



# WINLINK DATA OPERATIONS

March 12, 2022



# FAMILIARITY?



## RADIOGRAM



MSG. NO.	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME (UTC)	DATE
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TO: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

MESSAGE:

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

FROM (SIGNATURE): \_\_\_\_\_

\_\_\_\_\_

Form 1602

RECEIVED FROM (CALL)	TIME	DATE	TRANSMITTED TO (CALL)	TIME	DATE
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## THE AMERICAN RADIO RELAY LEAGUE RADIOGRAM VIA AMATEUR RADIO



NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE
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TO

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

THIS RADIO MESSAGE WAS RECEIVED AT

AMATEUR STATION \_\_\_\_\_ PHONE \_\_\_\_\_  
 NAME \_\_\_\_\_  
 STREET ADDRESS \_\_\_\_\_  
 CITY, STATE, ZIP \_\_\_\_\_

TELEPHONE NUMBER

\_\_\_\_\_

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

FROM	DATE	TIME	TO	DATE	TIME
------	------	------	----	------	------

REC'D

SENT

THIS MESSAGE WAS HANDLED FREE OF CHARGE BY A LICENSED AMATEUR RADIO OPERATOR, WHOSE ADDRESS IS SHOWN IN THE BOX AT RIGHT ABOVE. AS SUCH MESSAGES ARE HANDLED SOLELY FOR THE PLEASURE OF OPERATING, NO COMPENSATION CAN BE ACCEPTED BY A "HAM" OPERATOR. A RETURN MESSAGE MAY BE FILED WITH THE "HAM" DELIVERING THIS MESSAGE TO YOU. FURTHER INFORMATION ON AMATEUR RADIO MAY BE OBTAINED FROM ARRL HEADQUARTERS, 225 MAIN STREET, NEWINGTON, CT 06111

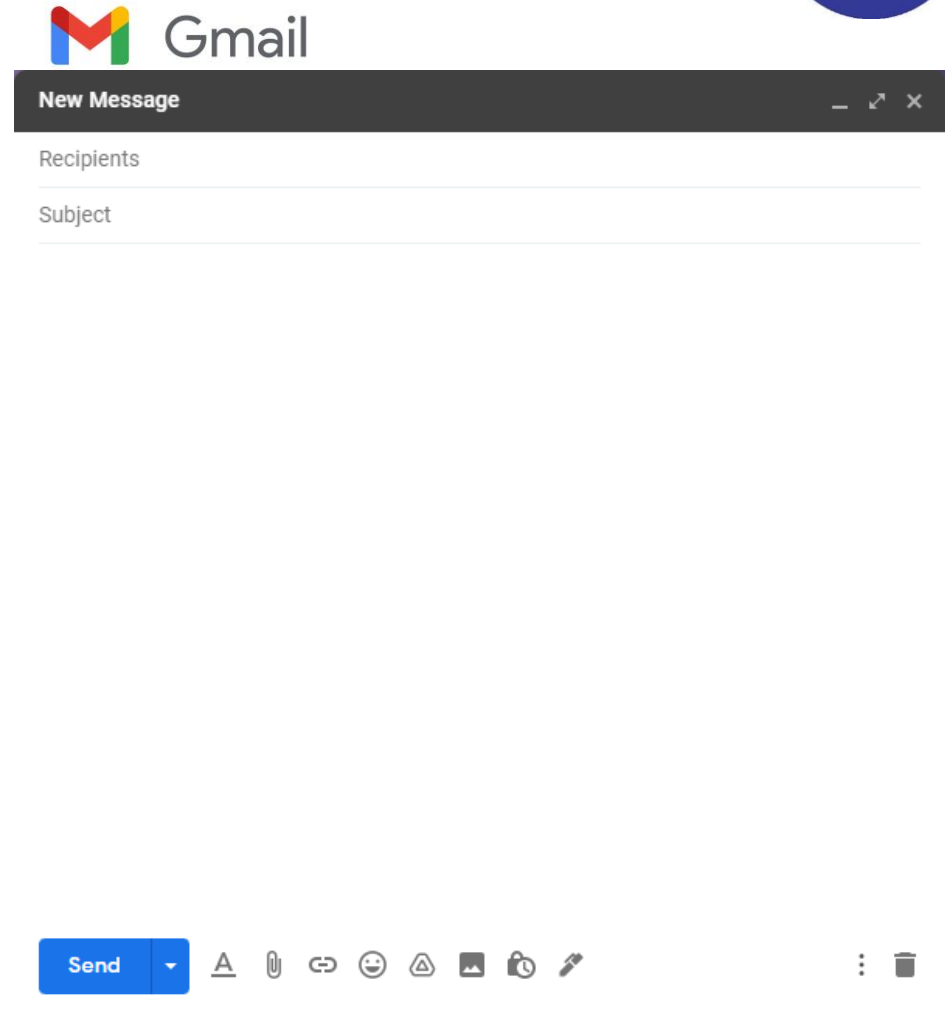
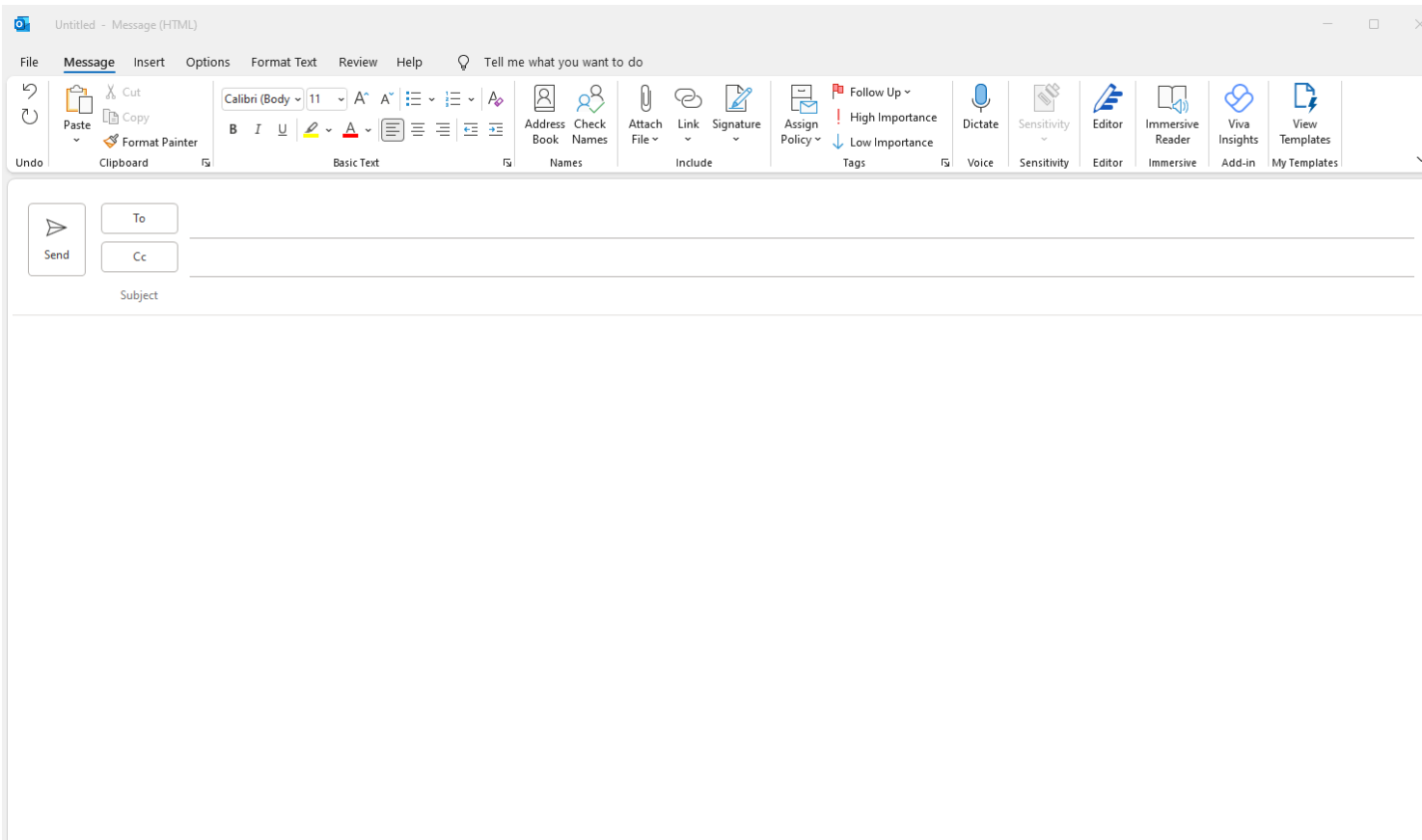
THE AMERICAN RADIO RELAY LEAGUE, INC. IS THE NATIONAL MEMBERSHIP SOCIETY OF LICENSED RADIO AMATEURS AND THE PUBLISHER OF QST MAGAZINE. ONE OF ITS FUNCTIONS IS PROMOTION OF PUBLIC SERVICE COMMUNICATION AMONG AMATEUR OPERATORS. TO THAT END, THE LEAGUE HAS ORGANIZED THE NATIONAL TRAFFIC SYSTEM FOR DAILY NATIONWIDE MESSAGE HANDLING.



