delete", "Open Session:", and "Logs". Below the menu bar is a toolbar with various icons. The main area is divided into "System Folders" (Inbox, Read Items, Outbox, Sent Items, Saved Items, Deleted Items, Drafts), "Personal Folders", and "Global Folders". A table with columns "Date/Time" and "Message ID" is visible. Overlaid on this is the "Winlink Express Properties" dialog box, which is titled "Winlink Express Properties".

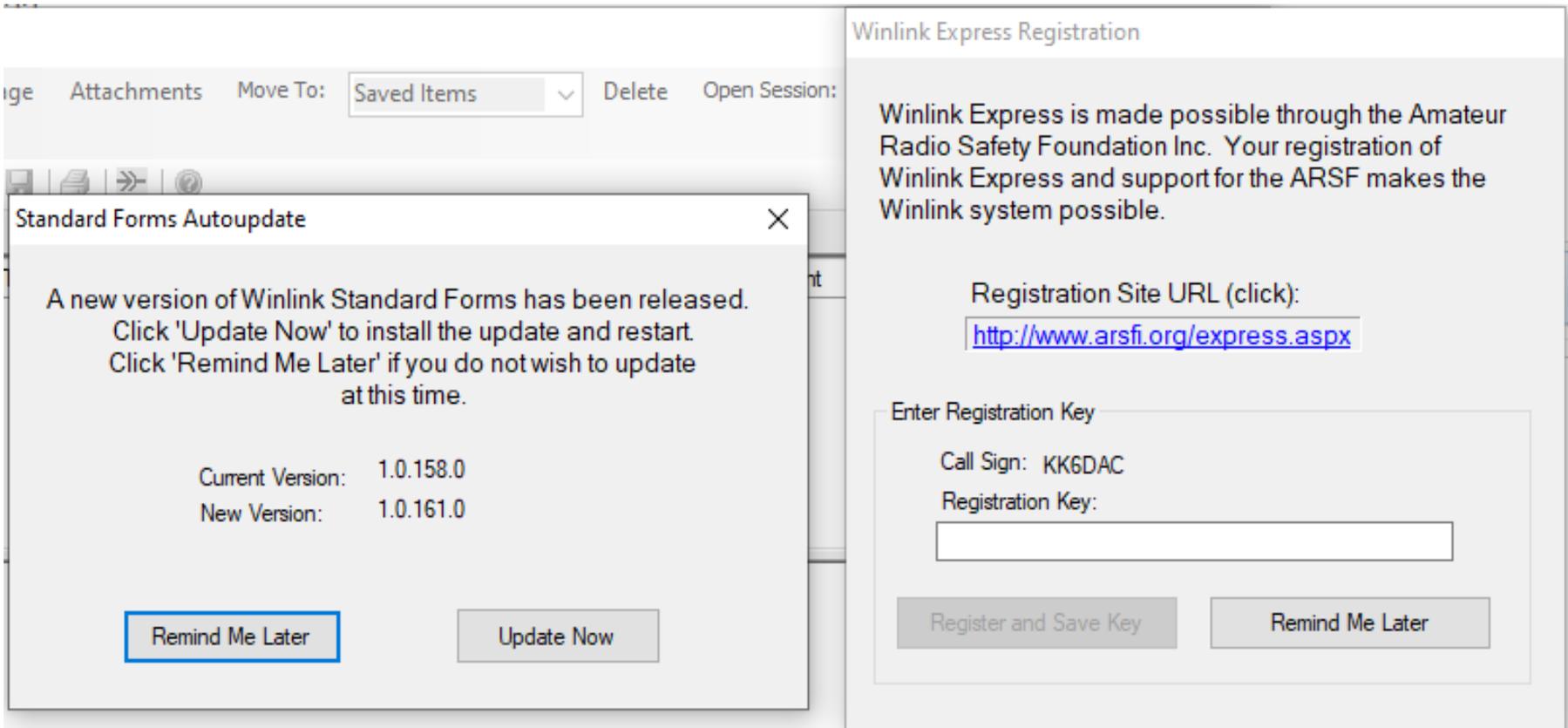
The "Winlink Express Properties" dialog box has the following sections:

- Call Signs:** Includes fields for "My Callsign:", "My Password:" (with a note "(Case sensitive)"), and "Callsign suffix (optional):" (with a note "(Used for country code)"). There is a "Show password" checkbox and a "Password recovery e-mail:" field (with a note "(Non-Winlink e-mail address where lost password will be sent when requested)"). Buttons for "Remove Callsign" and "Request password be sent to recovery e-mail" are present.
- Auxiliary Callsigns and Tactical Addresses:** A list box with "Add Entry", "Remove Entry", and "Edit Entry" buttons.
- My Grid Square:** A text field and a "Lat/Lon to Grid Square" button.
- Winlink Express registration key:** A text field.
- Service Codes:** A text field containing "PUBLIC" and instructions: "(Use PUBLIC for ham call signs. Separate multiple service codes by spaces.) If you change service codes, you must update the list of channels."
- Contact Information (Optional):** Fields for "Name:", "Street address 1:", "Street address 2:", "City:", "State/Province:", "Country:", "Postal code:", "Web Site URL (optional):", "Phone number:", and "Non-Winlink e-mail:".
- Additional information (optional):** A text area.
- Recalculate HF path quality if SFI changes more than:** A spinner box set to "30".
- Keep logs for:** A spinner box set to "2" weeks.
- Keep deleted messages for:** A spinner box set to "30" days.
- Checkboxes:**
 - Display list of pending incoming messages prior to download
 - Warn about connections to stations holding messages
 - Allow diagnostic information to be sent to the Winlink Development Team
 - Automatically install field-test (beta) versions of Winlink Express

Buttons for "Update" and "Cancel" are at the bottom of the dialog box.

Using Winlink Express for the First Time

- Go ahead and click on Update Now to get the latest updates
- If you've registered, enter your registration key. Otherwise click on Remind Me Later



Using Winlink Express for the First Time

Winlink Express Properties

Call Signs

My Callsign: My Password:
(Case sensitive) Show password

Callsign suffix (optional): (Used for country code)

E-mail:
Address where lost password will be sent when requested:
 Request password be sent to recovery e-mail address

Contact Information (Optional)

Name:
Street address 1:
Street address 2:
City:
State/Province:
Country:
Postal code:
Web Site URL (optional):
6 character Grid square:
Non-Winlink e-mail:

Auxiliary Callsigns and Tactical Addresses

My Grid Square:

Winlink Express registration key:

Service Codes

(Use PUBLIC for ham call signs. Separate multiple codes with spaces. For non-ham codes, you must update the code.)

Recalculate HF path quality if SFI changes more than:
Keep logs for weeks. Keep deleted messages for days.

- Display list of pending incoming messages prior to download
- Warn about connections to stations holding messages
- Allow diagnostic information to be sent to the Winlink Development Team
- Automatically install field-test (beta) versions of Winlink Express

Callouts:

- Enter your callsign (points to My Callsign)
- Create a password (points to My Password)
- Enter your grid square. Hint: You can find your grid square on <http://qrz.com> (points to 6 character Grid square)
- Click Update (points to Update button)

Using Winlink Express for the First Time

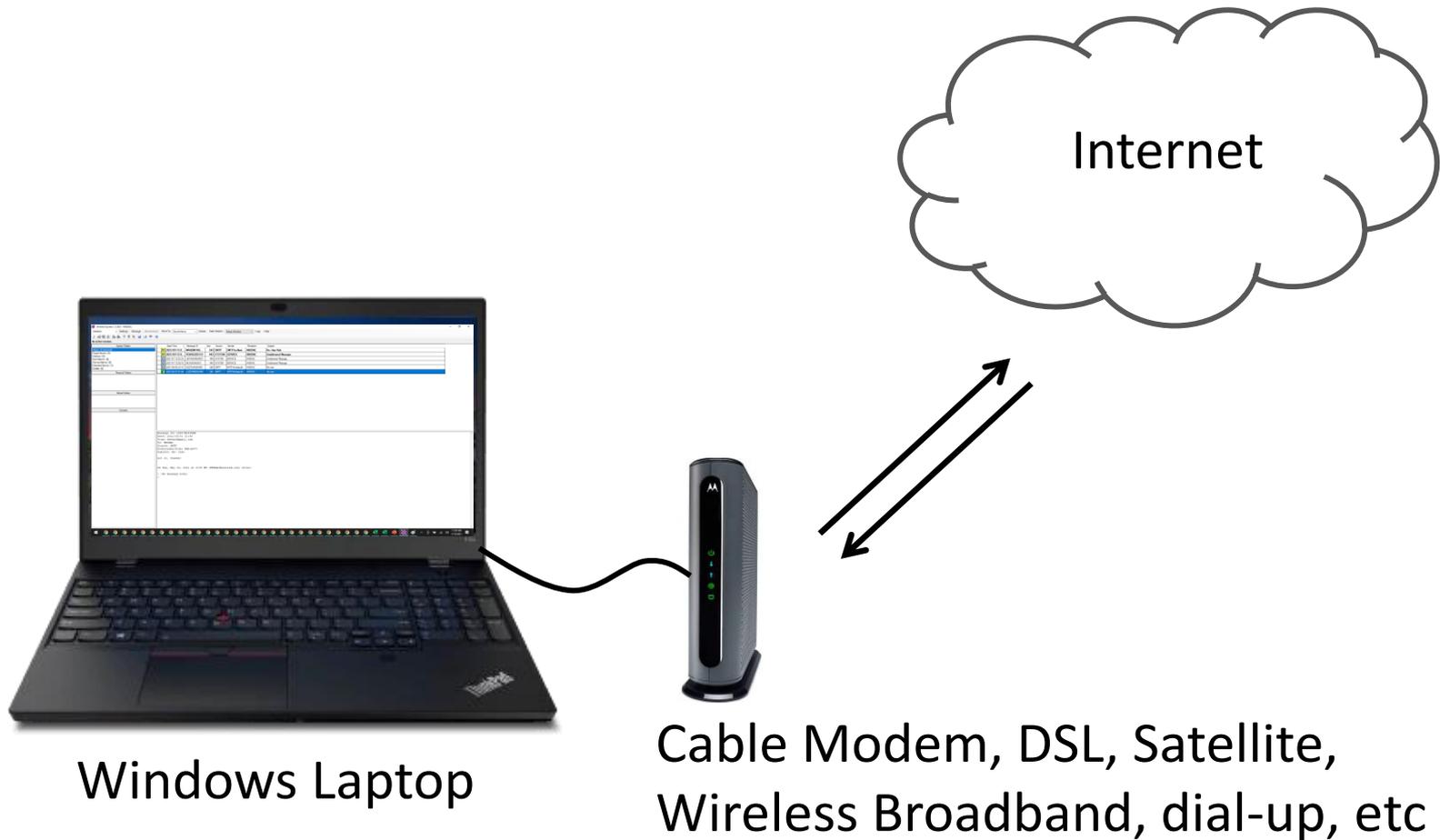
- To finalize your setup, you must make at least one connection to a Winlink server

Using Winlink Express for the First Time

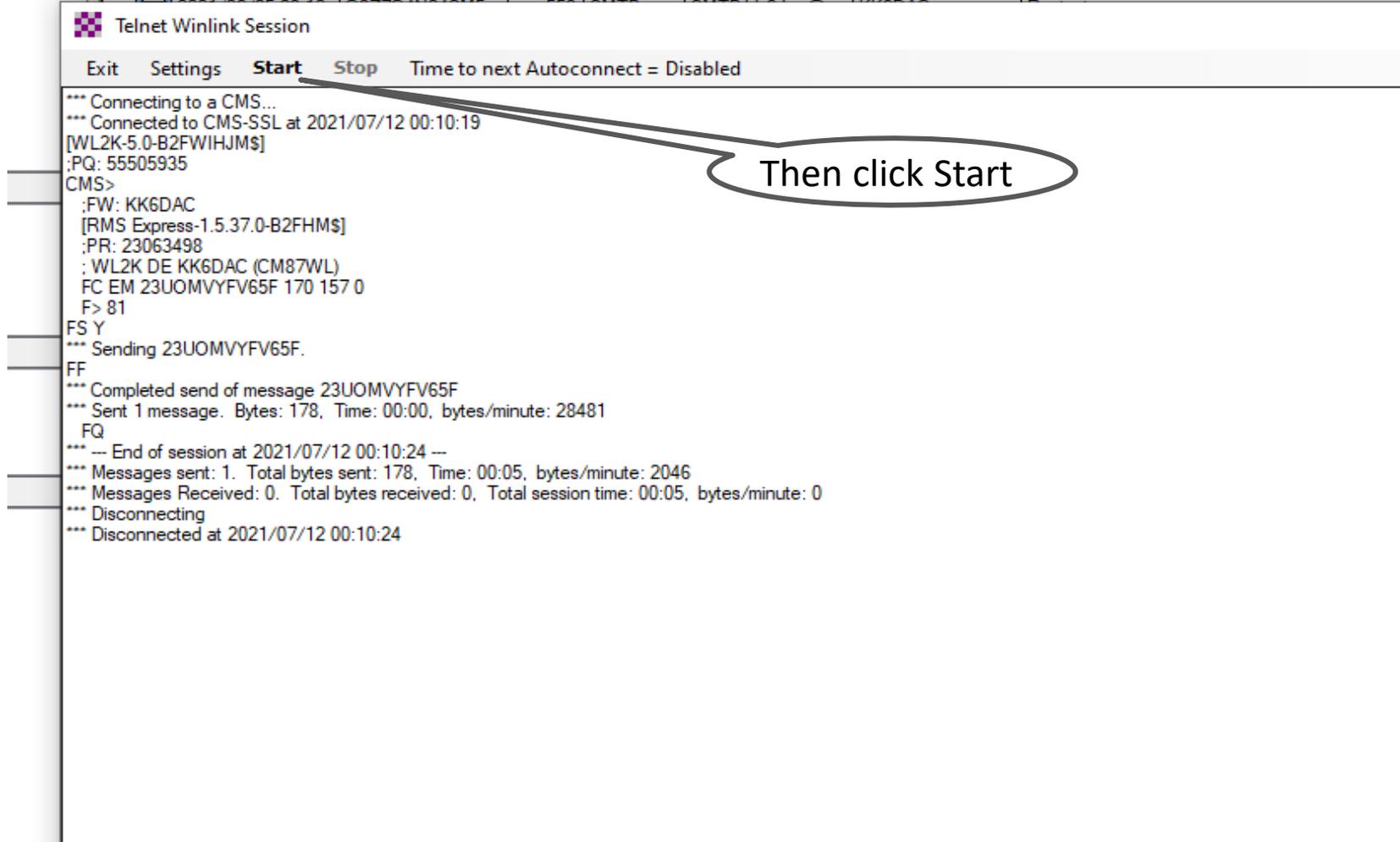
- That's it. You are now setup and ready to use Winlink Express

Typical Winlink Express Using Telnet Mode

- All you need is an Internet connection



Making Your First Connection



Using Winlink Express for the First Time

- Congratulations! You are now an official Winlink User
- Now, let's send a message

Sending Your First Message

Winlink Express 1.5.38.0 - KK6DAC

The screenshot shows the Winlink Express interface. The 'Message' menu is open, displaying various options. A callout bubble points to the 'New Message...' option. The interface includes a top bar with 'KK6DAC', 'Settings', and 'Message' tabs. The left sidebar shows folders like 'Inbox (2 unread)', 'Read Items (0)', 'Outbox (1)', 'Sent Items (8)', 'Saved Items (0)', 'Deleted Items (0)', and 'Drafts (0)'. The main area shows a list of messages with columns for ID, size, and type. A status bar at the bottom displays 'Message ID: LS287M883URW'.

