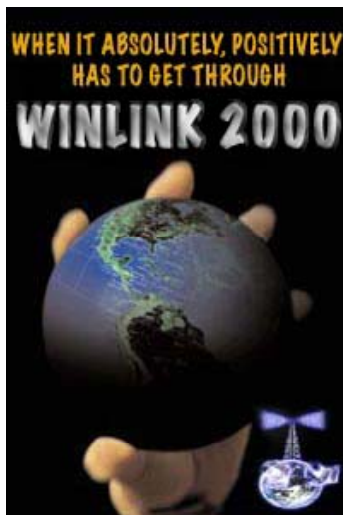




Winlink 2000

Digital Messaging in the 21st Century



Gary J Takis, NNN0KUL
Region Ten Conference – 9 May 2009

NNN0KUL@winlink.org

Subjects to cover



- What is WinLink?
- The Founders
- The History
- The Mission
- The System 1
- How does it work?
- CMS Topology
- RMS Topology
- The System 2
- The Users
- The Real Users
- Why WL2K for Emcom?
- What's Up?
- The Client Programs
- Airmail & Paclink
- Does it really work?
- URLs of Interest
- Credits
- Questions...

What is Winlink?



- Winlink 2000 (WL2K) is a global amateur radio service. Remember, ***there is no privacy over amateur radio.***
- It is subject to amateur radio regulations of the country where each participating station is located.
- On **HF PACTOR**, the radio users of the Winlink 2000 system initiating a contact are present as control operators, and therefore, WinLink 2000 operations do not fall within the category of "automatic control" per U.S. FCC Part 97.221 as described within Part 97.221, such operations are either under "automatic control" or "local or remote control."
- Winlink 2000 complies with FCC Part 97 Section
 - §97.109 Station control, for 3rd Party traffic rules
 - §97.219(c) for 3rd Party traffic Content Rules
 - §97.309 for data emission codes
 - §97.403 Safety of life and protection of property

The Founders



- What is now the Winlink 2000 development team has evolved since the early 1980's. The original program, Amlink (Amtor-Packet link), an earlier DOS-based mailbox program and the first versions of Winlink were the brainchild of **Victor D. Poor, W5SMM**, then a semi-retired engineering executive and one of the major forces behind the development of the modern microprocessor.



- * **Hans Kessler, N8PGR**
- **Steve Waterman K4CJX** →
- * **Jim Jennings W5EUT**
- * **Jim Corenman KE6RK** (*created the Airmail program*)
- **Rick Muething, KN6KB**



* *Indicates not currently on WDT*

The Current WDT



Victor D. Poor, W5SMM

Rick Muething, KN6KB

Steve Waterman, K4CJX

Tom Lafleur, KA6IQA

Lee Inman, K0QED

Don Moore, KM0R

Bud Thompson, N0IA

Tyler Gaillard, KT4XD

Lor Kutchins, W3QA

Neil Hughes, VE1YZ

Don Trotter, VE1DTR

Phil Sutherland, VK6KPS

Peter Woods, N6PRW

Michael Kasteli, OE1MCU

Gerhard Kmet, OE3ZK

The History



- **Early 1980's** – **ApLink** (Amtor-PACKET Link) created
- NavyMARS asked for a smaller client version to use aboard ships called **PAMS**
- **Mid-80's** – With the advent of Windows programming language, Vic upgraded the program to **Winlink Classic** (never meant to interface with Internet email)
- **80-s/90's** – Hans enhanced **Winlink Classic**
- Late1990's – **NetLink** provided the interface between radio digital and internet email
- **1998** - Steve, Rick, Hans, and Vic, met in Cleveland, Ohio, and planned **Winlink 2000**, (1999-to-present).
- **The rest is history!**

The Mission



WL2K MISSION

Our primary mission is to provide our agencies with the value-added services they want.

They want “interoperability among all available services.”