- Are you familiar with radiograms?
- Would you know how to properly fill one out?
- Do you know where you would go to actually send a radiogram?
- Would you know how to properly send the radiogram via phone? via CW?

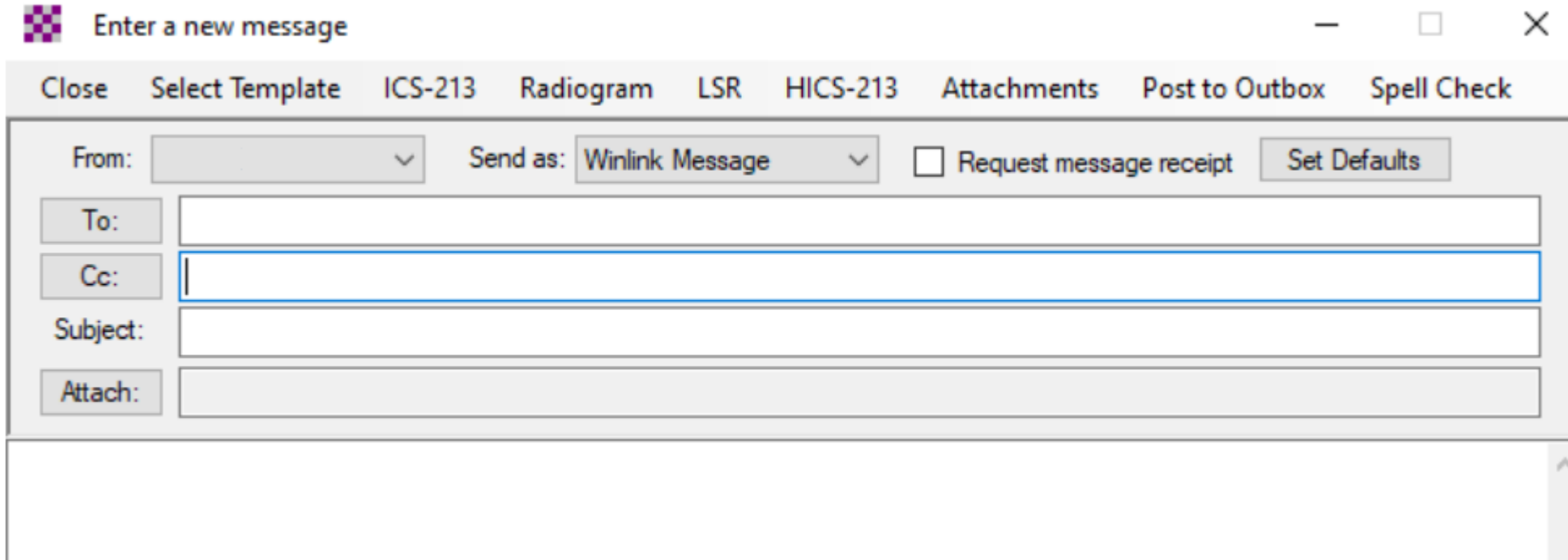


# FAMILIAR?



- The vast majority of people are familiar with one or more of the popular email services.
- Would you know how to send an email using Outlook, Gmail, etc? (Chances are good!)

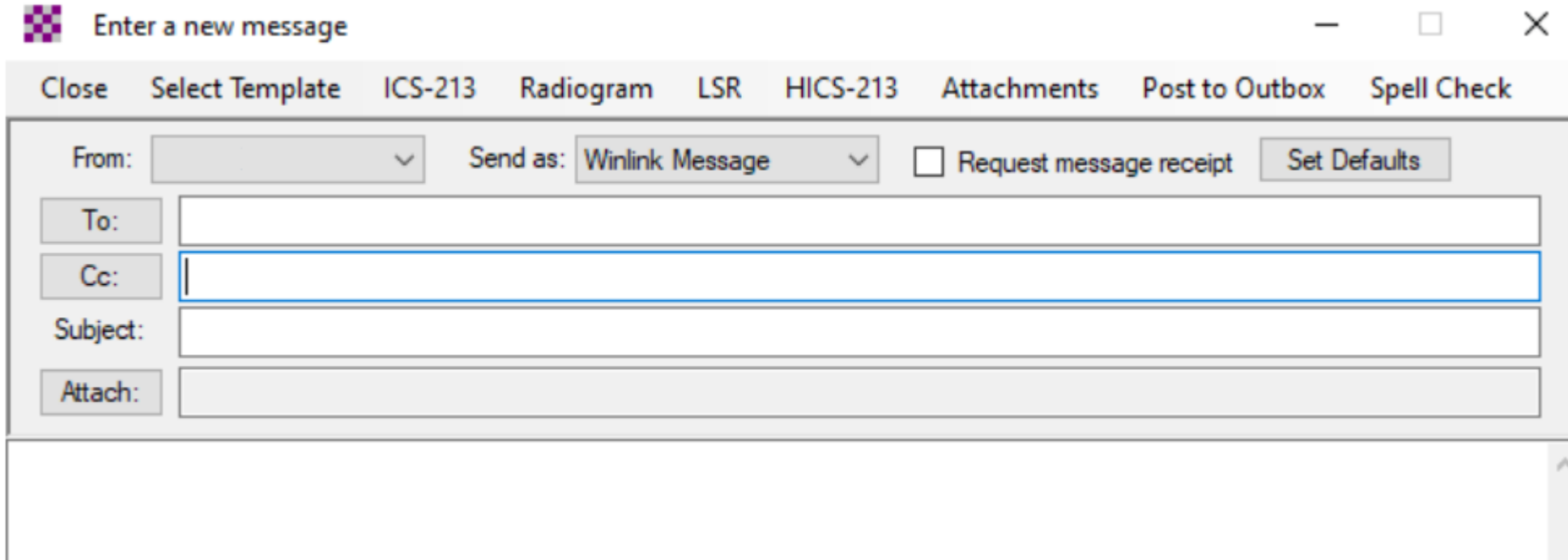
# WINLINK IS LIKE EMAIL



The screenshot shows a window titled "Enter a new message" with a standard Windows-style title bar (minimize, maximize, close buttons). Below the title bar is a menu bar with the following items: Close, Select Template, ICS-213, Radiogram, LSR, HICS-213, Attachments, Post to Outbox, and Spell Check. The main area of the window contains a "From:" field with a dropdown arrow, a "Send as:" dropdown menu currently set to "Winlink Message", a checkbox for "Request message receipt" which is unchecked, and a "Set Defaults" button. Below these are four text input fields labeled "To:", "Cc:", "Subject:", and "Attach:". The "Cc:" field is currently selected with a blue border. At the bottom of the window is a large, empty text area for the message body, with a small upward-pointing arrow on the right side.

- Most people can figure out how to enter a WinLink message very quickly.
- Would you know how to create a WinLink email? (Chances are good!)
- But, there are differences in how the message gets sent in WinLink versus Outlook, Gmail, etc.

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- Would you know how to create a WinLink email? (Chances are good!)
- But, there are differences in how the message gets sent in WinLink versus Outlook, Gmail, etc.



# IS EMAIL AVAILABLE ANYWHERE?



- Can you count on cellular coverage and/or Internet access everywhere? (Of course not!)
- Places where cellular or Internet service is available during “normal” times may not have access during natural disasters or because of man-made interruptions.
- With your radio equipment, a computer, WinLink and a power source, you can send and receive email messages from just about anywhere on the planet to another ham with a WinLink account or to any email address. No other ham radio-oriented software offers this capability.

## WINLINK BASIC POINTS

- Winlink is an email-like messaging tool.
- Winlink is very similar to other e-mail user interfaces, so it is easy to learn.
- Winlink is designed to work with amateur radio. Many radio gateway stations exist on both HF and V/UHF.
- Winlink works with multiple digital modes (Ardop, Pactor, AX.25 Packet, VARA HF/FM).
- Winlink can make use of the Internet, if it is available.
- Winlink is an excellent tool for use in EmComm.
- The software is free and the service is free.



## WINLINK ACRONYMS

- RMS = Radio Message Server
- CMS = Common Message Server
- P2P = Peer-To-Peer

Winlink provides the CMS hardware & Winlink Express client software and software for RMS gateway operators.