Message ID	Size	Type
EZIDIT21	443	SYS
GKK5H0P2	446	SYS
KS4GX51	448	SYS
4N24SM5	559	SMT
M883URW	242	SMT

Click on Message, then
New Message...

Sending Your First Message

Enter a new message

Close Select Template Attachments Post to Outbox Spell Check Save in Drafts

From: KK6DAC Send as: Winlink Message Request message receipt Set Defaults

To: KK6DAC:

Cc:

Subject: Hello

Attach:

This is my first Winlink Message

Feel free to send me a Winlink message

Sending Your First Message

Enter a new message

Close Select Template Attachments Post to Outbox Spell Check Save in Drafts

From: KK6DAC Send as: Winlink Mess... Request message receipt Set Defaults

To: KK6DAC;

Cc:

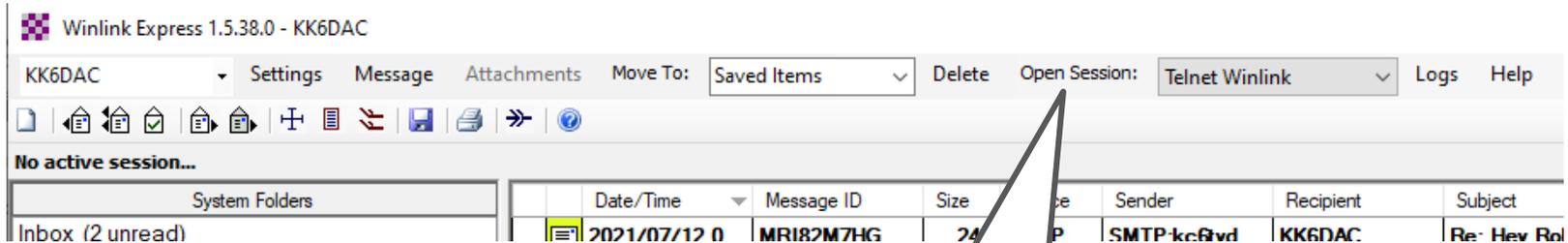
Subject: Hello

Attach:

This is my first Winlink Message

When you've finished composing, Click on Post to Outbox

Sending Your First Message

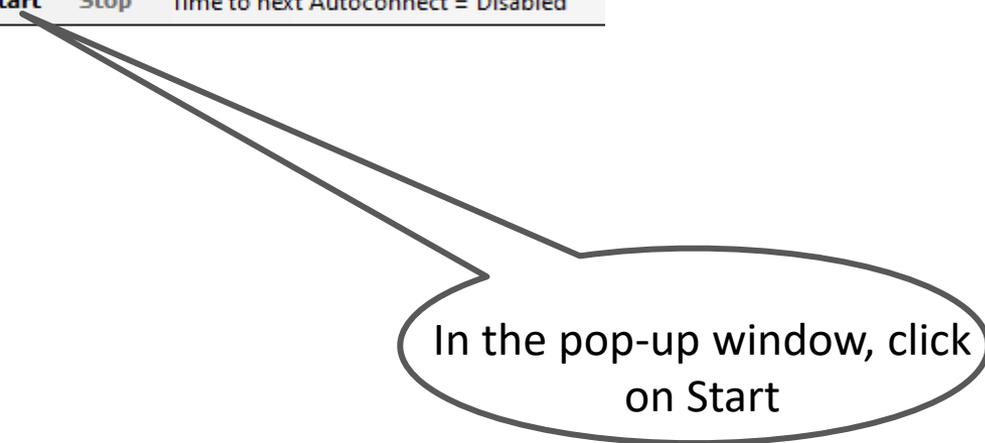


To send the message, click on Open Session

Sending Your First Message

 Telnet Winlink Session

Exit Settings **Start** Stop Time to next Autoconnect = Disabled



In the pop-up window, click
on Start

Sending Your First Message

```
Telnet Winlink Session
Exit  Settings  Start  Stop  Time to next Autoconnect = Disabled
*** Connecting to a CMS...
*** Connected to CMS-SSL at 2021/07/12 23:30:01
[WL2K-5.0-B2FWIHJM$]
:PQ: 03964689
CMS>
:FW: KK6DAC
[RMS Express-1.5.38.0-B2FHM$]
:PR: 97635800
:WL2K DE KK6DAC (CM87WL)
FC EM I59XTCE4W024 157 141 0
F> C9
FS Y
*** Sending I59XTCE4W024.
FF
*** Completed send of message I59XTCE4W024
*** Sent 1 message. Bytes: 155, Time: 00:00, bytes/minute: 15663
FQ
*** -- End of session at 2021/07/12 23:30:07
*** Messages sent: 1. Total bytes sent: 155, Time: 00:05, bytes/minute: 1620
*** Messages Received: 0. Total bytes received: 0, Total session time: 00:05, bytes/minute: 0
*** Disconnecting
*** Disconnected at 2021/07/12 23:30:07
```

If all goes well, you've sent your first Winlink message

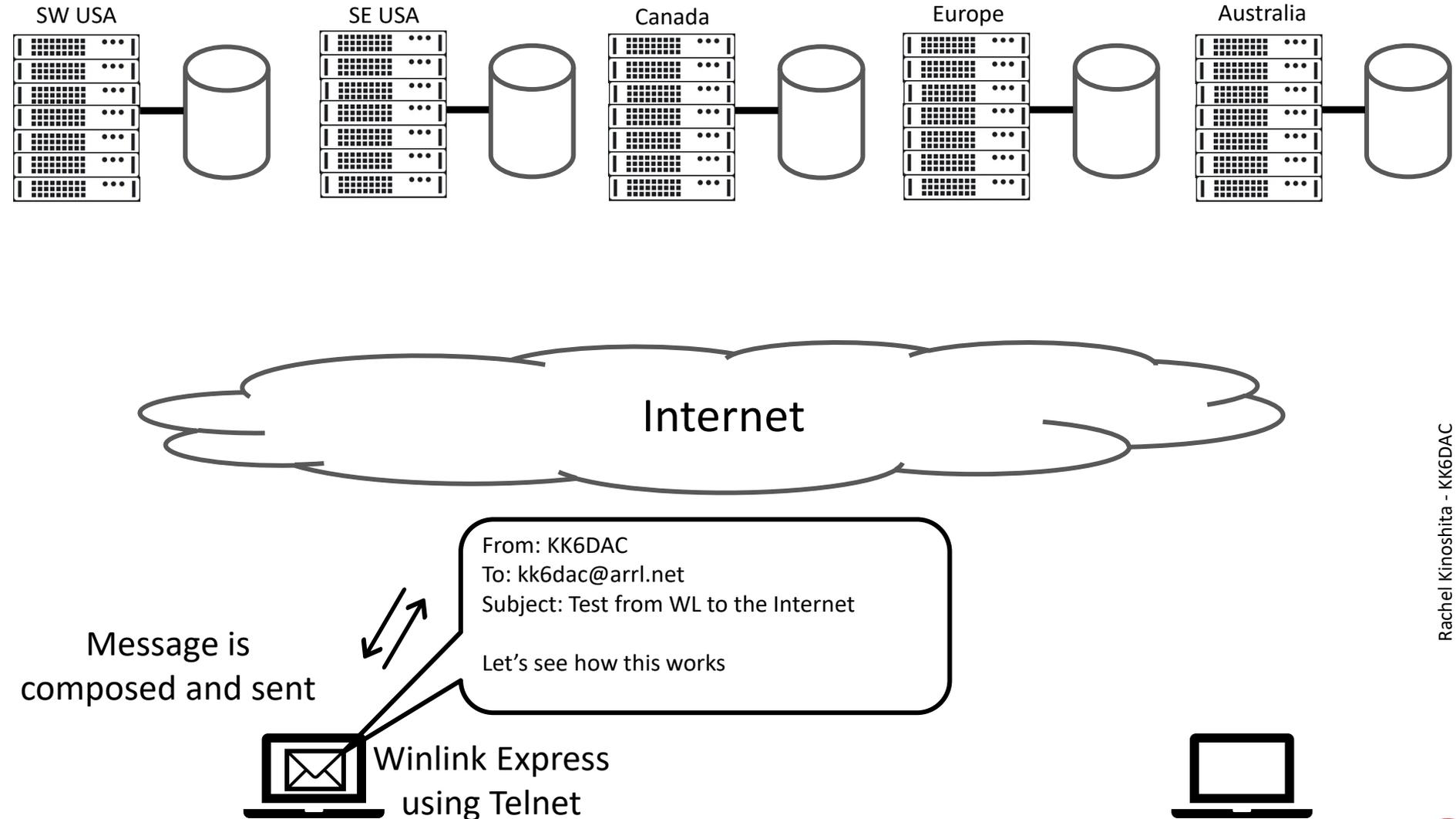
Sending Your First Message

```
Telnet Winlink Session
Exit  Settings  Start  Stop  Time to next Autoconnect = Disabled
*** Connecting to CMS...
*** Connected to CMS-S... 2021/07/12 23:30:01
[WL2K-5.0-B2FWIHJM$]
:PQ: 03964689
CMS>
:FW: KK6DAC
[RMS Express-1.5.38.0-B2FHM$]
:PR: 97635800
:WL2K DE KK6DAC (CM87WL)
FC EM I59XTCE4W024 157 141 0
F> C9
FS Y
*** Sending I59XTCE4W024.
FF
*** Completed send of message I59XTCE4W024
*** Sent 1 message. Bytes: 155, Time: 00:00, bytes/minute: 15663
FQ
*** -- End of session at 2021/07/12 23:30:07 --
*** Messages sent: 1. Total bytes sent: 155, Time: 00:05, bytes/minute: 1620
*** Messages Received: 0. Total bytes received: 0, Total session time: 00:05, bytes/minute: 0
*** Disconnecting
*** Disconnected at 2021/07/12 23:30:07
```