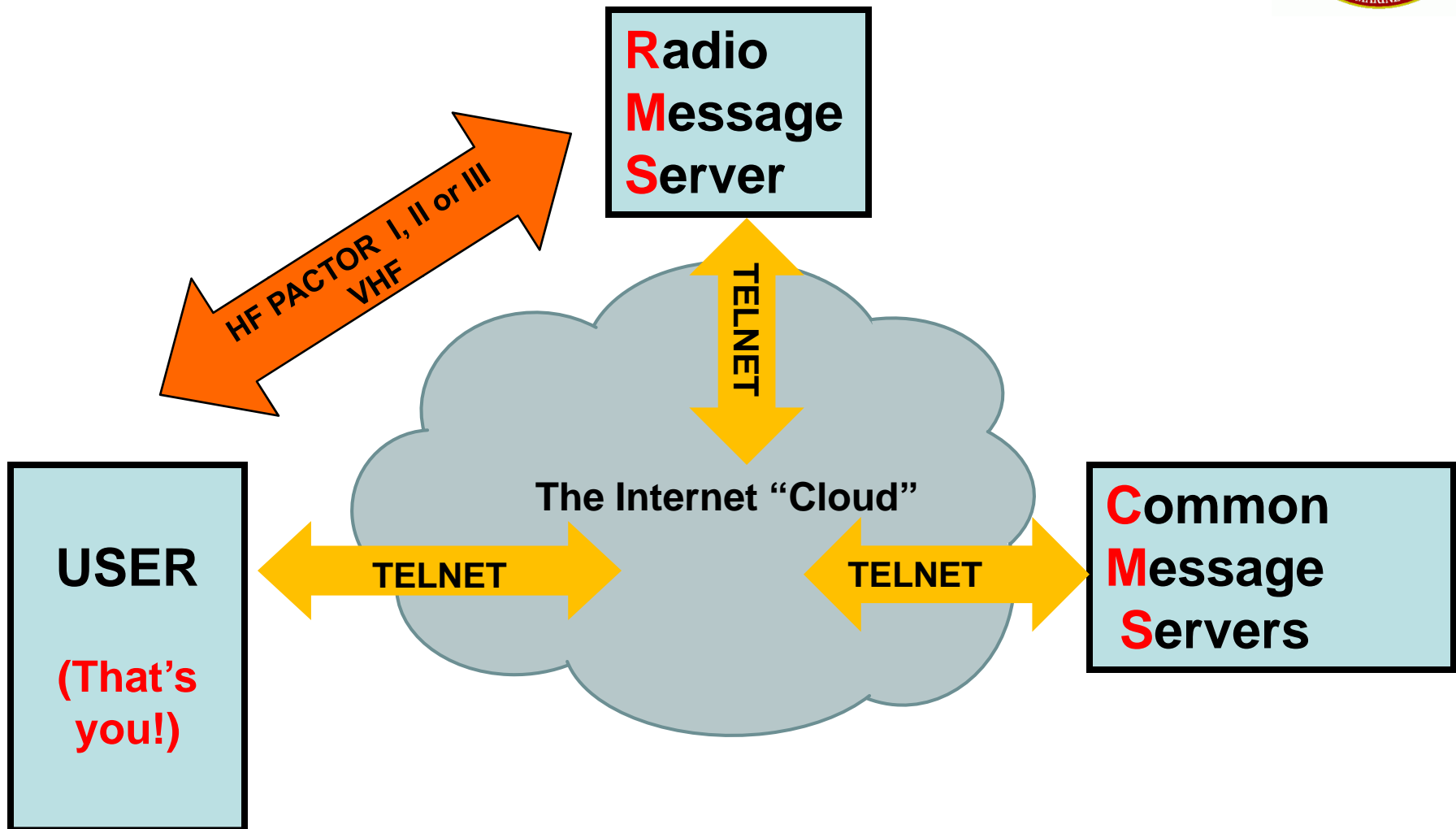
Today, that includes digital messaging in the form of de facto e-mail extendibility from all available resources. We have such a network in place. It is now up to us to be organized and trained with the proper tools to respond to any casualty event. Certainly, in such events, being available to provide de facto e-mail where it is otherwise unavailable is key.