Individual Hams provide the RMS Gateway hardware (computers, radios, antennas, etc.)

Show appreciation to the RMS Gateway operators!





# WINLINK MAKES USE OF DIGITAL COMMUNICATION TECHNIQUES TO SEND AND RECEIVE MESSAGES



A computer is required to initiate and retrieve messages.

WinLink was designed to use radio as a transport medium.

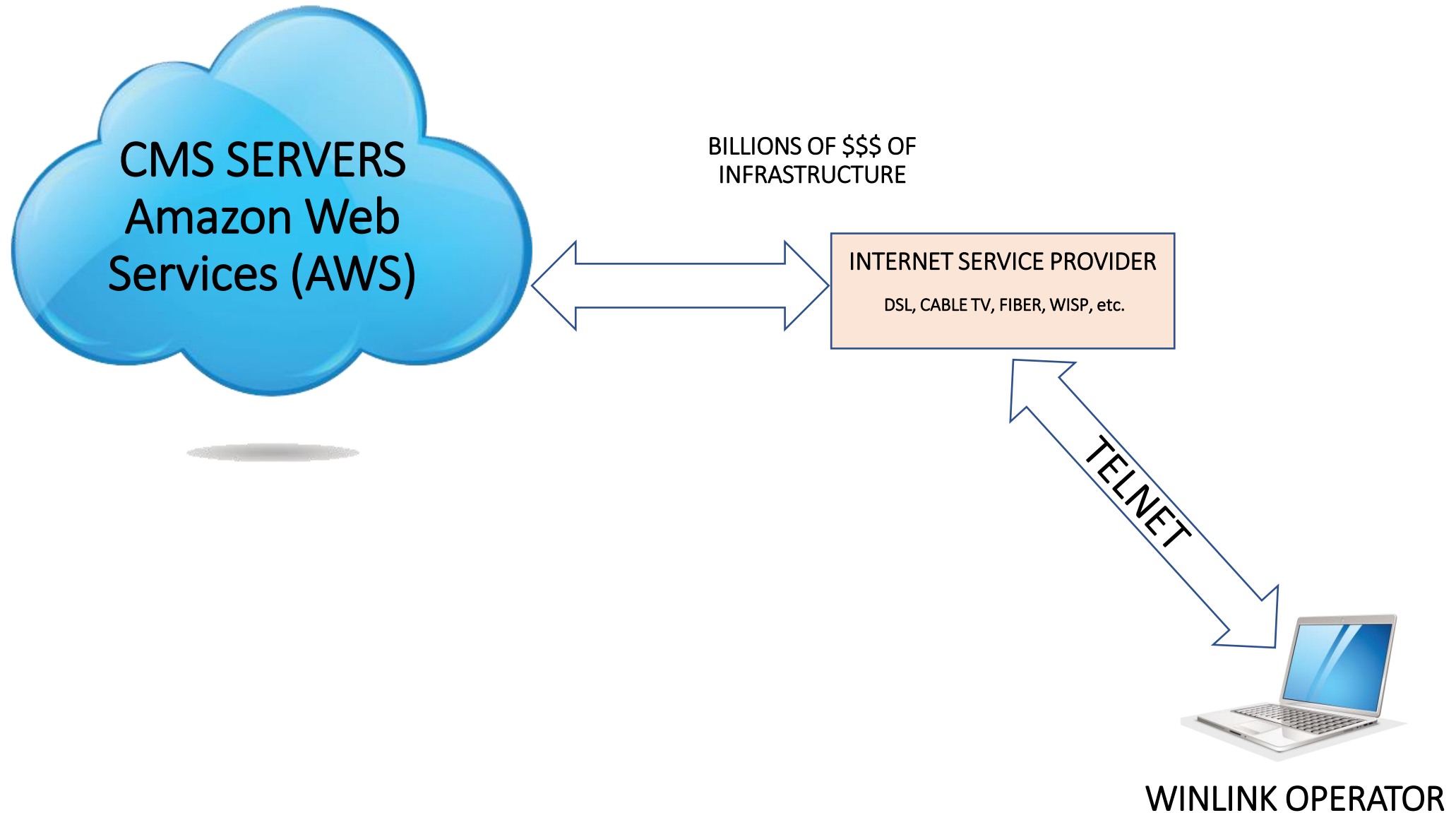
(However, WinLink can be used without a radio)

WinLink is not a digital “mode”, it is a message transport service.

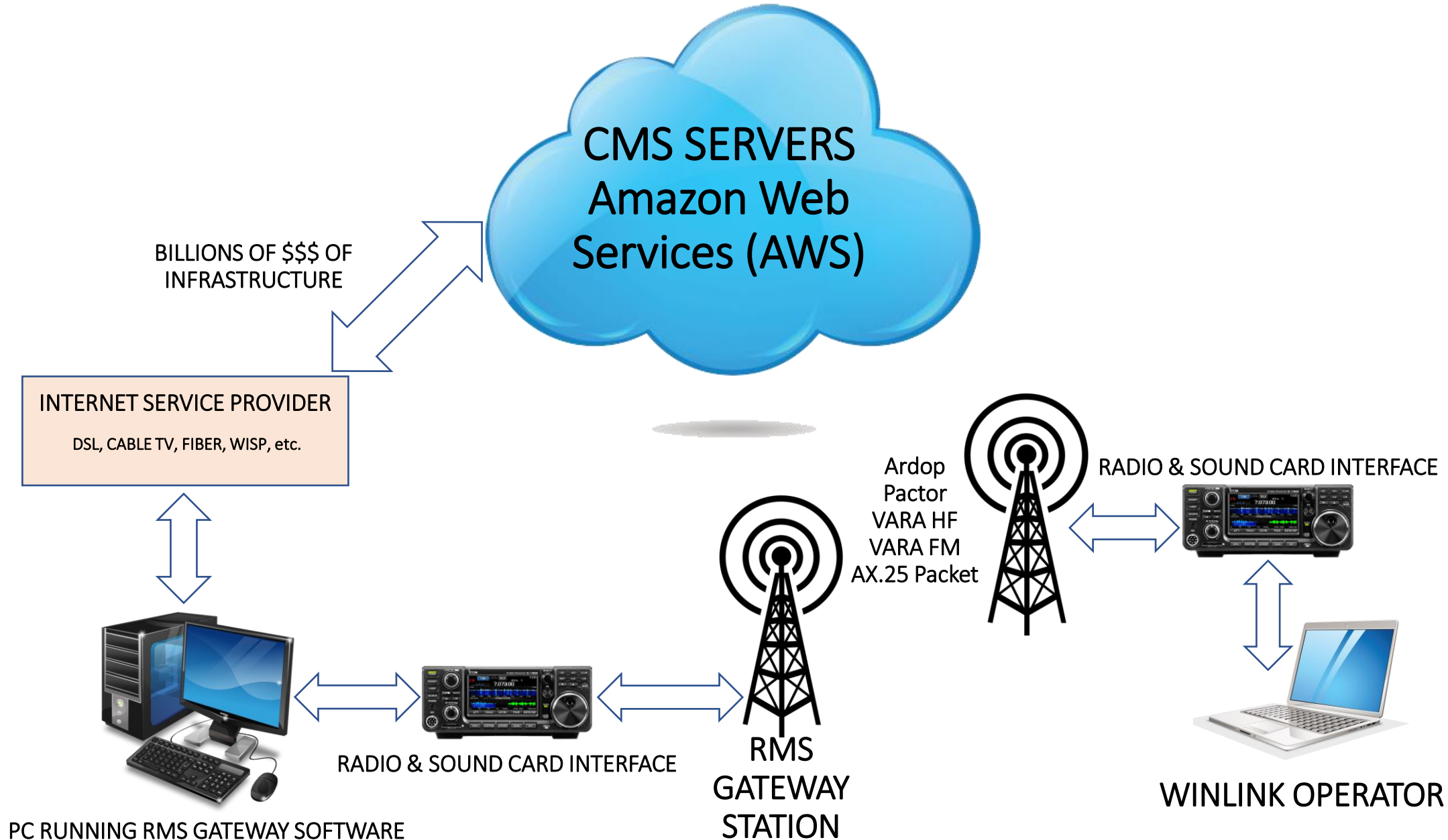
There are several software programs available to access the WinLink service.