Click Exit to close the Session window

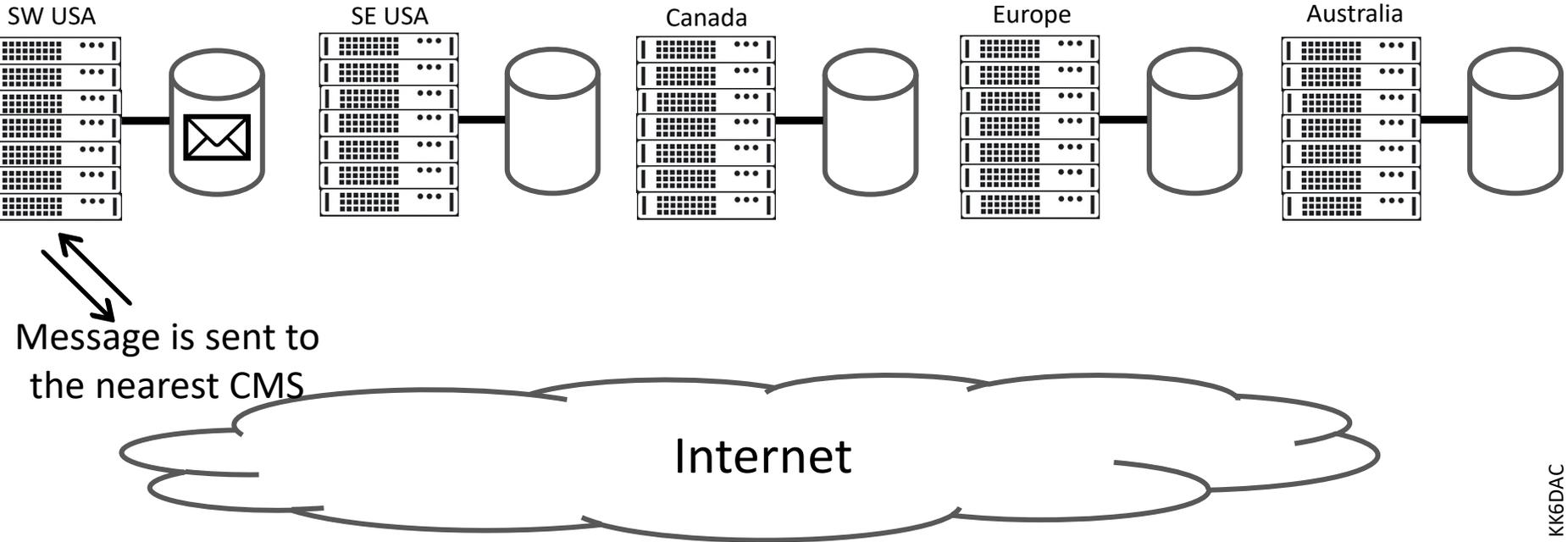
Sending from Winlink to Internet Email

5 Common Message Servers running on Amazon AWS worldwide



Sending from Winlink to Internet Email

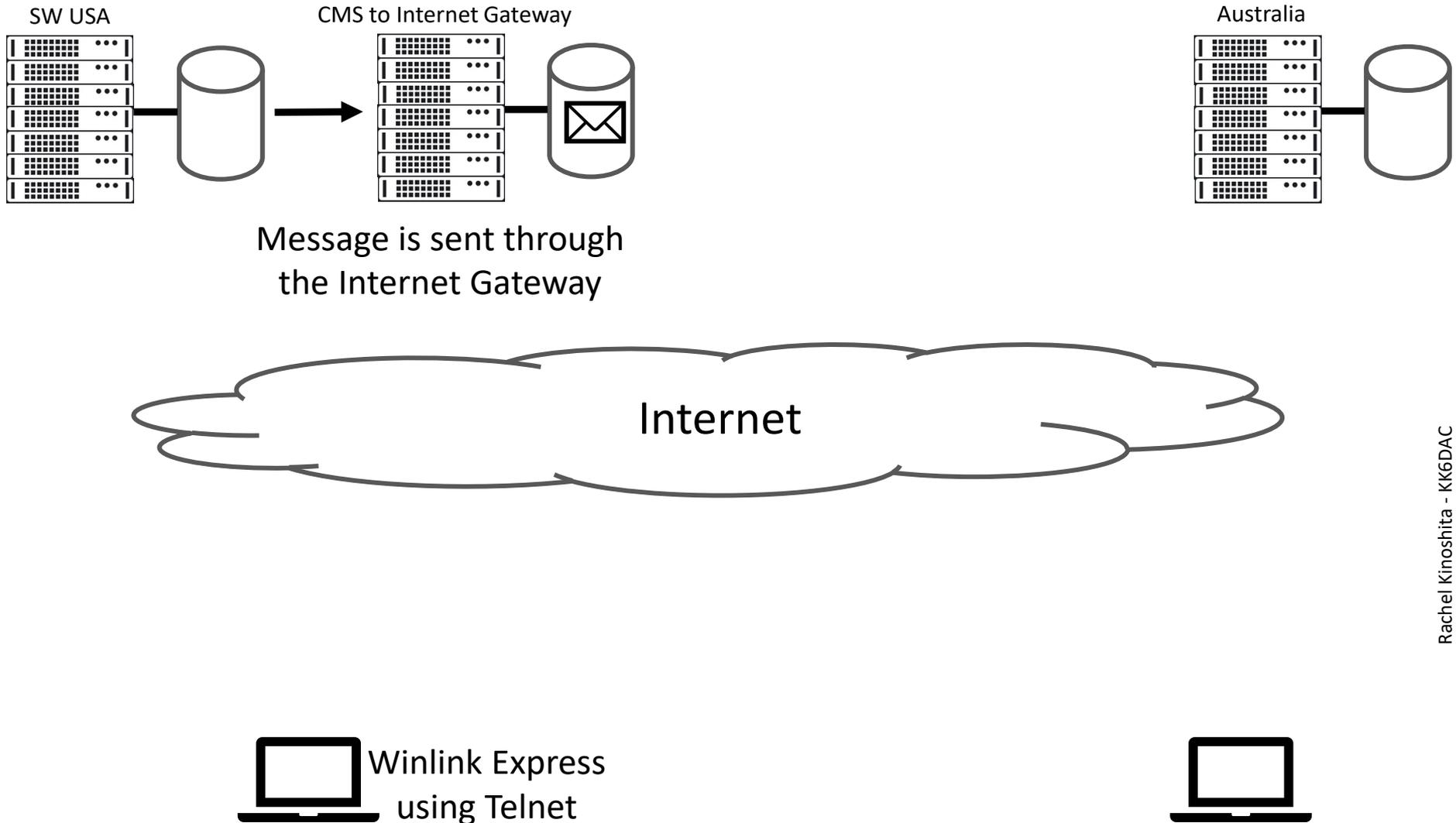
5 Common Message Servers running on Amazon AWS worldwide



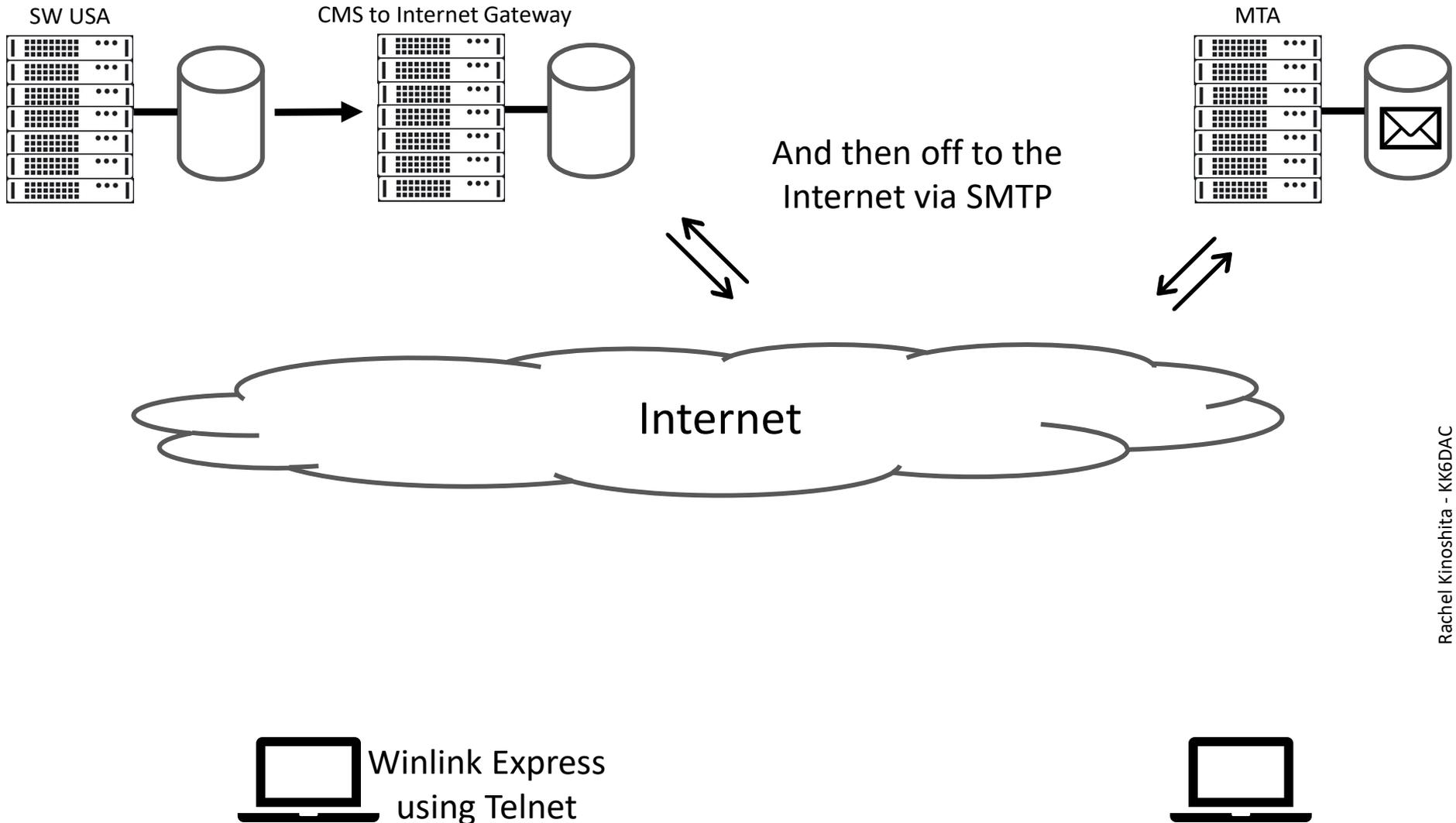
 Winlink Express
using Telnet



Sending from Winlink to Internet Email



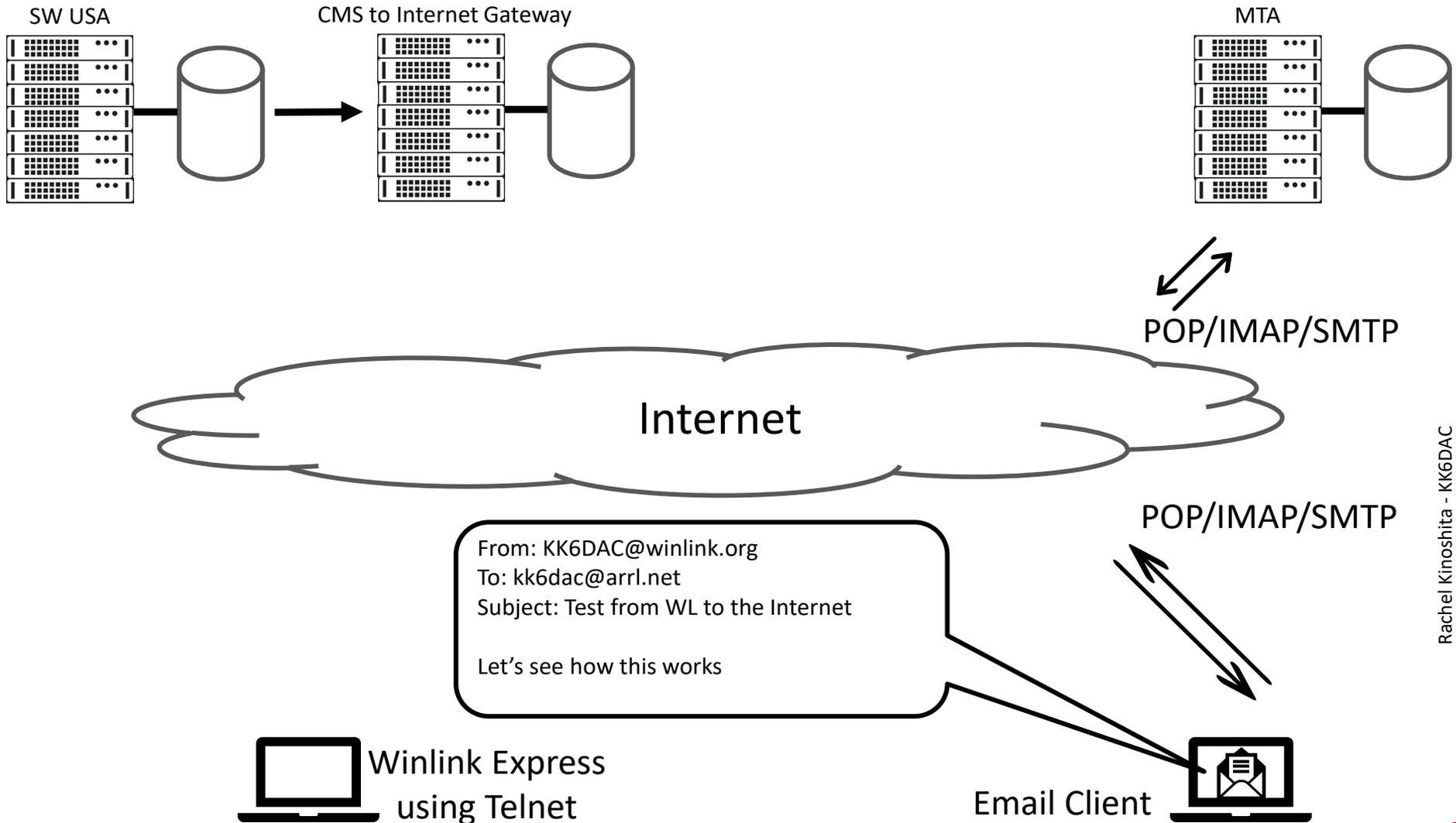
Sending from Winlink to Internet Email



 Winlink Express
using Telnet



Sending from Winlink to Internet Email



Sending from Winlink to SMS / MMS

- To send SMS / MMS use the carrier provided email to xMS gateway (see addresses below)
- You need to know the carrier the intended recipient uses
- Use the recipients 10 digit phone number with NO spaces, dashes, decimal points, etc. DO NOT pre-pend the number with a “1”. For example: 4155551234@vtext.com to send to VZW
- Not all carriers allow an email to xMS message to be replied to

Carrier	SMS	MMS
AT&T	@txt.att.net	@mms.att.net
Boost Mobile	@myboostmobile.com	
Cricket Wireless	@txt.cricketwireless.net	@mms.cricketwireless.net
FirstNet	@txt.firstnet-mail.com	@mms.firstnet-mail.com
Sprint	@messaging.sprintpcs.com	@pm.sprint.com
T-Mobile	@tmomail.net	
Verizon	@vtext.com	@vzwpix.com

Sending from Winlink to SMS / MMS

Enter a new message

Close Select Template Attachments Post to Outbox Spell Check Save in Drafts

From: KK6DAC Send as: Winlink Message Request message receipt Set Defaults

To: 4155551212@vtext.com;

Cc:

Subject: Example sending from Winlink to VZW S...