The System – Part 1

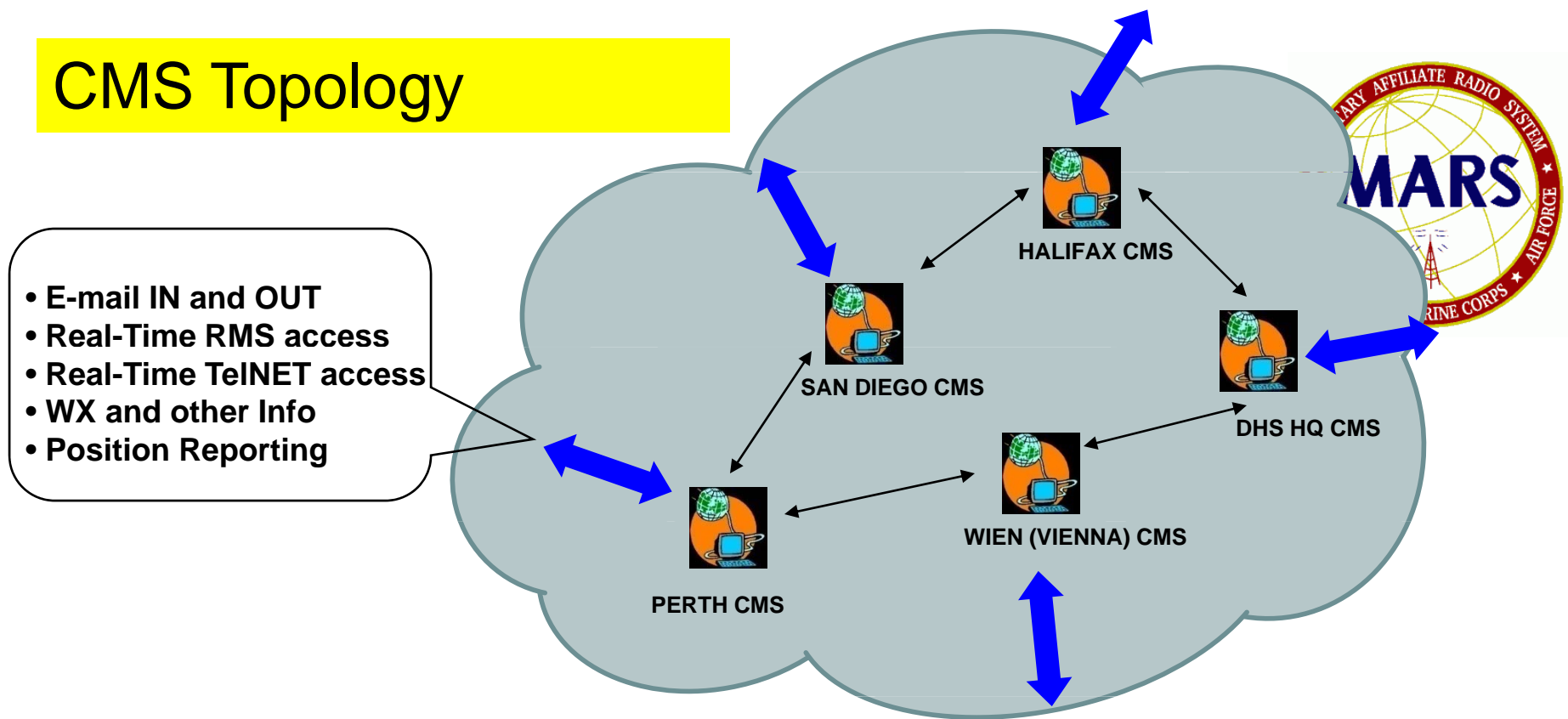


- **5** Full-time, Redundant, Mirror image, Common Message Servers (CMS)
 - Halifax, San Diego, Washington DC, Perth Australia, and Vienna, Austria,
 - All in hardened sites, providing excellent reliability, worldwide.
 - Wash DC is DHS sponsored, Halifax is Canadian Sponsored
- **165** total HF Radio Message Servers, worldwide
- **2** major **Service Classes** maintaining separate operations.
 - Public & EmComm & Amateur
 - Government (MARS controlled).
- More than 346 VHF/UHF entry points in CONUS.
- Over **99%** system availability since Nov, 1999.

How does it work?