- WinLink Express
- Pat
- WoAD
- AirMail
- PacLink
- Outpost
- PacLink-Unix

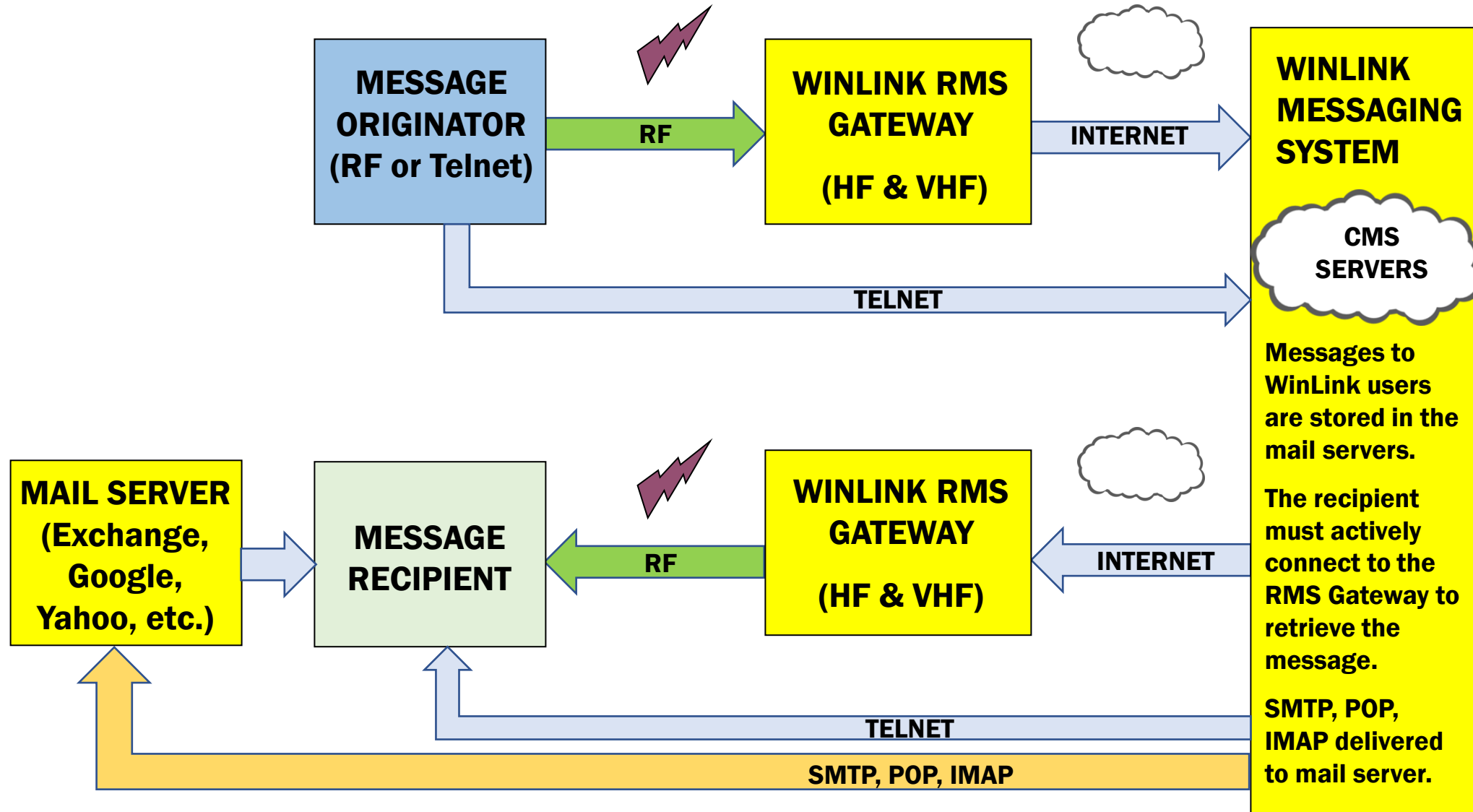
# WINLINK CMS SERVERS LIVE IN THE INTERNET CLOUD



# WINLINK CMS SERVERS LIVE IN THE INTERNET CLOUD



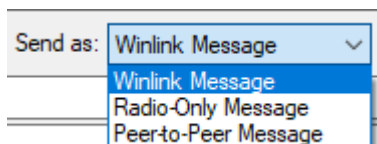
# WINLINK MESSAGE BASIC FLOW



# Winlink Message Types

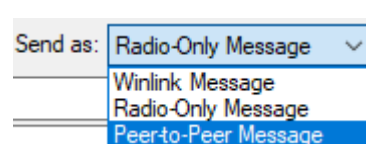
## Winlink Message

- Default message type
- Used with Internet Telnet, RMS gateways and RMS Relay Post Office
- With RMS gateways, requires Internet access at the gateway
- Can address message to any valid email address (non-hams)



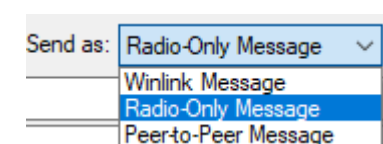
## Peer-to-Peer (P2P) Message

- Not the default message type
- Used for station-to-station connections
- No Internet access required on either end
- Can only address message to another licensed ham



## Radio-Only (RO) Message

- Not the default message type
- Used for station-to-Message Pickup Station (MPS) connections
- No Internet access required on either end.
- Can only address message to another licensed ham





WB5PJB Settings Message Attachments Move To: Saved Items Delete Open Session: Telnet Winlink Logs Help

No active session.

System Folders

- Inbox (0 unread)
- Read Items (0)
- Outbox (0)
- Sent Items (142)
- Saved Items (560)
- Deleted Items (3)
- Drafts (0)

Personal Folders

Global Folders

Contacts

Date/Time Message ID

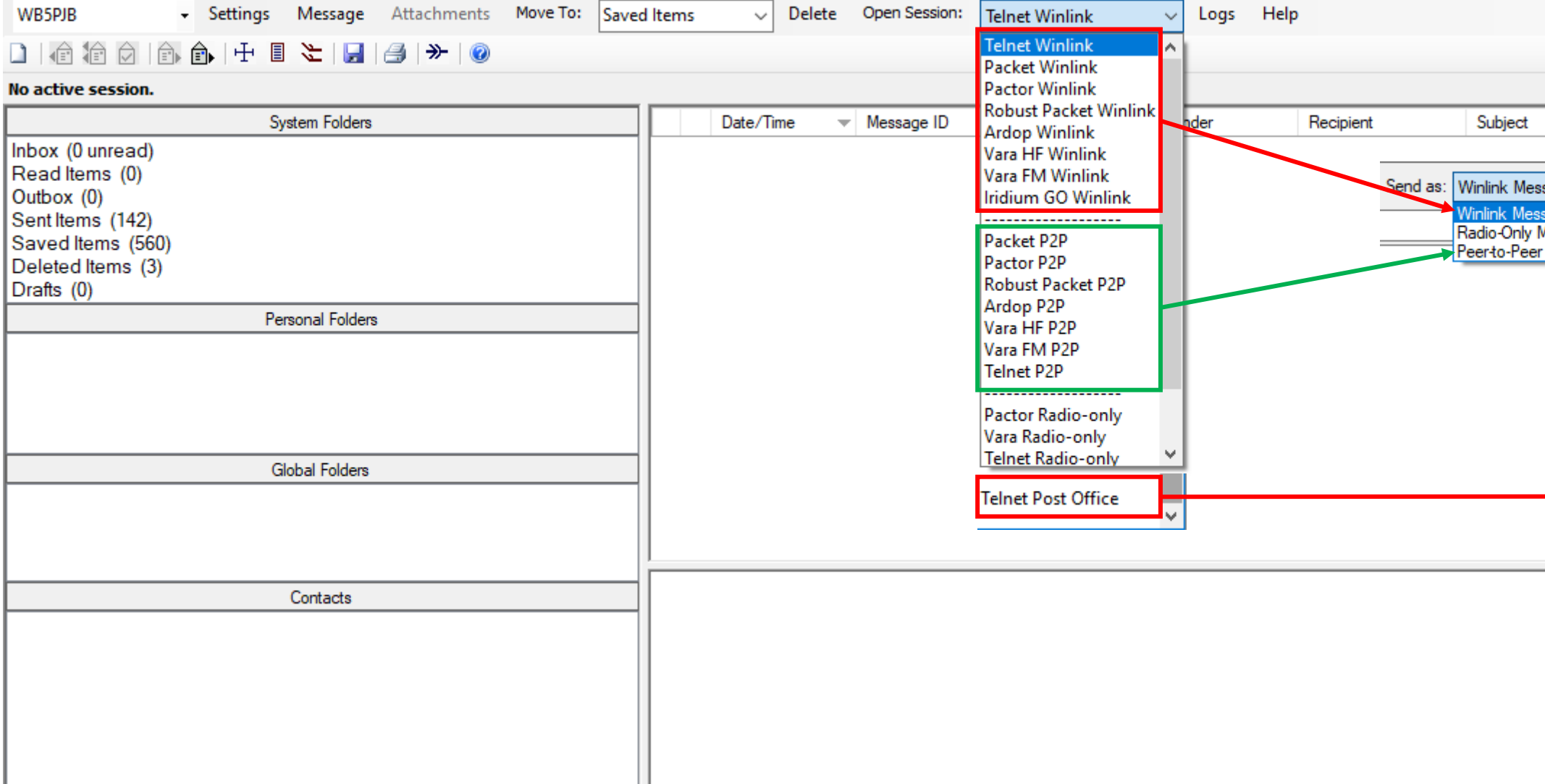
Telnet Winlink  
Packet Winlink  
Pactor Winlink  
Robust Packet Winlink  
Ardop Winlink  
Vara HF Winlink  
Vara FM Winlink  
Iridium GO Winlink