Attach:

Hello World

Follow the same steps from the previous example, but in the To: field, enter the phone number and domain for the recipients carrier

Using Winlink Forms

Enter a new message

Close Select Template Attachments Post to Outbox Spell Check Save in Drafts

From: KK6DAC Send as: Winlink Message Request message receipt Set Defaults

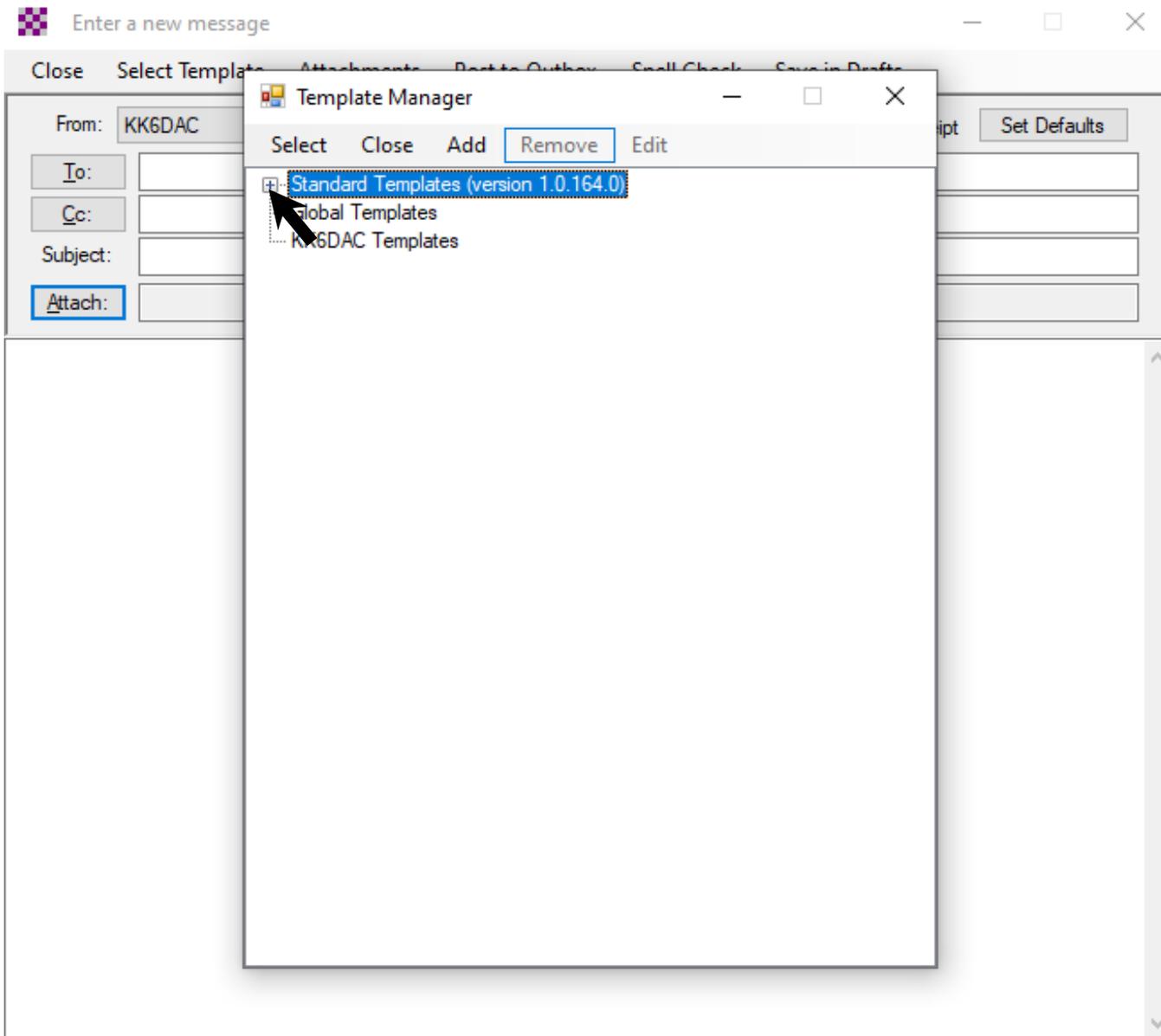
To:

Cc:

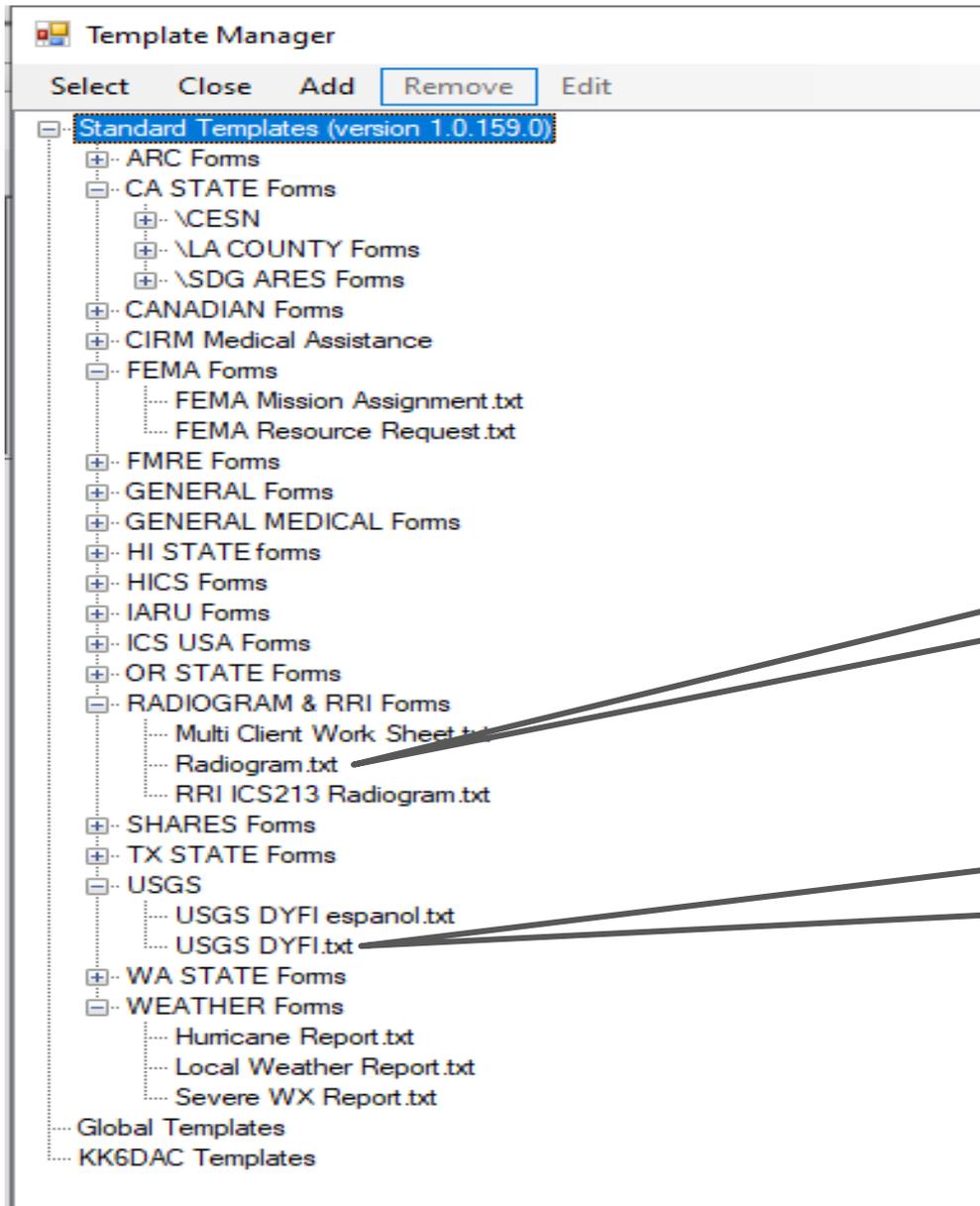
Subject:

Attach:

Using Winlink Forms



Using Winlink Forms



Radiogram

Earthquake "Did you feel it" form

“Did You Feel It” Form

Winlink Express 1.5.38.0 - KK6DAC

KK6DAC Settings Message Attachments Move To: Saved Items Delete Op

No active session...

System Folders

- Inbox (2 unread)
- Read Items (0)
- Outbox (1)
- Sent Items (8)
- Saved Items (0)
- Deleted Items (0)
- Drafts (0)

Personal Folders

Global Folders

Contacts

Message ID: LSZ87M883URW

Click on Message, then New Message...

EZIDIT21	443	SYS
GKK5H0P2	446	SYS
KS4GX51	448	SYS
4N24SM5	559	SMT
M883URW	242	SMT

Message ID: LSZ87M883URW

“Did You Feel It” Form

Enter a new message

Close Select Template Attachments Post to Outbox Spell Check Save in Drafts

From: KK6DAC Send as: Winlink Message Request message receipt Set Defaults

To:

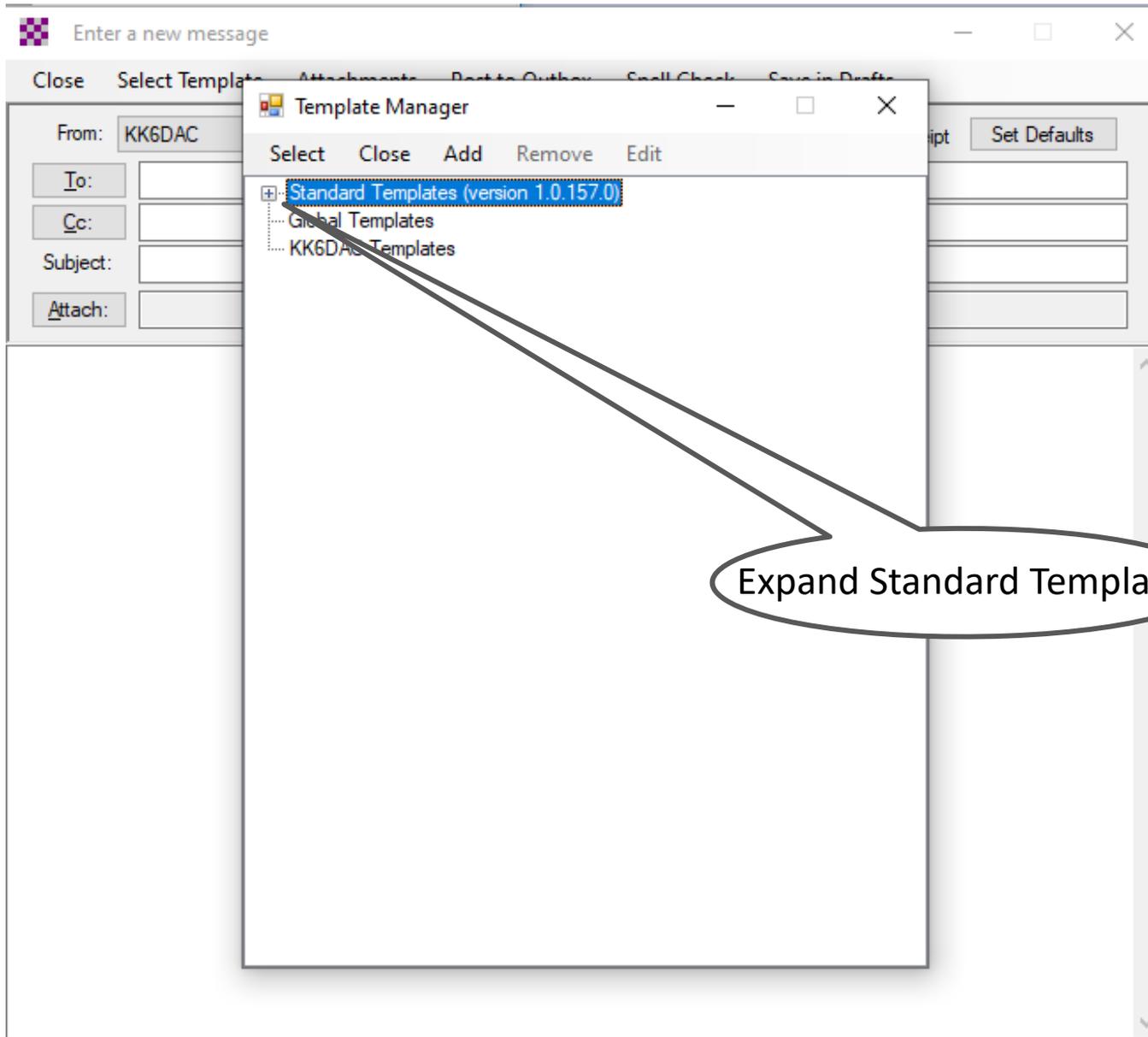
Cc:

Subject:

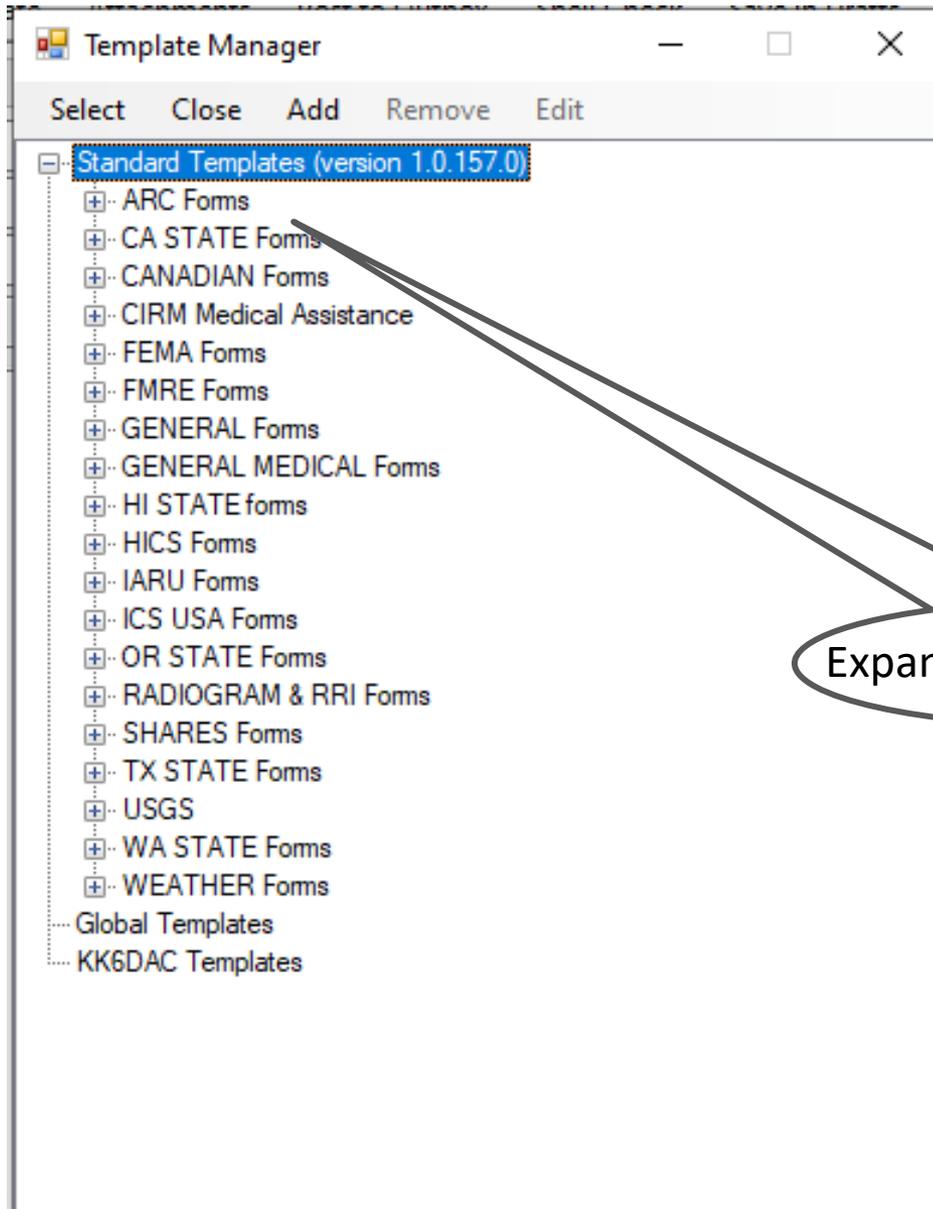
Attach:

Click on Select Template

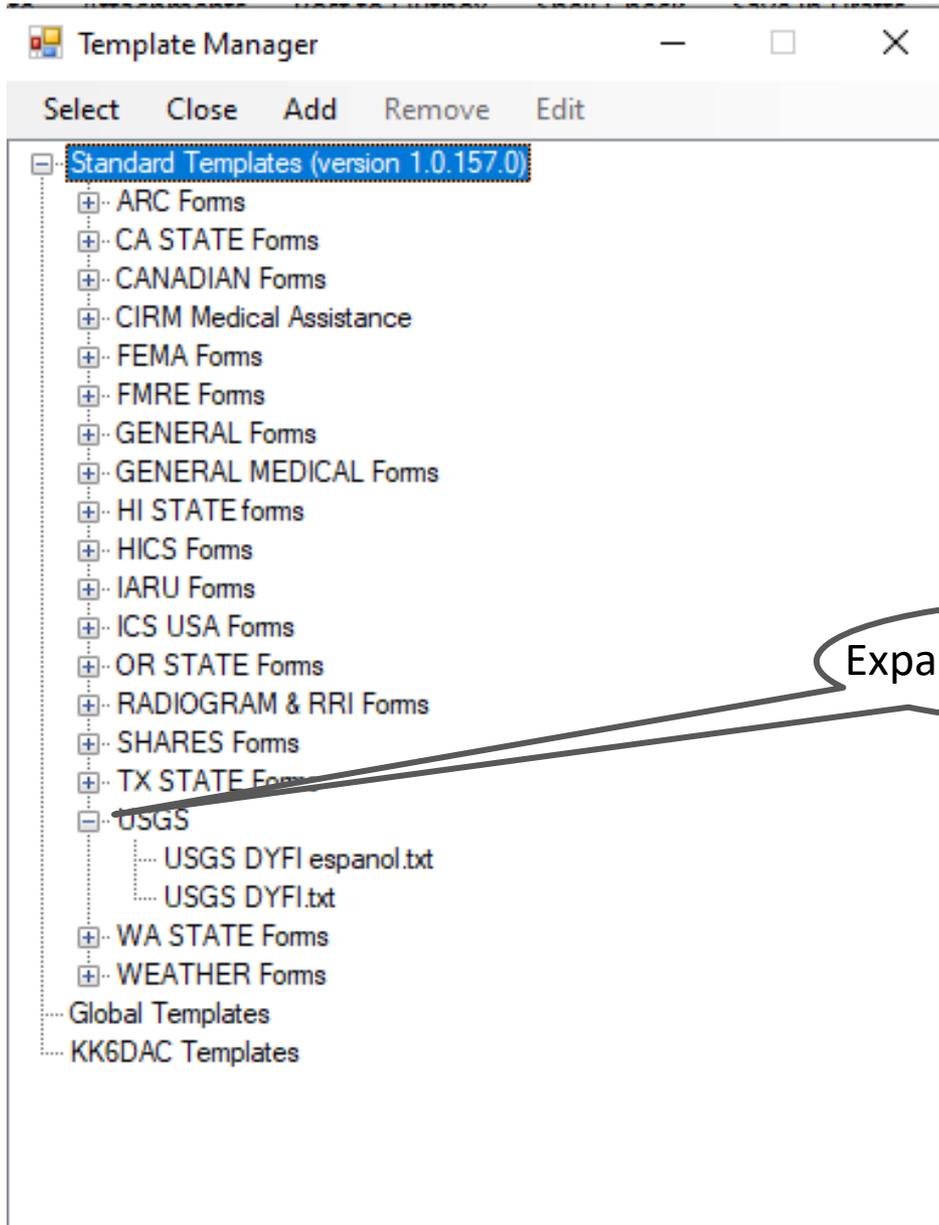
“Did You Feel It” Form



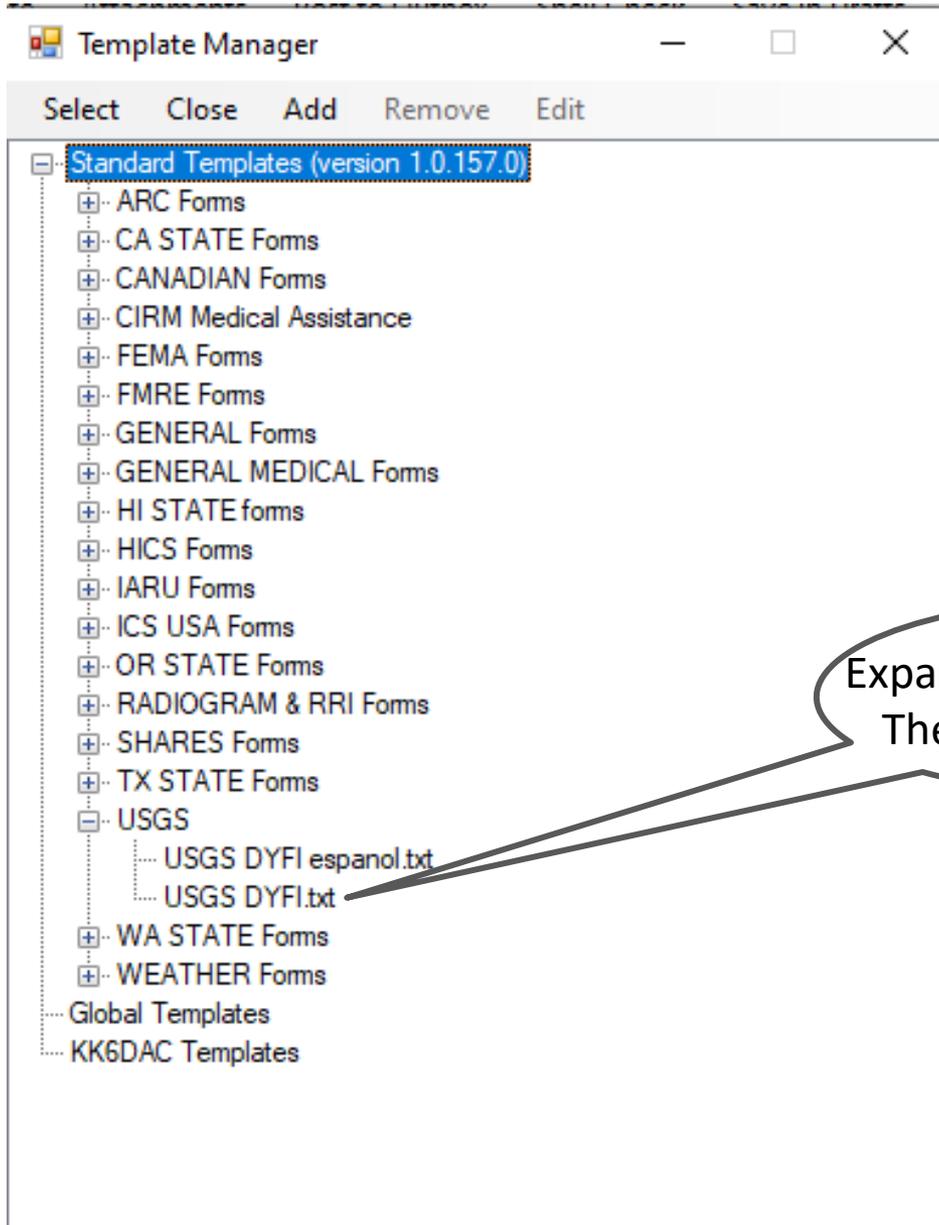
“Did You Feel It” Form



“Did You Feel It” Form



“Did You Feel It” Form



“Did You Feel It” Form

Fill in the form,
then click on
“Submit”

Earthquake: Did You Feel it?

Did You Feel It? (DYFI) collects information from people who felt an earthquake and helps create maps that show what people experienced and the extent of damage.

The USGS email is automatically filled when clicking SUBMIT below and the information is sent directly to the USGS via Winlink.

[Click here to go to the USGS Web Site if you have Internet.](#)

[What is DYFI & More](#)

>>>> This Earthquake report is an Exercise REAL EVENT

Did you feel it? (REQUIRED)

Yes No

Time of earthquake: (REQUIRED) Local Date and Time Format: 1/31/2020 09:15

Date: Time: [Click Date or Time Field to Modify](#)

(Opening this form inserts your current Date & Time, you may manually change by click in the field)

Your location - street address when the earthquake occurred: (REQUIRED)

<- Do not enter GPS coordinates here.

Optional GPS coordinates in the following format: 32.504892 -116.982466 LAT LON

If you have a Winlink Express connected GPS device, the LAT/LON in decimal degrees will be entered for you.

The remainder of this form is optional. If you indicated NO, then do not answer the questions below. If you indicated YES, then the answers below will help to create intensity info for the USGS.

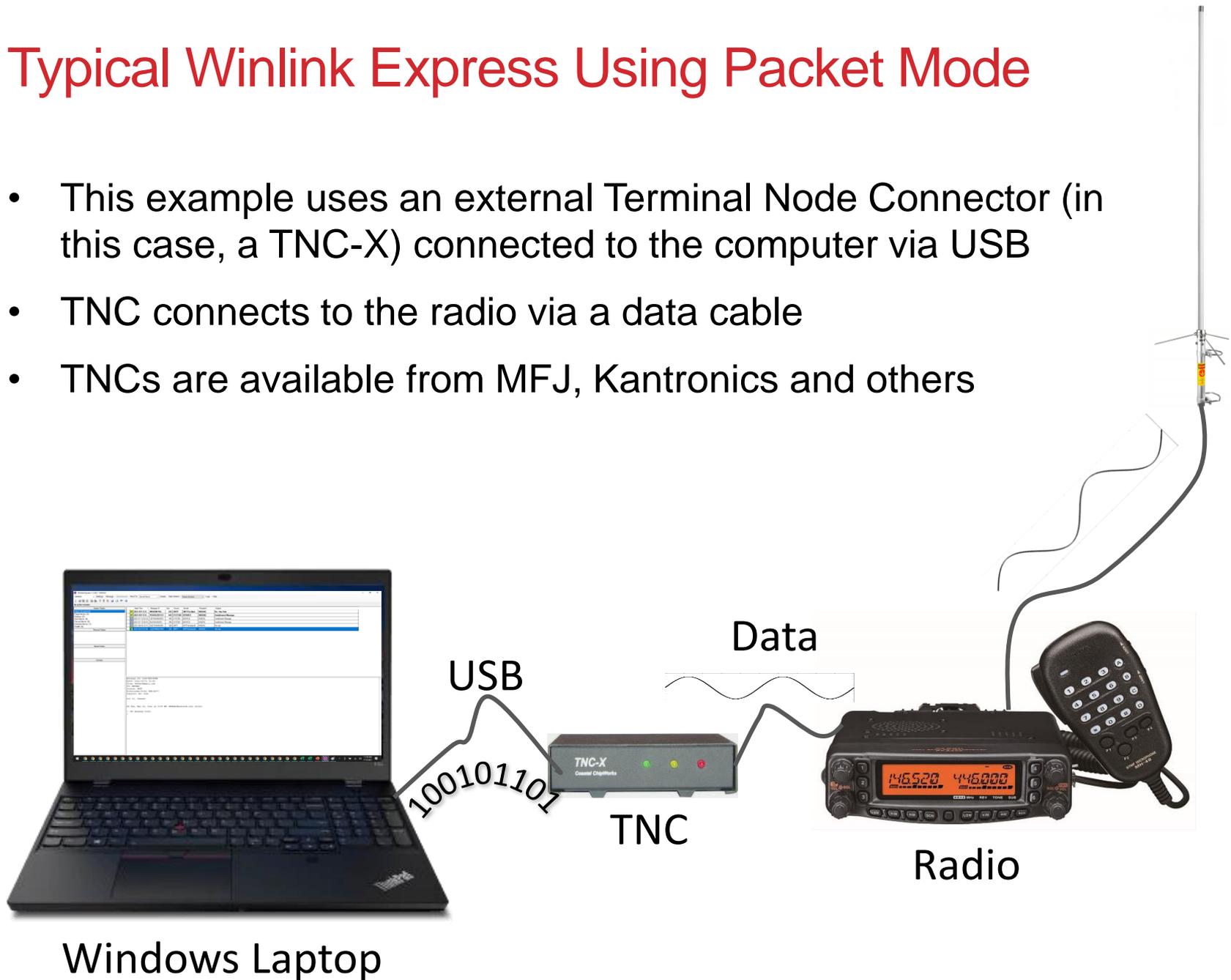
What was your situation during the earthquake?