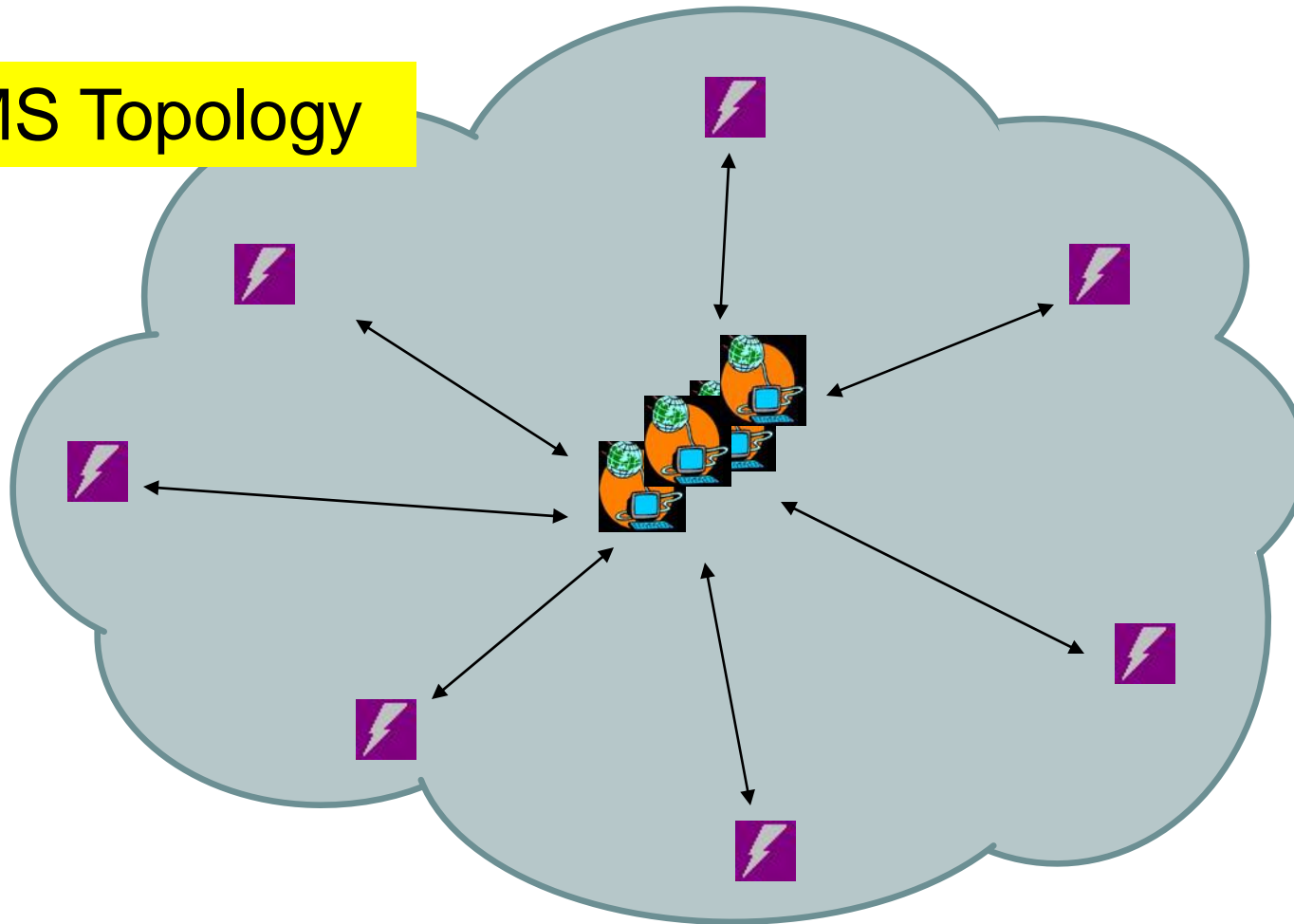


CMS Topology



- Mirror image, redundant Common Message Servers (CMS) provide:
 - **IETF RFC 2821 de facto e-mail** between Winlink 2000 users and Internet Recipients over telnet, Web mail or Radio links.
 - **Retrieval of Weather** and other information available as files or URL pages from the Internet.
 - **Position Reporting** for Mobile applications.

RMS Topology



- Radio Message Servers “RMS” are always connected to the CMS System via the Internet in a **star network topology**, serving as radio nodes on the Winlink 2000 network.
 - RMS Pactor for HF provides short or long haul availability to internet e-mail.
 - RMS Packet for VHF/UHF “last mile” e-mail availability to Internet e-mail.
 - RMS Relay provides continual communications with the CMS system when no 11 Internet is available to bridge the “last mile.”

The System – Part 2



- Geography of RMS stations
- “Last Mile” RMS Packet provides real-time access to the CMS system
- RMS Gateways provides real-time access to the CMS system
- Two separate clients – Airmail & Paclink

The System – Part 2

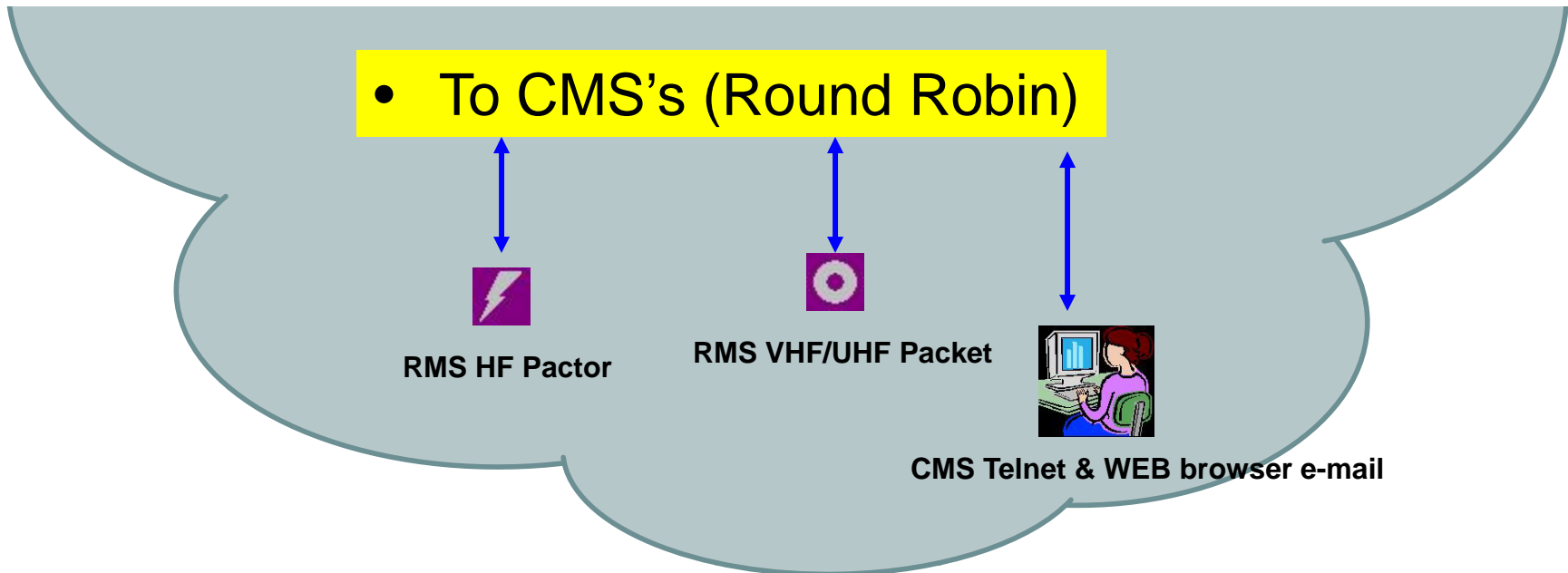


- HF RMS stations operate on +/- 5 HF frequencies
- 151 amateur frequencies (**80 Tri-Service MARS**) are assigned to RMS stations based on geography
- HF RMS stations 'scan' the frequencies on a rotational basis
- Scanning operates at about 1ch each 5-10 seconds.
- When they detect a calling station, they connect.
- When the transaction (up/down messages) is complete, they resume scanning