Packet P2P  
Pactor P2P  
Robust Packet P2P  
Ardop P2P  
Vara HF P2P  
Vara FM P2P  
Telnet P2P

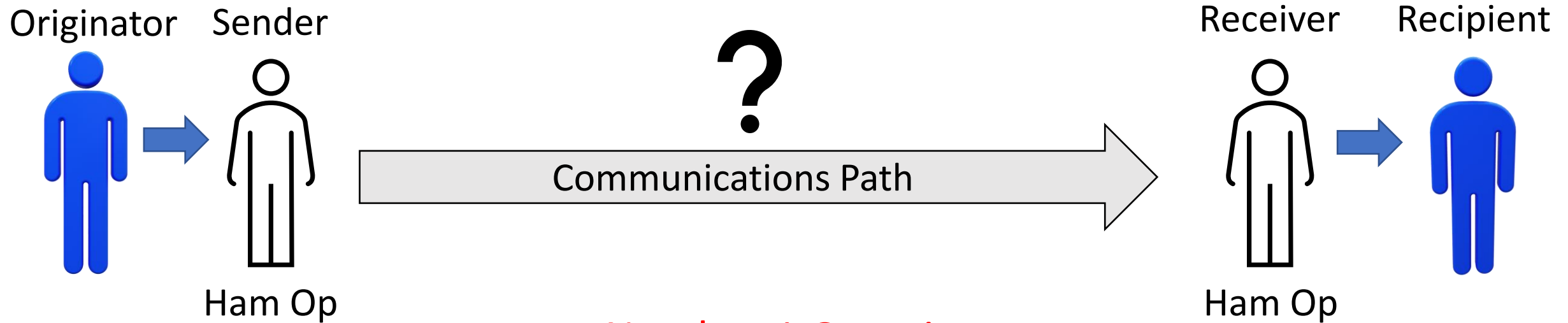
Pactor Radio-only  
Vara Radio-only  
Telnet Radio-only

Telnet Post Office

Send as: Winlink Message  
Winlink Message  
Radio-Only Message  
Peer-to-Peer Message



# Winlink Message Flow



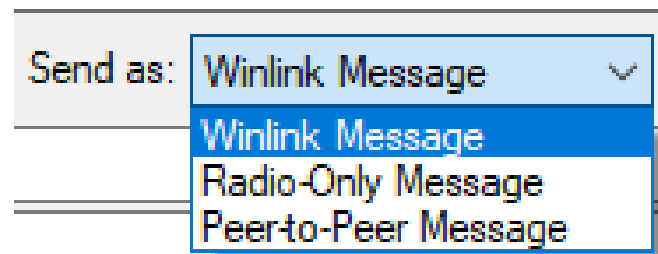
Number 1 Question:

Q. What is the best communications path for Winlink messaging?

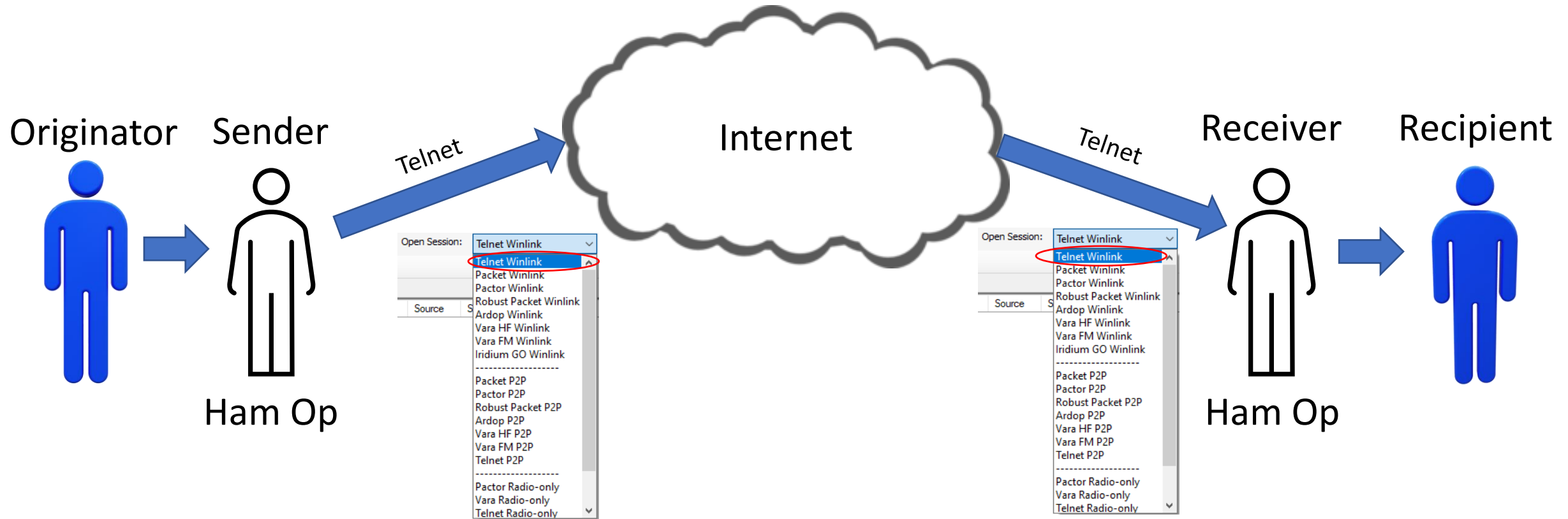
A. It depends on many factors.

# Winlink Message Flow

- Winlink Type Message
- Typical Scenarios



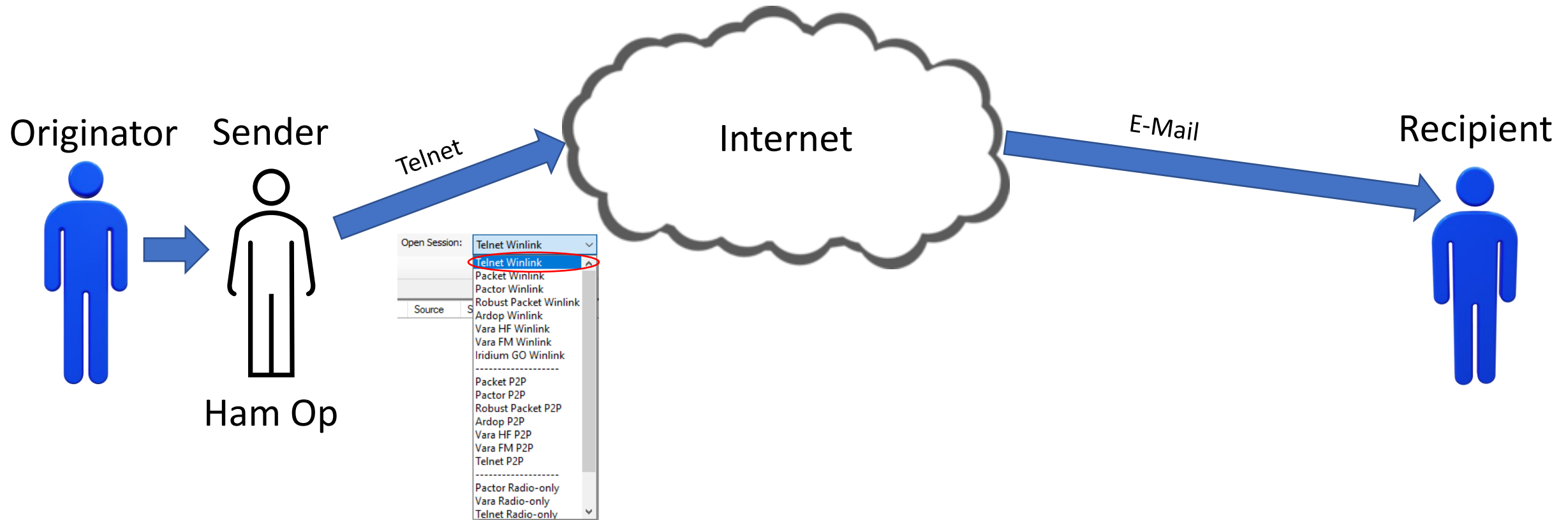
# Winlink Message Flow



If both parties involved have Internet access, then simply use  
Telnet and the Winlink message type.