Additional comments: *(Max 400 Characters)*

Ver 8.2 en

Typical Winlink Express Using Packet Mode

- This example uses an external Terminal Node Connector (in this case, a TNC-X) connected to the computer via USB
- TNC connects to the radio via a data cable
- TNCs are available from MFJ, Kantronics and others



Typical Winlink Express Using Packet Mode

- Computer is connected to the radio via a USB
- Kenwood TM-D710 has a built-in Terminal Node Controller (TNC), eliminating the need for an external TNC
- The Kenwood TH-D72 and TH-D74 HTs also have TNCs built-in



Windows Laptop

USB
100101101



Kenwood TM-D710ga Radio

Sending with Packet

- Sending using Winlink Packet is where things start to get a bit more complex
- Packet radio (ax.25) is derived from the older x.25 packet switched network protocol which was popular during the 1970s and 80s
- Packet uses a Terminal Node Controller (TNC). A TNC acts like a modem in the sense that it takes a digital signal from your computer and converts it to analog for sending over the air. It also takes analog systems received from over the air and converts those to digital
- A TNC can be either a hardware device or it can be emulated with software
- We will go into more details on TNCs in a future presentation

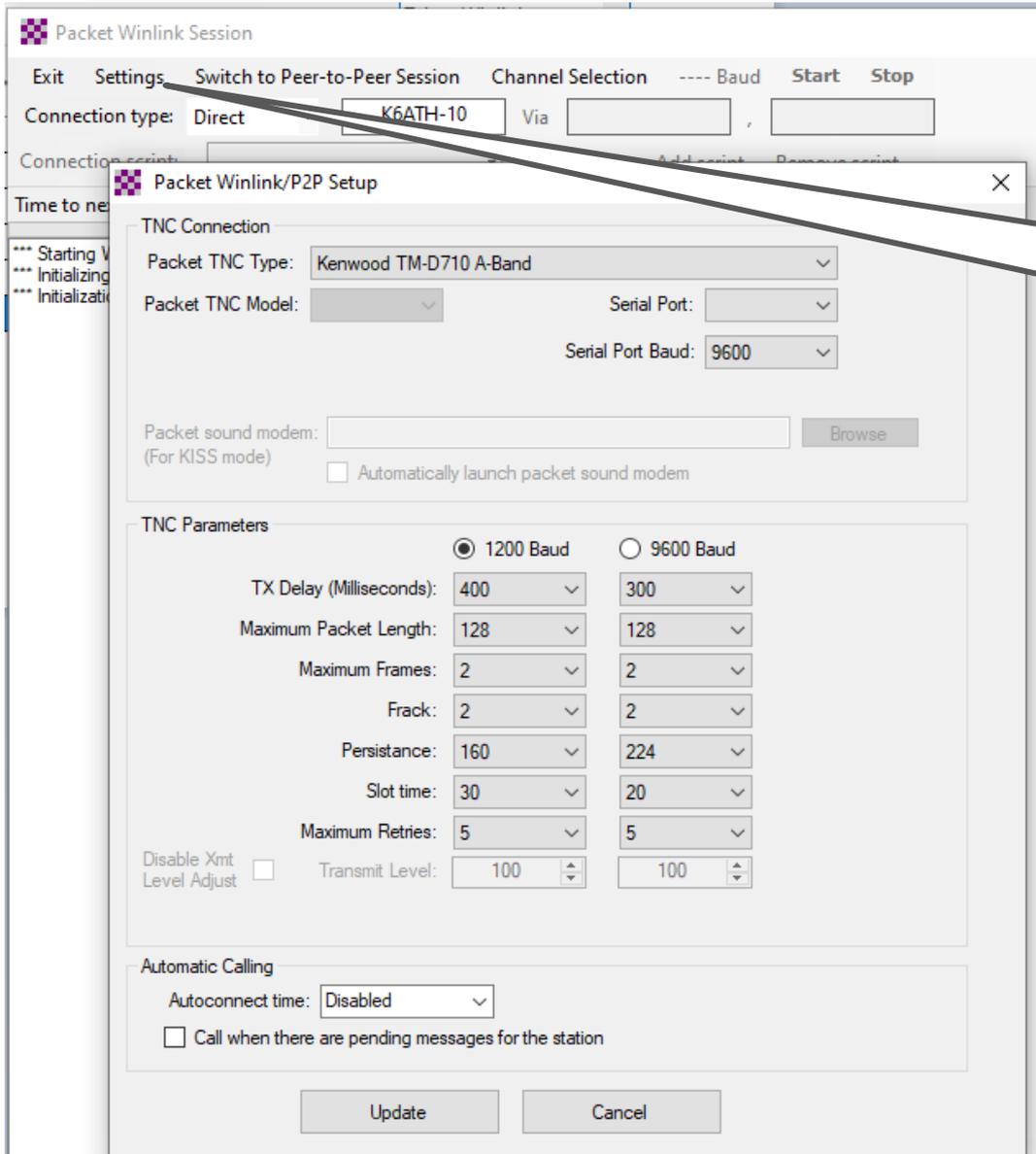
Sending with Packet

The screenshot shows the Winlink Express 1.5.38.0 - KK6DAC interface. The 'Open Session:' dropdown menu is open, displaying a list of session options. The 'Packet Winlink' option is highlighted in blue. A callout bubble points to this option with the text: 'Click on the dropdown next to Open Session: and select Packet Winlink'.

Date/Time	Message ID	Size	Source	Send	Subject
2021/07/12 0...	MRI82M7HG...	243	SMTP	MTI	
2021/07/12 0...	PO5VEZIDIT21	443	SYSTEM	SERV	Re: Hey F
2021/07/12 03:33	UOPAGKK5H0P2	446	SYSTEM	SERV	Undelivered
2021/07/12 00:10	84JX3KS4GX51	448	SYSTEM	SERV	Undelivered
2021/06/05 23:10	G8Z7G4N24SM5	559	SMTP		Re: test
2021/05/31 01:46	LSZ87M883URW	2	P	SMTP	Re: test

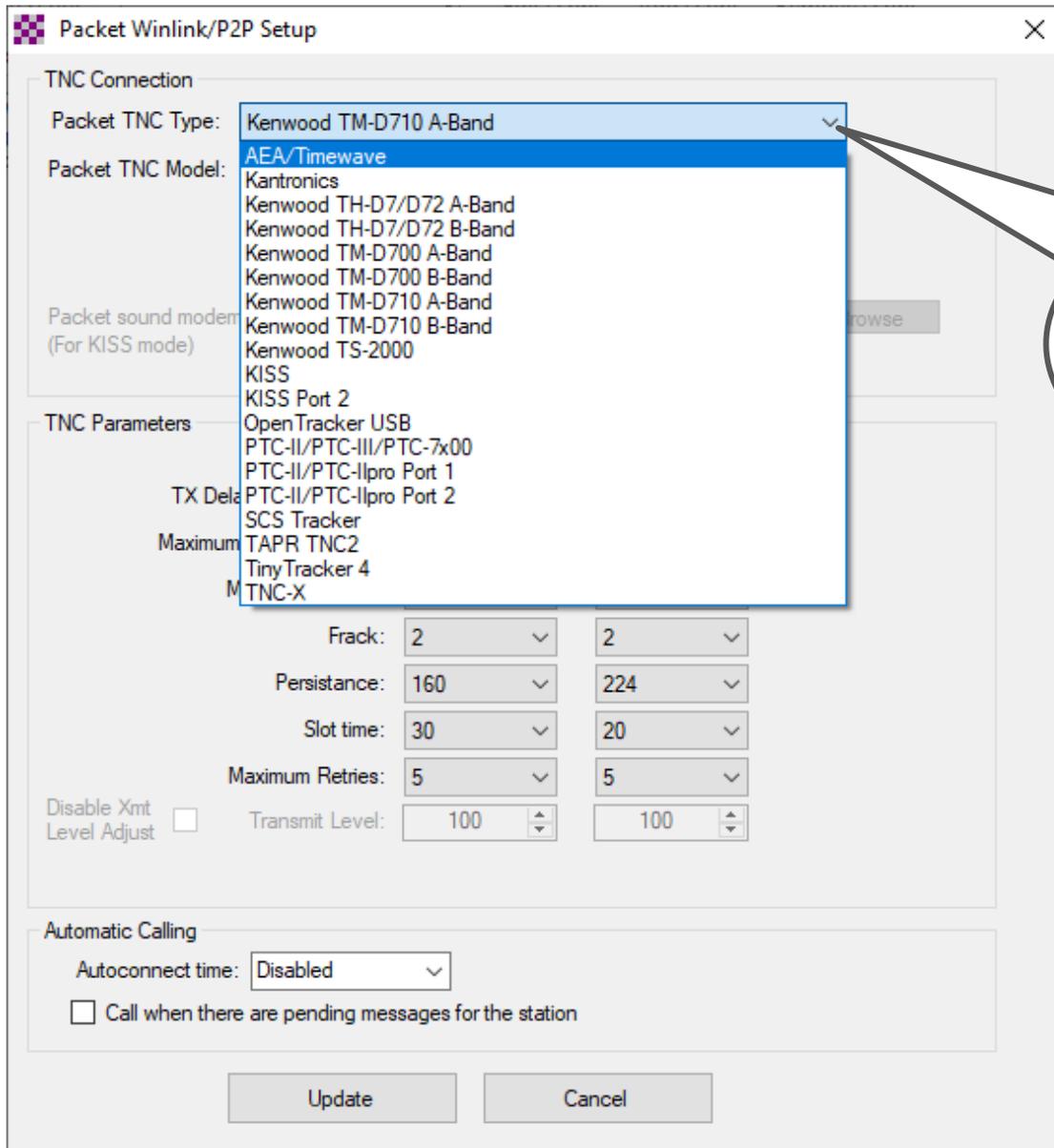
Click on the dropdown next to Open Session: and select Packet Winlink

Sending with Packet



When the Packet Winlink Session window opens, click on Settings

Sending with Packet

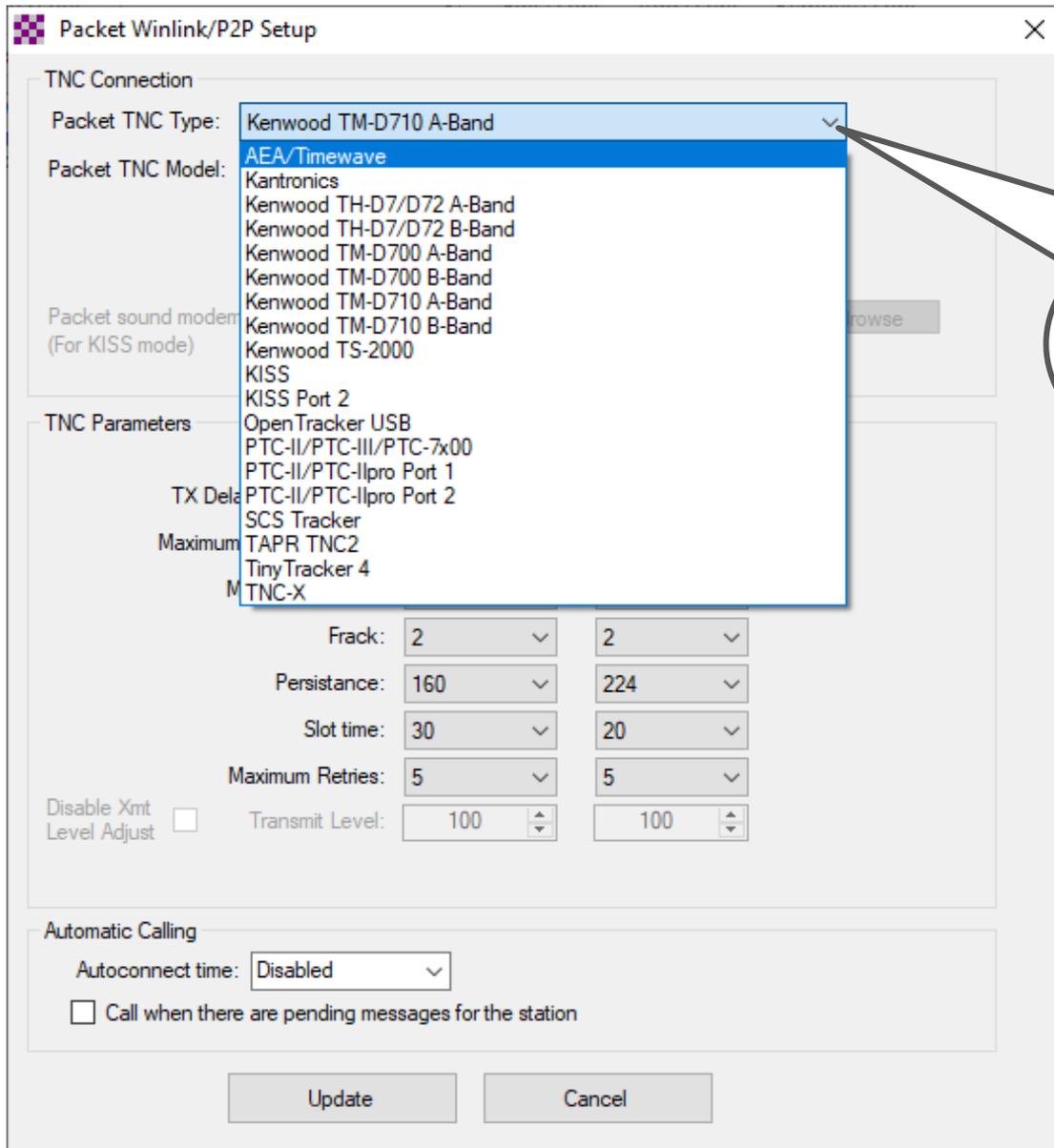


The screenshot shows the 'Packet Winlink/P2P Setup' dialog box. The 'Packet TNC Type' dropdown menu is open, displaying a list of options. The 'Packet TNC Model' dropdown is also open, showing a list of models. The 'TNC Parameters' section includes fields for Frack, Persistence, Slot time, and Maximum Retries. The 'Automatic Calling' section includes an 'Autoconnect time' dropdown and a checkbox for 'Call when there are pending messages for the station'. The 'Update' and 'Cancel' buttons are at the bottom.