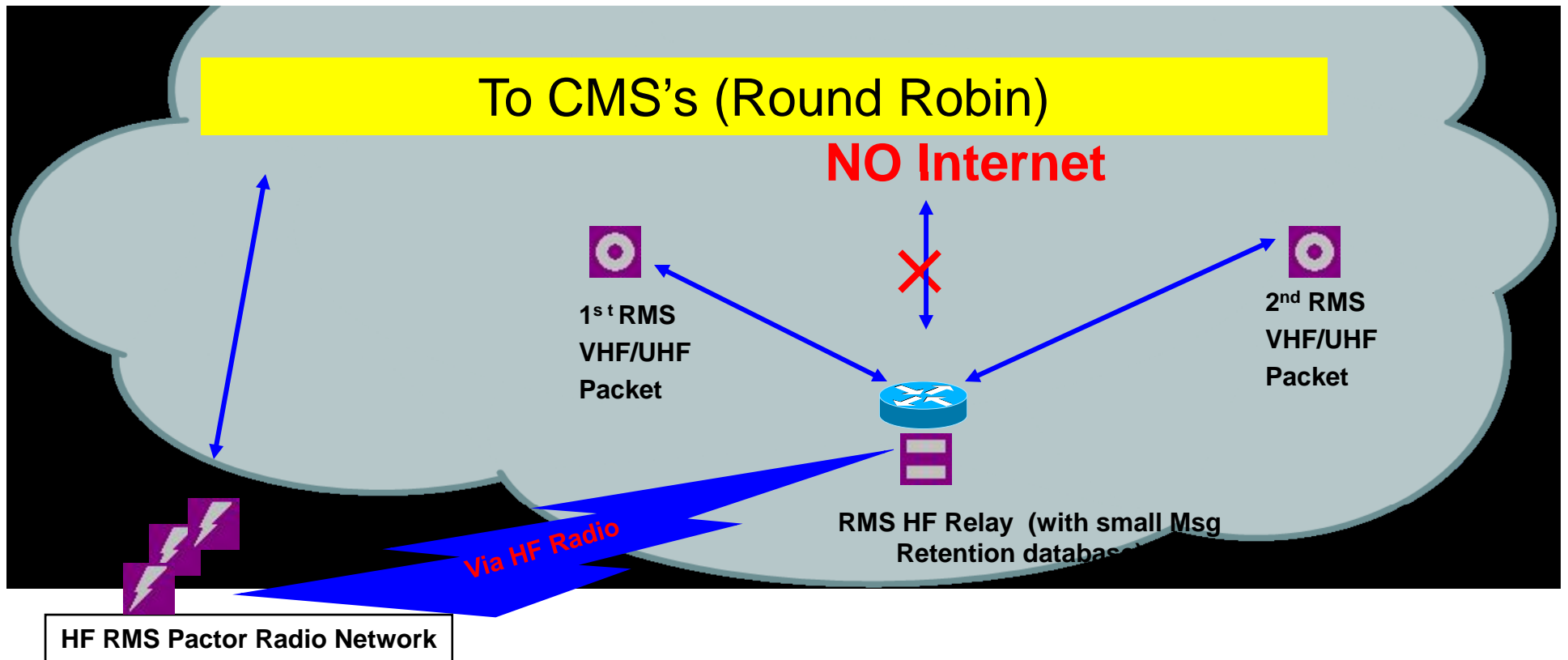
HF RMS PACTOR Stations Worldwide



85 Public **30 EMCOMM** **45 MARS** **1 UK Cadet Force**

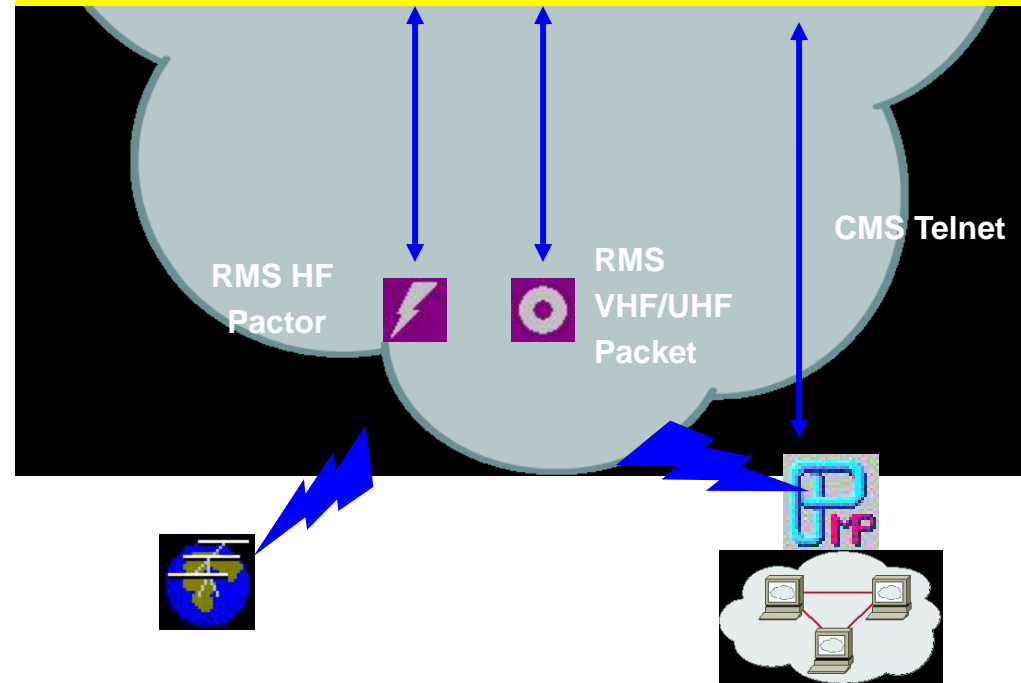


- RMS Gateways provides real-time access to the CMS system from many locations, worldwide. It actually bridges HF radio to the Internet.
 - The RMS systems are separated into “classes” such as the “Government” class, or the Amateur Radio class.
 - In each class, the RMS system nodes are all redundant, mirror images of each other.
 - Should an RMS Pactor Gateway be separated from the Internet, it will become *invisible* to the radio user.
 - Radio users understand that they may check in on any RMS Pactor Gateway within their licensed class, depending on propagation, and the RMS availability to the Internet.



- “Last Mile” RMS Packet provides real-time access to the CMS system from the “last mile,” in support of local areas such as County governments, or other communities of interest.
 - Multiple RMS Packet (VHF/UHF) gateways may be linked to one RMS Relay for local hubbing and HF relay to an RMS Pactor gateway.
 - **RMS Relay allows RMS Packet to reach the rest of the Winlink 2000 system via HF (Radio) Pactor when local Internet is broken.**

- To CMS's (Round Robin) Via Internet



- Two separate clients:
 - **Airmail**, a single application client.
 - **Paclink MP**, a single/Multiple user client with standard POP3 e-mail clients as a user interface. Contains automatic hierarchical routing, secure login, and “auto-precedence.”

Users



- Approximately **15,000** client accounts
- Approximately **10,000** Weekly Radio users communicating with over **98,000** Email recipients,
- An average of **150,000** messages or **280,000** minutes **monthly**
- An average duration of **3.4** Minutes at **3,600** bytes/per message.
- The average time from message origination to pickup for delivery is approximately **1.0** minute, regardless of distance.
- The greatest growth is now in Emergency Communications preparedness.

The Real Users



In a “Real-Life” Mass Casualty Event, we must look at WL2K from an “Interoperability” Point-of-view.