Easy. Life is good.

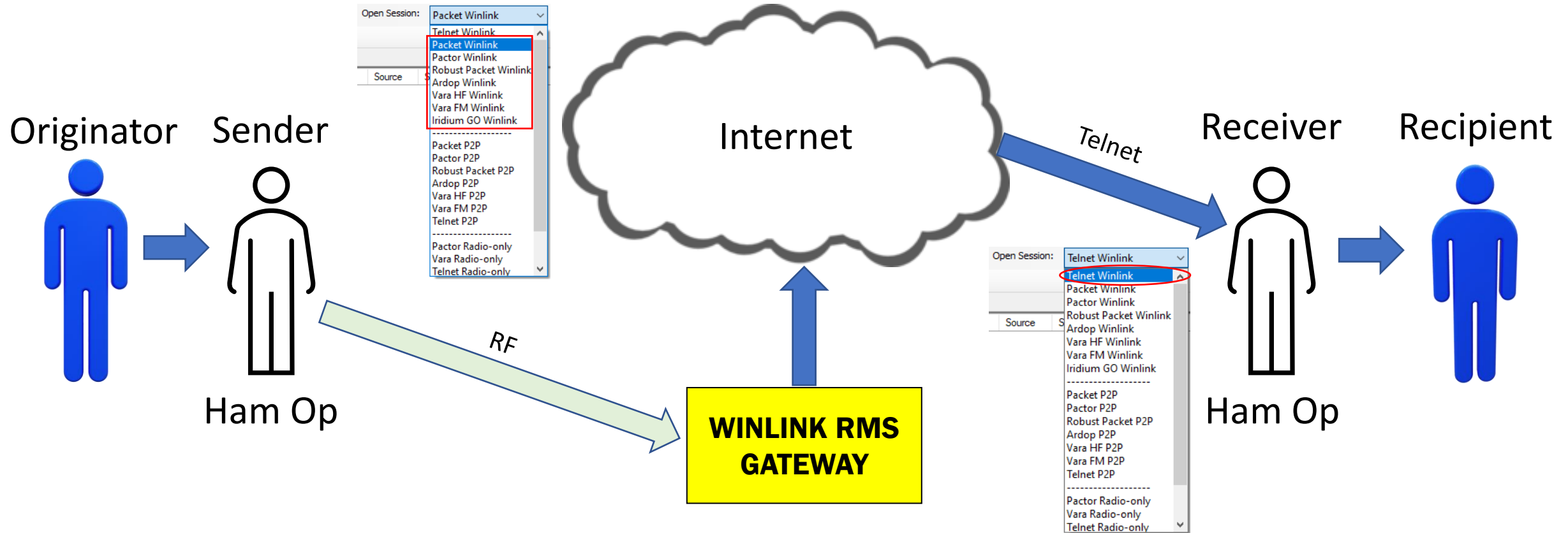
# Winlink Message Flow



Keep in mind that Winlink can send the message to any valid email address, so if a Ham operator doesn't exist at the recipient's end, it is possible to send the message directly to the recipient's email address.

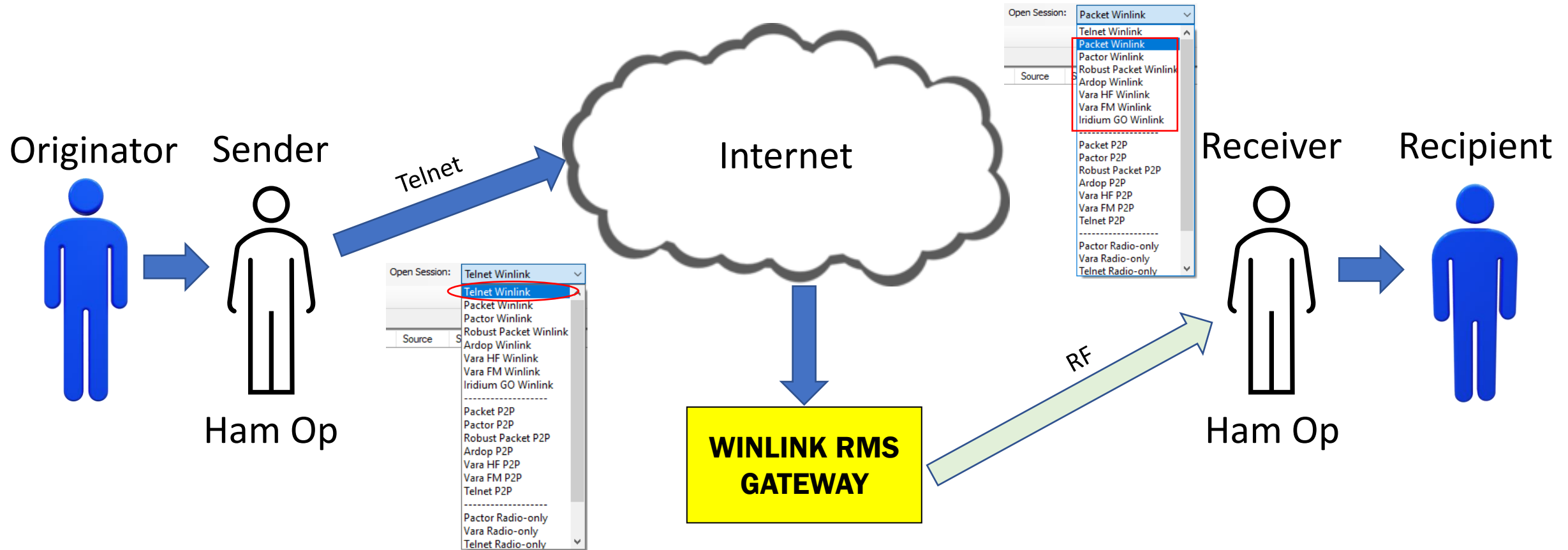


# Winlink Message Flow



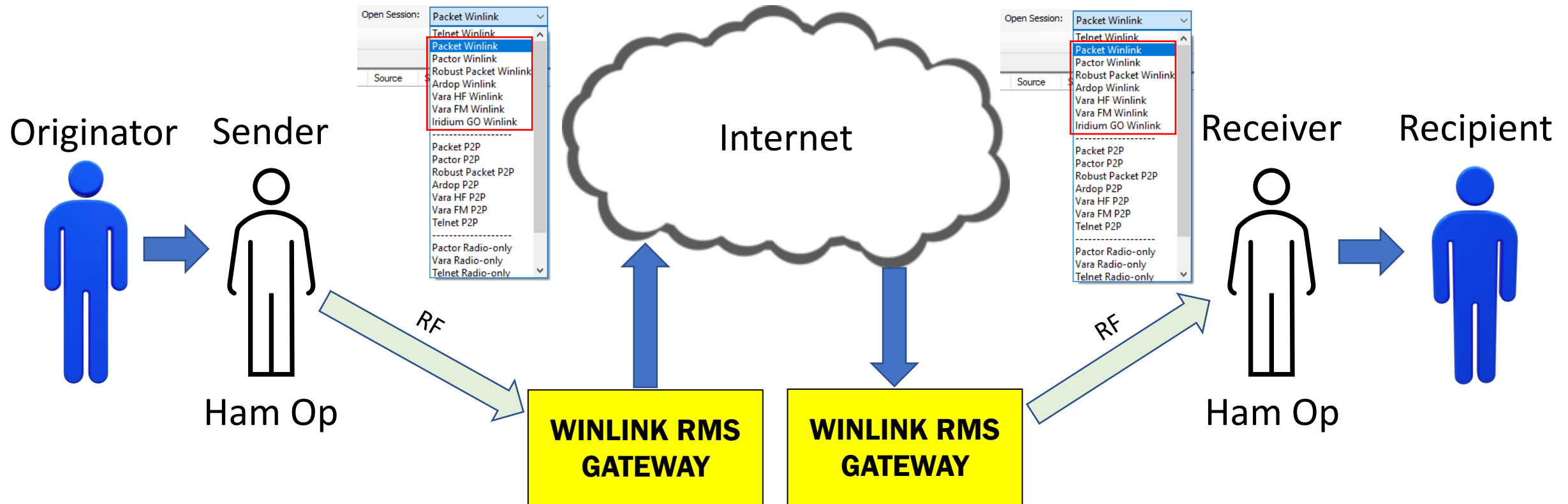
If one party has Internet access, but the other party does not, then at least one RF communications path usually comes into play.