Field	Value
Packet TNC Type	Kenwood TM-D710 A-Band
Packet TNC Model	AEA/Timewave
Frack	2
Persistence	160
Slot time	30
Maximum Retries	5
Transmit Level	100
Autoconnect time	Disabled

In the Setup window, click the Packet TNC Type dropdown and select your TNC from the list

Sending with Packet



The screenshot shows the 'Packet Winlink/P2P Setup' dialog box. The 'Packet TNC Type' dropdown menu is open, displaying a list of options. The current selection is 'Kenwood TM-D710 A-Band'. The list includes:

- Kenwood TM-D710 A-Band
- AEA/Timewave
- Kantronics
- Kenwood TH-D7/D72 A-Band
- Kenwood TH-D7/D72 B-Band
- Kenwood TM-D700 A-Band
- Kenwood TM-D700 B-Band
- Kenwood TM-D710 A-Band
- Kenwood TM-D710 B-Band
- Kenwood TS-2000
- KISS
- KISS Port 2
- Open Tracker USB
- PTC-II/PTC-III/PTC-7x00
- PTC-II/PTC-IIpro Port 1
- PTC-II/PTC-IIpro Port 2
- SCS Tracker
- TAPR TNC2
- TinyTracker 4
- TNC-X

Other settings visible in the dialog include:

- Frack: 2
- Persistence: 160
- Slot time: 30
- Maximum Retries: 5
- Transmit Level: 100
- Automatic Calling: Disabled

In the Setup window, click the Packet TNC Type dropdown and select your TNC from the list

Sending with Packet

Packet Winlink/P2P Setup

TNC Connection

Packet TNC Type: Kenwood TM-D710 A-Band

Packet TNC Model: [] Serial Port: COM3

Serial Port Baud: 9600

Packet sound modem: [] Browse

(For KISS mode) Automatically launch packet sound modem

TNC Parameters

1200 Baud 9600 Baud

TX Delay (Milliseconds): 400 300

Maximum Packet Length: 128 128

Maximum Frames: 2 2

Frack: 2 2

Persistence: 160 224

Slot time: 30 20

Maximum Retries: 5 5

Disable Xmt Level Adjust Transmit Level: 100 100

Automatic Calling

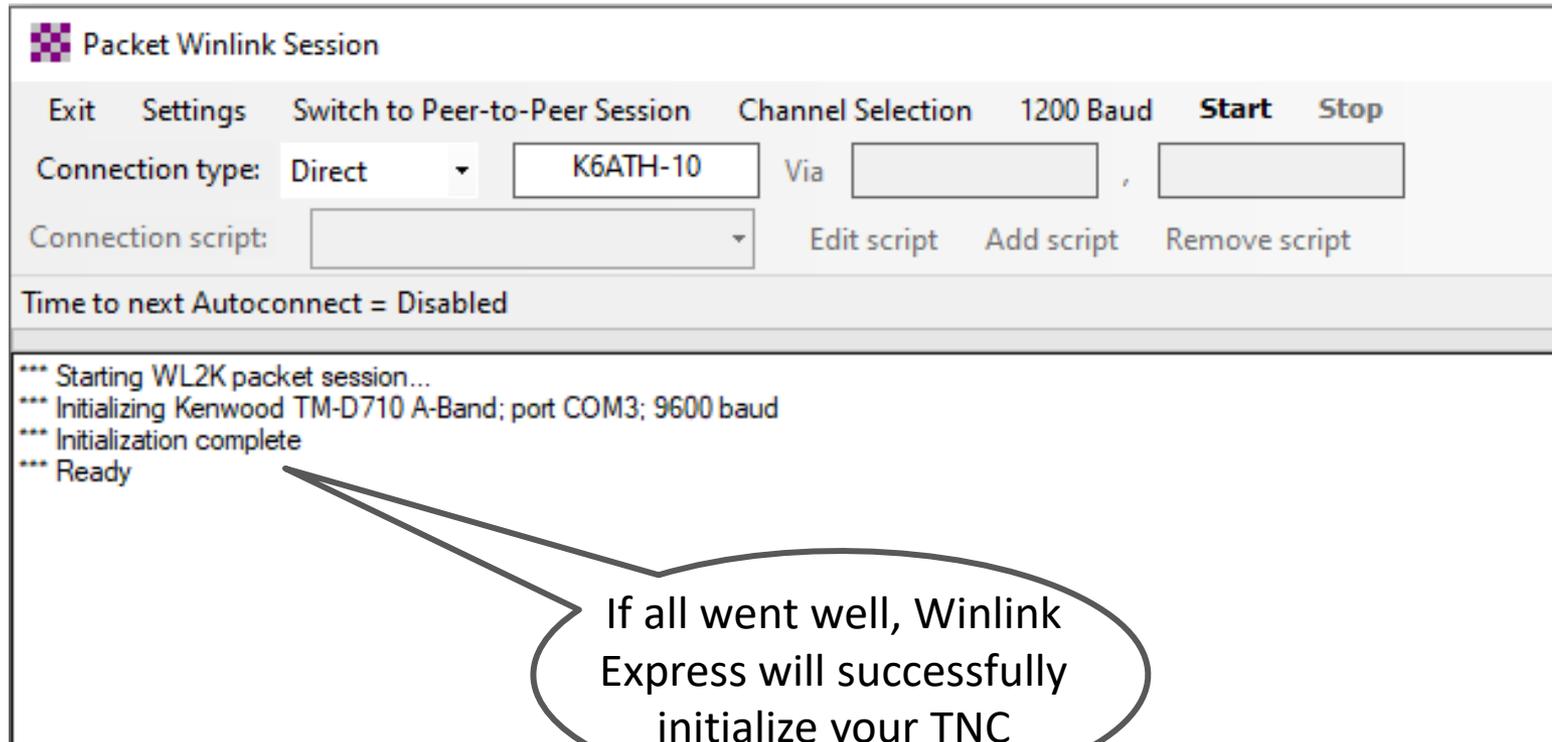
Autoconnect time: Disabled

Call when there are pending messages for the station

Update Cancel

Next, select the Serial Port and the BPS your computer uses to communicate with the TNC. Unless you have an old computer with a real serial port, it's likely you will be using a USB to Serial cable. In that case, check "Device Manager"; "Ports (COM & LPT)" for the COM port your TNC is using. Once done, click on Update

Sending with Packet



The screenshot shows the Packet Winlink Session interface. At the top, there is a title bar with a checkered icon and the text "Packet Winlink Session". Below this is a menu bar with "Exit", "Settings", "Switch to Peer-to-Peer Session", "Channel Selection", "1200 Baud", "Start", and "Stop". The main area contains a "Connection type:" dropdown set to "Direct", a call sign field containing "K6ATH-10", and "Via" fields. Below that is a "Connection script:" dropdown and buttons for "Edit script", "Add script", and "Remove script". A status bar indicates "Time to next Autoconnect = Disabled". The terminal window at the bottom shows the following log:

```
*** Starting WL2K packet session...  
*** Initializing Kenwood TM-D710 A-Band; port COM3; 9600 baud  
*** Initialization complete  
*** Ready
```

A speech bubble points to the "Ready" line in the terminal log, containing the text: "If all went well, Winlink Express will successfully initialize your TNC".

Sending with Packet

Packet Winlink Session

Exit Settings Switch to Peer-to-Peer Session Channel Selection 1200 Baud Start Stop

Connection type: Direct K6ATH-10 Via

Connection script: Edit script Add script Remove script

Time to next Autoconnect = Disabled

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)
K6ATH-10	145.730	1200	CM87VL	PUBLIC	004	270
W6SCF-10	145.630	1200	CM87WH	PUBLIC	012	141
K2RDX-10	145.630	1200	CM97AH	PUBLIC	015	141
WR6HMB-10	145.630	1200	CM87SL	PUBLIC	018	270
NZ6J-10	144.910	1200	CM87SS	PUBLIC	027	318
K9ONR-10	145.630	1200	CM87WV	PUBLIC	029	000
KC6SSM-10	145.630	1200	CM87UV	PUBLIC	030	343
K6BJ-10	145.010	1200	CM87XA	PUBLIC	032	171
WB6RJH-10	145.690	1200	CM87WA	PUBLIC	032	180
KE6AFE-10	145.630	1200	CM97CC	PUBLIC	032	144
W6TUW-10	144.910	1200	CM97AA	PUBLIC	033	164
K6BJ-11	145.710	9600	CM96AX	PUBLIC	036	165
KB6HOH-11	144.910	1200	CM87RV	PUBLIC	037	322
K6SDR-10	144.910	1200	CM87RX	PUBLIC	041	327
KB6HOH-10	144.910	1200	CM88RC	PUBLIC	048	333
AI6EE-10	144.910	1200	CM88RC	PUBLIC	048	333
K6SOL-10	145.730	1200	CM88XF	PUBLIC	052	005

Now click on Channel Selection and the Channel Selector window will open

Next, click on Update Table Via Internet

Sending with Packet

Packet Winlink Session

Exit Settings Switch to Peer-to-Peer Session Channel Selection 1200 Baud **Start** Stop

Connection type: Direct K6ATH-10 Via

Connection script: Edit script Add script Remove script

Time to next Autoconnect = Disabled

*** Starting WL2K packet session...
*** Initializing Kenwood TM-D710 A-Ba
*** Initialization complete
*** Ready

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)
K6ATH-10	145.730	1200	CM87VL	PUBLIC	004	270
W6SCF-10	145.630	1200	CM87WH	PUBLIC	012	180
K2RDX-10	145.630	1200	CM97AH	PUBLIC	015	141
WR6HMB-10	145.630	1200	CM87SL	PUBLIC	018	270
NZ6J-10	144.910	1200	CM87SS	PUBLIC	027	
K9ONR-10	145.630	1200	CM87WV	PUBLIC	029	000
KC6SSM-10	145.630	1200	CM87UV	PUBLIC	030	343
K6BJ-10	145.010	1200	CM87XA	PUBLIC	032	171
WB6RJH-10	145.690	1200	CM87WA	PUBLIC	032	180
KE6AFE-10	145.630	1200	CM97CC	PUBLIC	032	144
W6TUW-10	144.910	1200	CM97AA	PUBLIC	033	164
K6BJ-11	145.710	9600	CM96AX	PUBLIC	036	165
KB6HOH-11	144.910	1200	CM87RV	PUBLIC	037	322
K6SDR-10	144.910	1200	CM87RX	PUBLIC	041	327
KB6HOH-10	144.910	1200	CM88RC	PUBLIC	048	333
AI6EE-10	144.910	1200	CM88RC	PUBLIC	048	333
K6SOL-10	145.730	1200	CM88XF	PUBLIC	052	005

Based on the grid square you entered in My Grid Square in Settings, the table will populate the nearest RMS nodes to you

Sending with Packet

Packet Winlink Session

Exit Settings Switch to Peer-to-Peer Session Channel Selection 1200 Baud **Start** Stop

Connection type: Direct K6ATH-10 Via

Connection script: Edit script Add script Remove script

Time to next Autoconnect = Disabled

*** Starting WL2K packet session...
*** Initializing Kenwood TM-D710 A-Ba...
*** Initialization complete
*** Ready

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)
K6ATH-10	145.730	1200	CM87VL	PUBLIC	004	270
W6SCF-10	145.630	1200	CM87WH	PUBLIC	012	270
K2RDX-10	145.630	1200	CM97AH	PUBLIC	015	141
WR6HMB-10	145.630	1200	CM87SL	PUBLIC	018	270
NZ6J-10	144.910	1200	CM87SS	PUBLIC	027	318
K9ONR-10	145.630	1200	CM87WV	PUBLIC	029	000
KC6SSM-10	145.630	1200	CM87UV	PUBLIC	030	343
K6BJ-10	145.010	1200	CM87XA	PUBLIC	032	171
WB6RJH-10	145.690	1200	CM87WA	PUBLIC	032	180
KE6AFE-10	145.630	1200	CM97CC	PUBLIC	032	144
W6TUW-10	144.910	1200	CM97AA	PUBLIC	033	164
K6BJ-11	145.710	9600	CM96AX	PUBLIC	036	165
KB6HOH-11	144.910	1200	CM87RV	PUBLIC	037	322
K6SDR-10	144.910	1200	CM87RX	PUBLIC	041	327
KB6HOH-10	144.910	1200	CM88RC	PUBLIC	048	333
AI6EE-10	144.910	1200	CM88RC	PUBLIC	048	333
K6SOL-10	145.730	1200	CM88XF	PUBLIC	052	005

Typically you would choose the first entry in the list as it will be the closest

Sending with Packet

Packet Winlink Session

Exit Settings Switch to Peer-to-Peer Session Channel Selection 1200 Baud **Start** Stop

Connection type: Direct ▾ K6ATH-10 Via ,

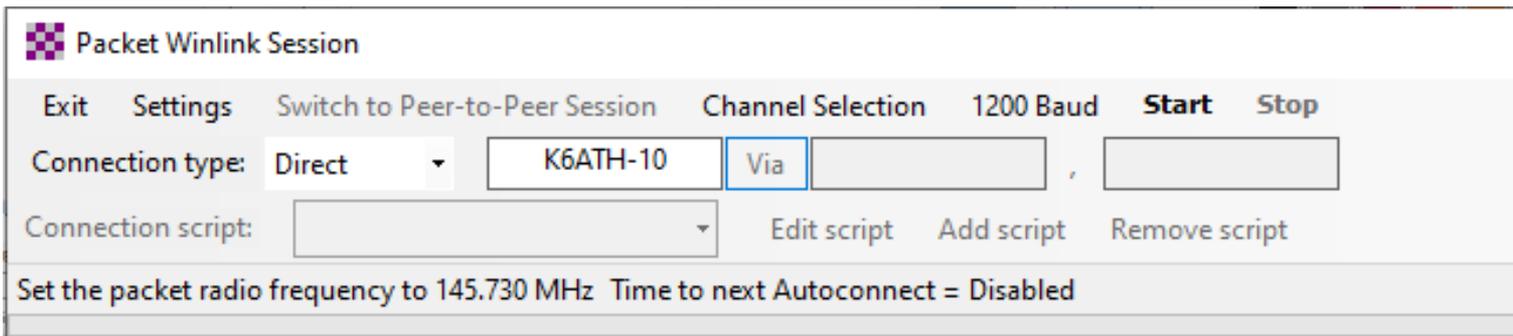
Connection script: ▾ Edit script Add script Remove script

Set the packet radio frequency to **145.730 MHz** Time to next Autoconnect = Disabled

*** Starting WL2K packet session...
*** Initializing Kenwood TM-D710 A-Band; port COM3; 9600 baud
*** Initialization complete
*** Ready

Set your radio to the frequency listed here, then click Start

Sending with Packet

The image shows the Packet Winlink Session interface. At the top, there's a title bar with a logo and the text "Packet Winlink Session". Below that, there are several buttons: "Exit", "Settings", "Switch to Peer-to-Peer Session", "Channel Selection", "1200 Baud", "Start", and "Stop". The "Channel Selection" button is highlighted with a blue border. Below the buttons, there are input fields for "Connection type:" (set to "Direct"), "K6ATH-10", and "Via". There are also buttons for "Edit script", "Add script", and "Remove script". A status bar below the input fields says "Set the packet radio frequency to 145.730 MHz Time to next Autoconnect = Disabled".

```
*** Starting to call K6ATH-10
*** Opening serial port COM4; 9600 baud; Kenwood TM-D710 A-Band
*** Connecting to K6ATH-10
*** Connected to K6ATH-10 at 2021/07/12 15:24:21

WELCOME TO THE ATHERTON EMCOMM. EMAIL WINLINK SERVER
[WL2K-5.0-B2FWIHJM$]
;PQ: 76228457
CMS via K6ATH >
;FW: KK6DAC
[RMS Express-1.5.38.0-B2FHM$]
;PR: 38260587
: K6ATH-10 DE KK6DAC (CM87WL)
FF
FQ
*** --- End of session at 2021/07/12 15:24:42 ---
*** Messages sent: 0. Total bytes sent: 0, Time: 00:20, bytes/minute: 0
*** Messages Received: 0. Total bytes received: 0, Total session time: 00:20, bytes/minute: 0
*** Disconnected at 2021/07/12 15:24:56

*** Disconnect reported.
```