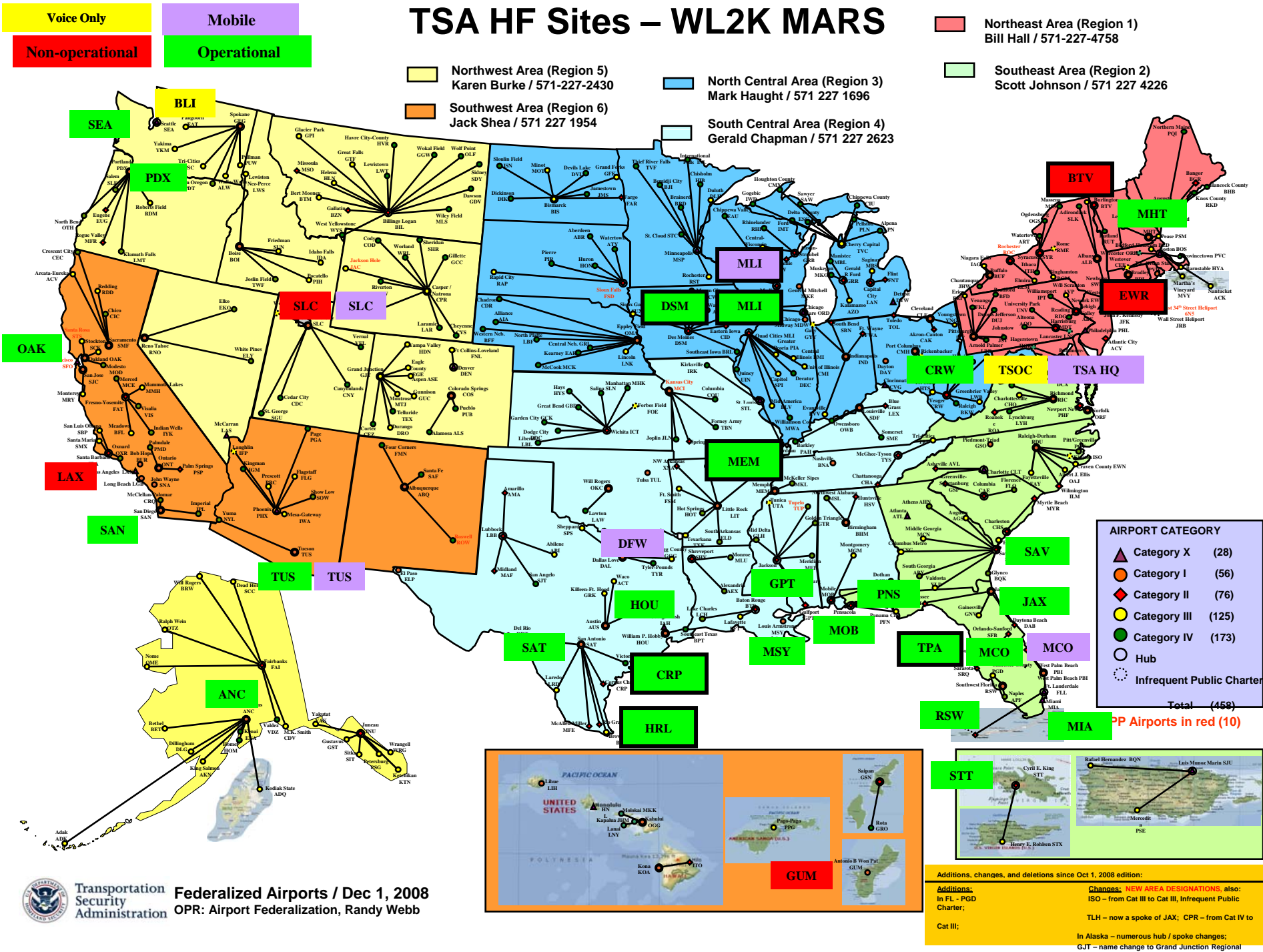
Why Winlink is used for EmComm



- Uses **de facto e-mail**, the World's standard for written communications.
- Provides "last Mile" **local** radio digital messaging **directly** for served agencies, using **existing** e-mail programs, on **existing** computers, with **no** additional "invasive" software...seamlessly and transparently.
- Provides **wide area** coverage from **inside** a disaster area **without** the Internet, and with a minimum amount of additional client hardware or software.
- Has a proven record of reliability, and continues to be responsive to the needs of its user communities.