# Winlink Message Flow



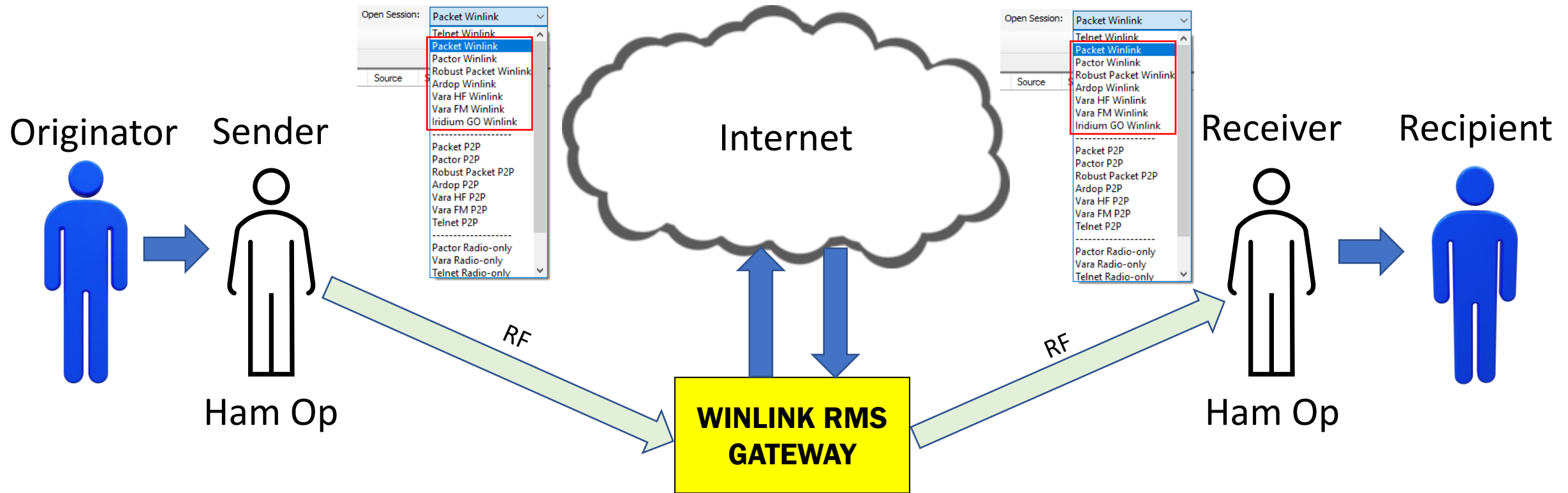
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# Winlink Message Flow



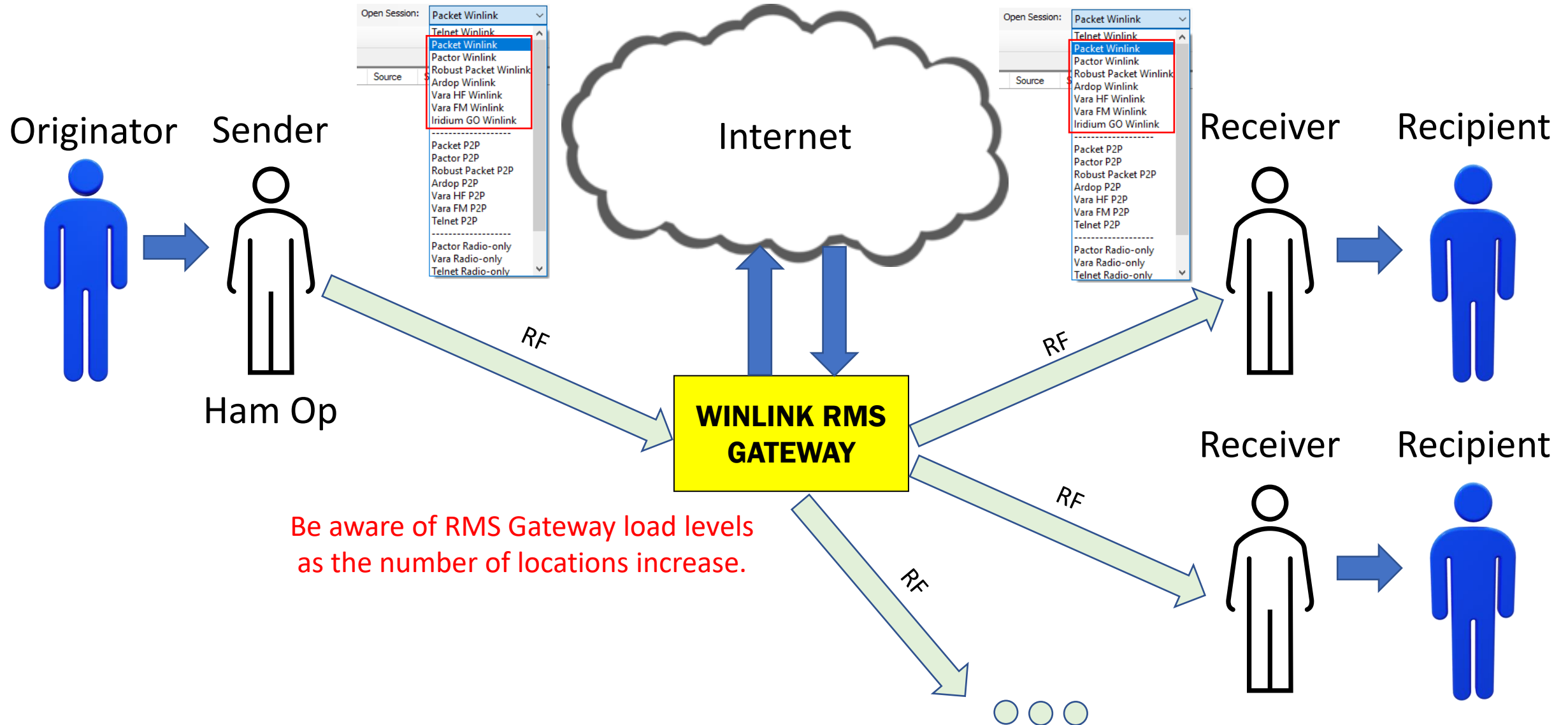
If neither party has Internet access, then RF access methods come into play.

# Winlink Message Flow



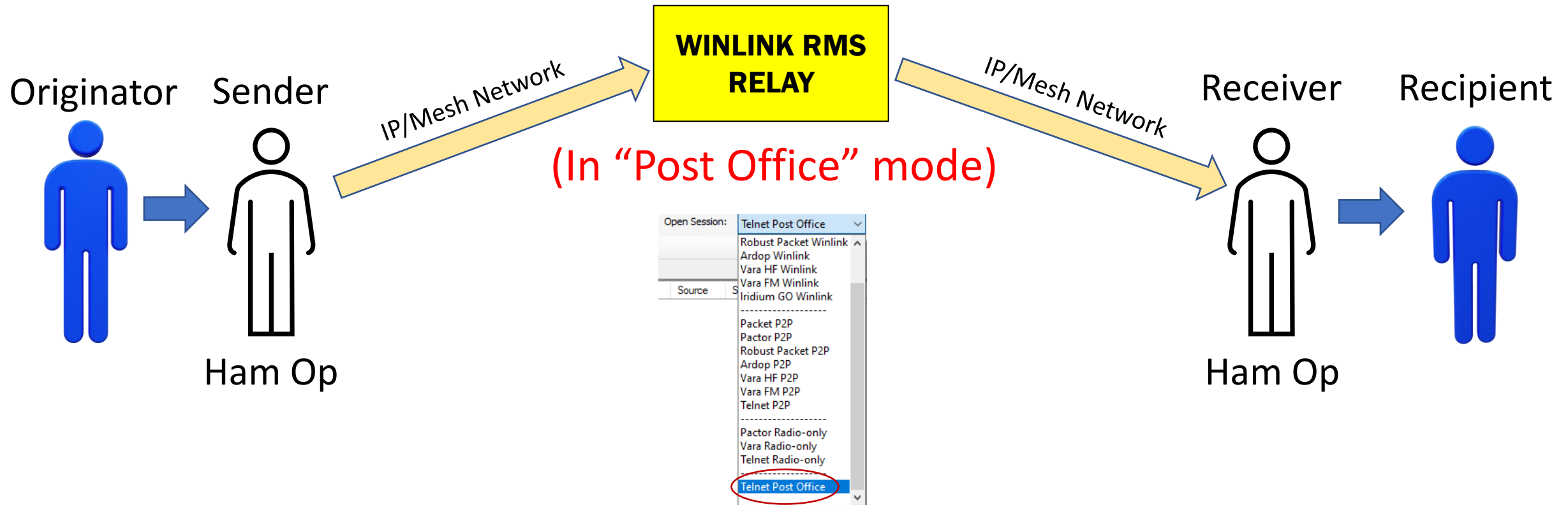
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# Winlink Message Flow