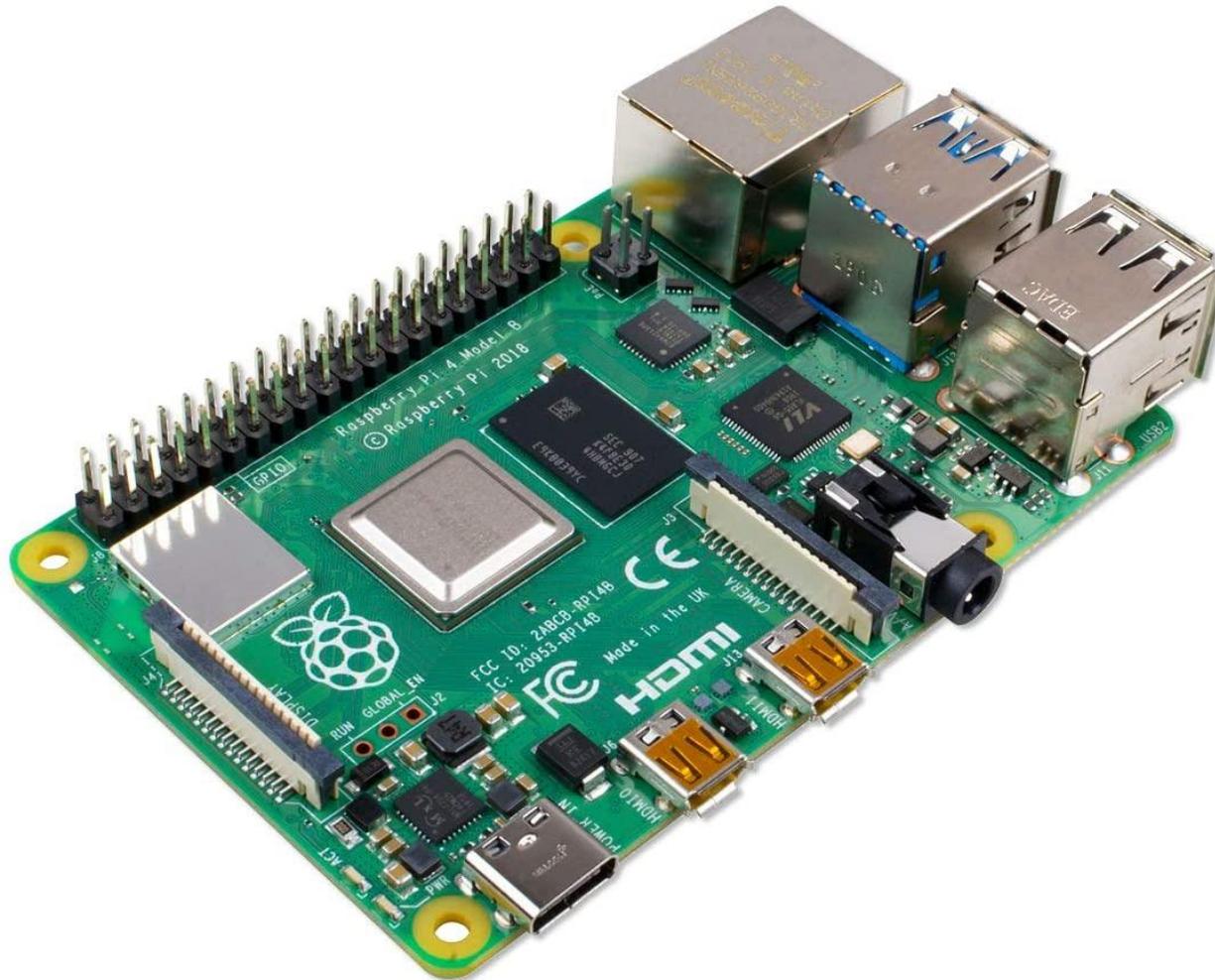
If you are able to reach that RMS node using Packet, you will see a Connect message, then a Banner and then messages are sent and received

But I Use a Mac or Linux Computer...

- Winlink Express can run under WINE on both Linux and MacOS
- <http://k6eta.com/linux/installing-rms-express-on-linux-with-wine>
- <http://k6eta.com/mac/installing-rms-express-on-mac-free-wine-option>
- <http://k6eta.com/mac/installing-rms-express-on-mac-with-crossover-wine>
- While not a full Winlink Express application, there is a program called “Pat” which can be run on Linux (including a Raspberry Pi), MacOS and Windows which provides some of the key functionality of Winlink Express

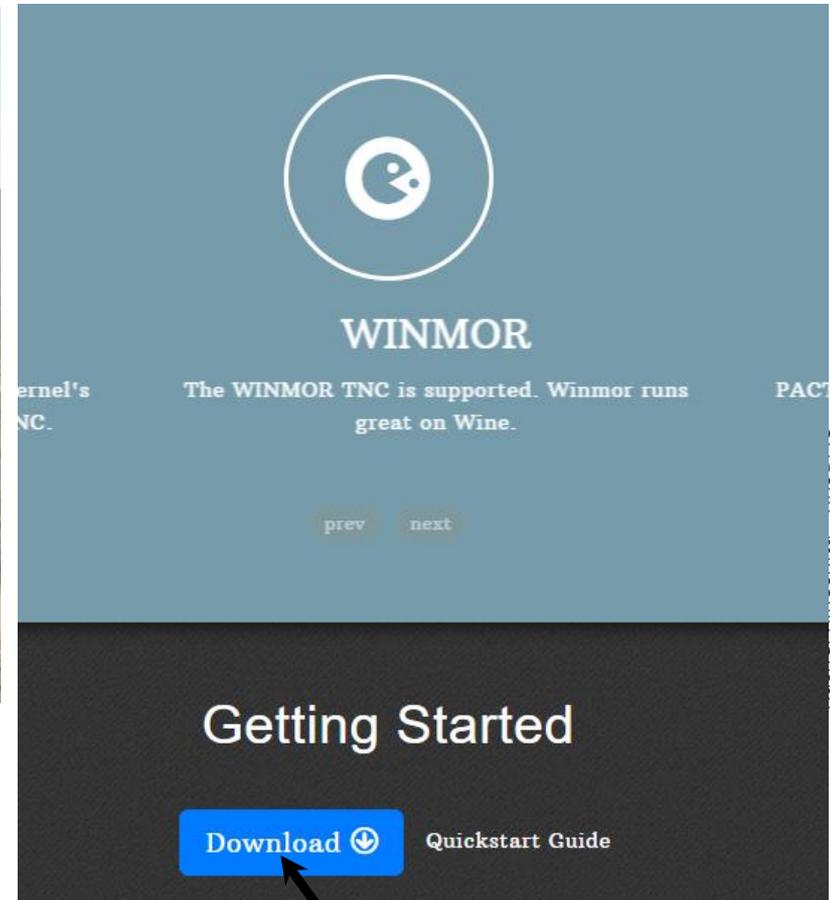
Pat Winlink – Installation on a Raspberry Pi

- Installing Pat Winlink on a Raspberry Pi is quick and painless



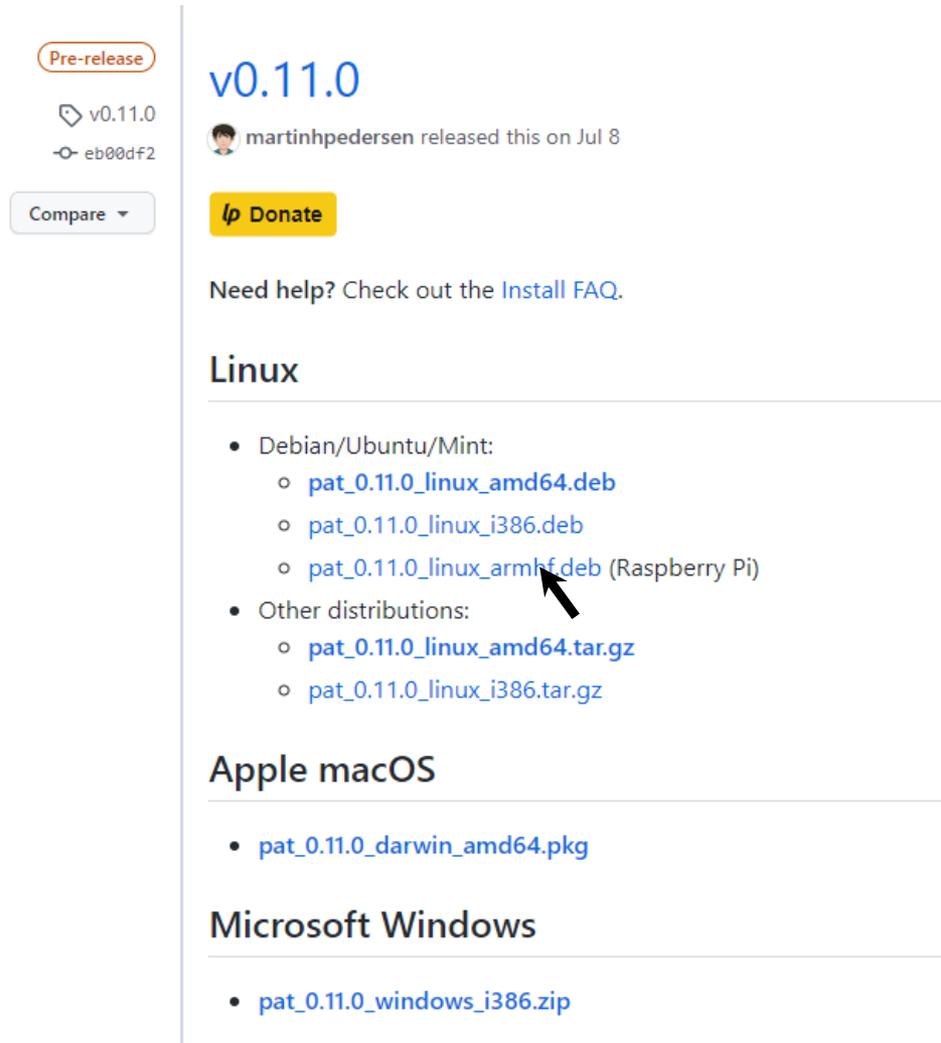
Pat Winlink – Installation on a Raspberry Pi

- Get the dpkg at : <https://getpat.io>



Pat Winlink – Installation on a Raspberry Pi

- Get the dpkg at : <https://getpat.io>



The screenshot shows the GitHub release page for Pat Winlink v0.11.0. The release is marked as a "Pre-release" and was published by martinhpetersen on July 8. The commit hash is eb00df2. A "Donate" button is visible. The "Linux" section lists the following download links:

- Debian/Ubuntu/Mint:
 - [pat_0.11.0_linux_amd64.deb](#)
 - [pat_0.11.0_linux_i386.deb](#)
 - [pat_0.11.0_linux_armhf.deb](#) (Raspberry Pi)
- Other distributions:
 - [pat_0.11.0_linux_amd64.tar.gz](#)
 - [pat_0.11.0_linux_i386.tar.gz](#)

The "Apple macOS" section lists:

- [pat_0.11.0_darwin_amd64.pkg](#)

The "Microsoft Windows" section lists:

- [pat_0.11.0_windows_i386.zip](#)

Pat Winlink – Installation on a Raspberry Pi

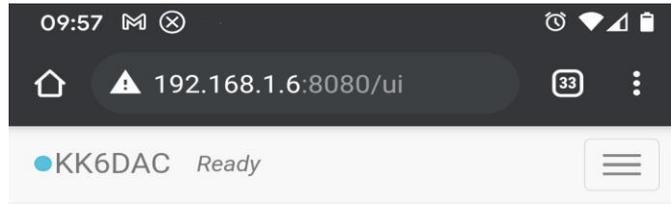
- The DEB file will be downloaded to your Downloads directory
- Open a Terminal Window and Install Pat
 - `cd Downloads`
 - `sudo dpkg -I PAT_INSTALLATION_DEB_FILE`
- Configure Pat:
 - `pat configure`
 - Enter your call sign
 - Enter your case-sensitive Winlink Password
 - Enter your grid square in the “locator” field
- Start Pat:
 - `pat http`
- Use your browser to access pat using <http://localhost:8080/>
- Set Pat to start and run when you restart your Pi:
 - `sudo systemctl start pat@YOUR-LINUX-USERNAME`
 - `sudo systemctl enable pat@YOUR-LINUX-USERNAME`

Pat Winlink Using Your Browser

● KK6DAC Ready **Inbox** Outbox Sent Archive Action ▾

Subject	From	Date	Message ID
Hello world	4156948445@vtext.com	2021-08-01T18:50:00-07:00	PGN55IZRFFN9
Test	4156948445@vtext.com	2021-08-01T17:19:00-07:00	48MR0LA42US5
Automatic System Message	SERVICE	2021-08-01T17:15:00-07:00	HLS7RKVVH4SS
Automatic System Message	SERVICE	2021-08-01T17:13:00-07:00	JONQ4VNH108Z
Automatic System Message	SERVICE	2021-08-01T17:04:00-07:00	593NU3BWCJ4A
Re: test	kk6dac@gmail.com	2021-08-01T16:59:00-07:00	0HXYTI4V4XNO
Re: test	kk6dac@gmail.com	2021-08-01T16:59:00-07:00	VRV0B1N81D2V
Re: test	kk6dac@gmail.com	2021-08-01T13:16:00-07:00	5NWYYXH98JI6

Pat Winlink Using a Browser on Your Phone



Subject	From	Date
Hello world	4156948445@vtext.com	2021-08-01T
Test	4156948445@vtext.com	2021-08-01T
Automatic System Message	SERVICE	2021-08-01T
Automatic System Message	SERVICE	2021-08-01T
Automatic System Message	SERVICE	2021-08-01T
Re: test	kk6dac@gmail.com	2021-08-01T
Re: test	kk6dac@gmail.com	2021-08-01T
Re: test	kk6dac@gmail.com	2021-08-01T

```
2021/08/01 22:41:17 Connected to 52.71.136.84:8772 (tcp)
[WL2K-5.0-B2FWIHJMS]
:PQ: 93076351
CMS>
>FF
FQ
2021/08/01 22:41:17 Disconnected.
2021/08/02 08:29:52 Connecting to WL2K (telnet)...
2021/08/02 08:29:53 Connected to 52.71.136.84:8772 (tcp)
[WL2K-5.0-B2FWIHJMS]
:PQ: 02660828
CMS>
>FF
FQ
2021/08/02 08:29:54 Disconnected.
```



Questions



KK6DAC@arrl.net