Although Winlink 2000 has proven itself to be attractive to the agencies we wish to serve, like anything else, it must first be Implemented by those who will benefit by its use.

TSA HF Sites – WL2K MARS



Transportation Security Administration
 Federalized Airports / Dec 1, 2008
 OPR: Airport Federalization, Randy Webb

Changes: NEW AREA DESIGNATIONS, also:
 ISO – from Cat III to Cat III, Infrequent Public Charter;
 TLH – now a spoke of JAX; CPR – from Cat IV to Cat III;
 In Alaska – numerous hub / spoke changes;
 GJT – name change to Grand Junction Regional

What's up?



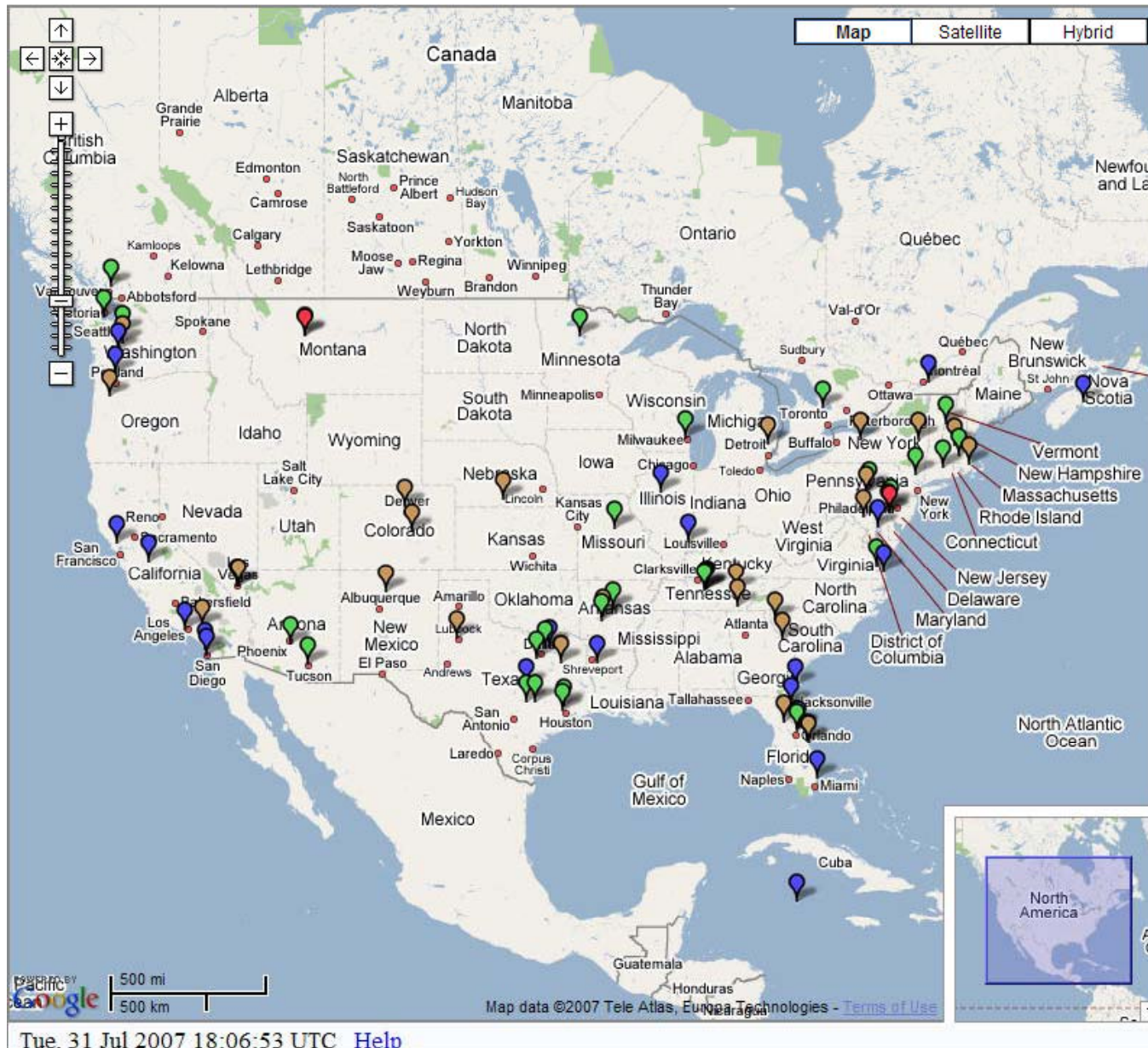
- **Real Time status**
 - CMS servers
 - HF Pactor RMS stations
 - VHF RMS stations
 - Other
- **Presentation**
 - Raw Data available
 - Google Graphics available