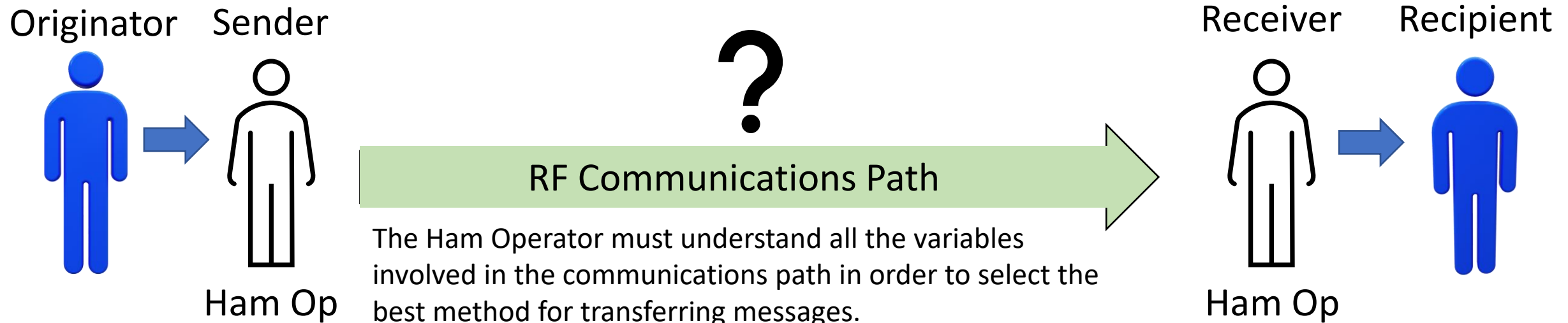


# Winlink Message Flow



RMS Relay is a store-and-forward message handler that doesn't require the Internet and accepts Winlink type messages.  
Very useful on IP/Mesh networks.

# Message Flow



The Ham Operator must understand all the variables involved in the communications path in order to select the best method for transferring messages.

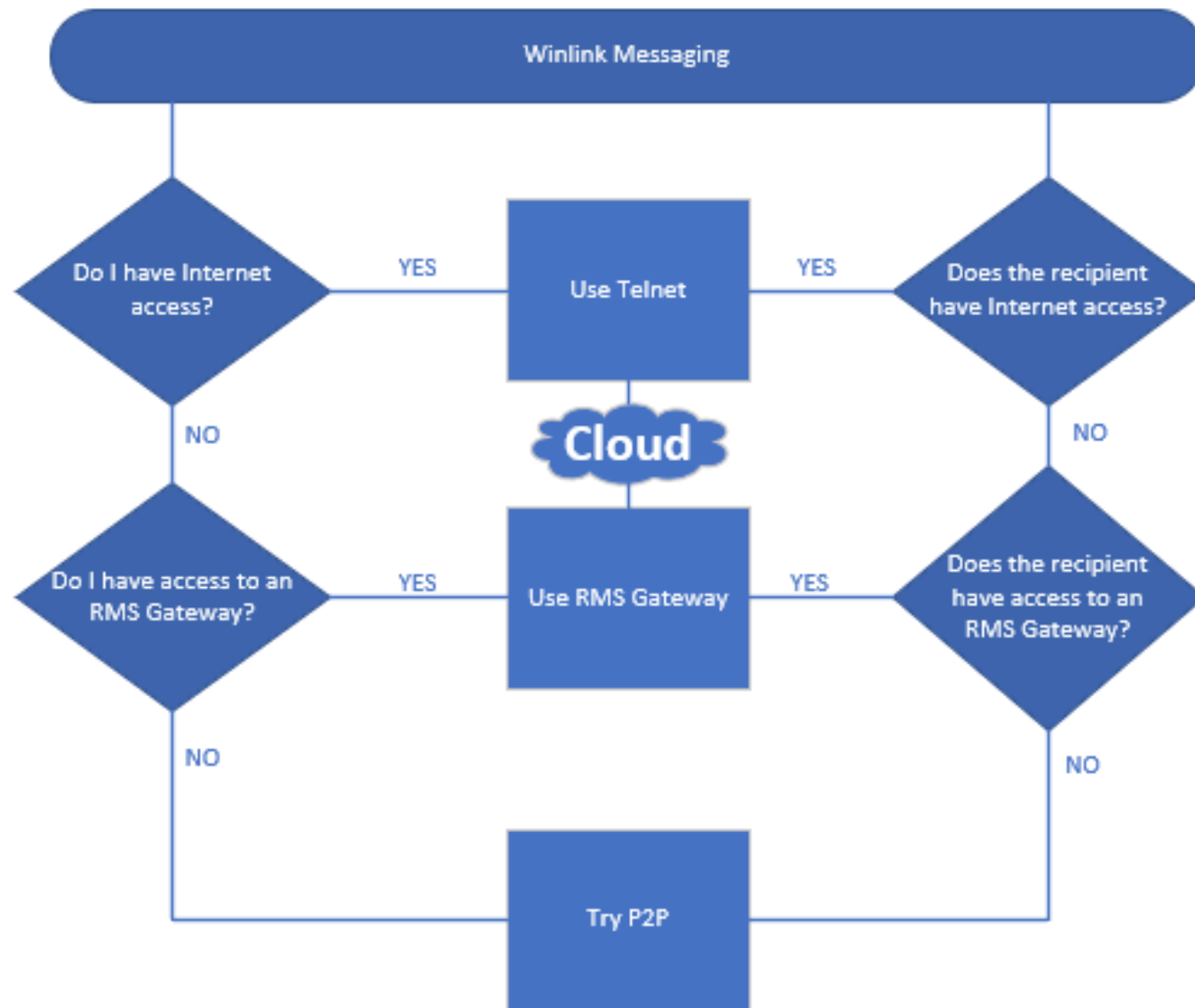
- Where am I and where are they? How far apart are we?
- What physical or geographical barriers exist between us?
- What communication tools are available on each end?
- What communication facilities ("digipeaters"), if any, are available in between?
- What is the skill level and licensing level on each end?
- Who is the recipient (call sign, tactical name, etc.)?

# Basic Questions

- Where am I?
  - Do I have V/UHF capability?
    - If yes, then are there RMS gateway stations that I can reach reliably?
    - How much power am I running?
    - What is my antenna system?
  - Do I have HF capability?
    - If yes, then how much power am I running and what is my antenna?
    - What bands can I operate on?
- Where are they?
  - Do they have V/UHF capability?
    - If yes, how much power? What is their antenna system?
    - Do they have a V/UHF RMS gateway station within reach of their location?
  - Are they close enough such that V/UHF P2P is a possibility?
  - Do they have HF capability?
    - If yes, how much power and what is their antenna?
    - What bands can they operate on?

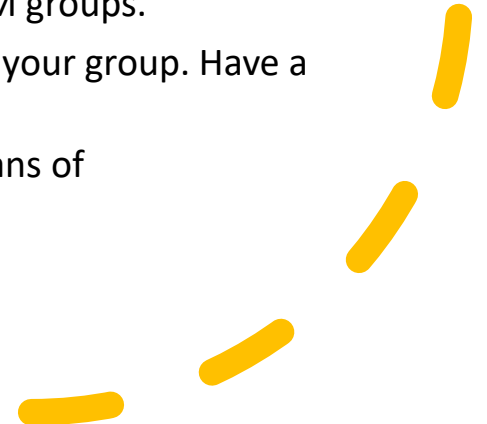
# WINLINK MESSAGE TYPE

Basic Questions



# Things To Consider

- If both the sender and recipient have Internet access, use a Winlink message type and Telnet.
- If using an RMS Gateway, always be mindful of the possible load on the Gateway.
- Learn what Winlink resources are in your area (RMS Gateways, Digipeaters, etc.) <https://winlink.org/RMSChannels>
- Know which HF RMS Gateways you can connect with reliably during various times of the day and year.
- Know your local geography.
- Test known field locations (EOCs, Hospitals, Shelters, Rest Stops, etc.) for both P2P and RMS Gateway possibilities.
- Keep your digital go-kit in working order. Test it regularly.
- Practice Winlink regularly to stay familiar with the software and keep it updated.
- Practice using local V/UHF RMS Gateways and HF RMS Gateways on a regular basis.
- Educate others on digital communications (it's not as easy as pushing a PTT button.)
- Conduct regular exercises within your ARES, RACES, AUXCOMM groups.
- Develop Winlink Standard Operating Procedures (SOP) within your group. Have a plan!
- Always try to have backup options available if the primary means of communication fails.
- Practice, practice, practice!!!







Thank  
you!