Real-Time Status - CMS

Common Message Server Status			
View Outline Track			
@2008/04/07 07:58 UTC	State	Last Update	Status Message
CMS Site - Halifax		2008/04/07 07:58 UTC	On-Line
CMS Access Port	Running	2008/04/07 07:57 UTC	
CMS Inquires	Running	2008/04/07 07:57 UTC	
CMS Position Reports	Running	2008/04/07 07:57 UTC	
CMS Queue Processor	Running	2008/04/07 07:58 UTC	
CMS Site Monitor	Running	2008/04/07 07:58 UTC	
CMS SMTP Client	Running	2008/04/07 07:58 UTC	
CMS SMTP Server	Running	2008/04/07 07:57 UTC	
CMS Telnet Server	Running	2008/04/07 07:57 UTC	
CMS-CMS Link	Running	2008/04/07 07:57 UTC	
CMS Site - Perth		2008/04/07 07:58 UTC	On-Line
CMS Access Port	Running	2008/04/07 08:00 UTC	
CMS Inquires	Running	2008/04/07 08:00 UTC	
CMS Position Reports	Running	2008/04/07 08:00 UTC	
CMS Queue Processor	Running	2008/04/07 08:00 UTC	
CMS Site Monitor	Running	2008/04/07 08:01 UTC	
CMS SMTP Client	Running	2008/04/07 08:01 UTC	
CMS SMTP Server	Running	2008/04/07 08:00 UTC	
CMS Telnet Server	Running	2008/04/07 08:01 UTC	
CMS-CMS Link	Running	2008/04/07 08:00 UTC	
CMS Site - SanDiego		2008/04/07 07:58 UTC	On-Line
CMS Access Port	Running	2008/04/07 07:58 UTC	
CMS Inquires	Running	2008/04/07 07:57 UTC	
CMS Position Reports	Running	2008/04/07 07:57 UTC	
CMS Queue Processor	Running	2008/04/07 07:57 UTC	
CMS Site Monitor	Running	2008/04/07 07:58 UTC	
CMS SMTP Client	Running	2008/04/07 07:58 UTC	
CMS SMTP Server	Running	2008/04/07 07:57 UTC	
CMS Telnet Server	Running	2008/04/07 07:57 UTC	
CMS-CMS Link	Running	2008/04/07 07:57 UTC	
CMS Site - Washington		2008/04/07 07:58 UTC	On-Line
CMS Access Port	Running	2008/04/07 07:58 UTC	
CMS Inquires	Running	2008/04/07 07:57 UTC	
CMS Position Reports	Running	2008/04/07 07:57 UTC	
CMS Queue Processor	Running	2008/04/07 07:58 UTC	
CMS Site Monitor	Running	2008/04/07 07:58 UTC	
CMS SMTP Client	Running	2008/04/07 07:57 UTC	
CMS SMTP Server	Running	2008/04/07 07:57 UTC	
CMS Telnet Server	Running	2008/04/07 07:58 UTC	
CMS-CMS Link	Running	2008/04/07 07:57 UTC	

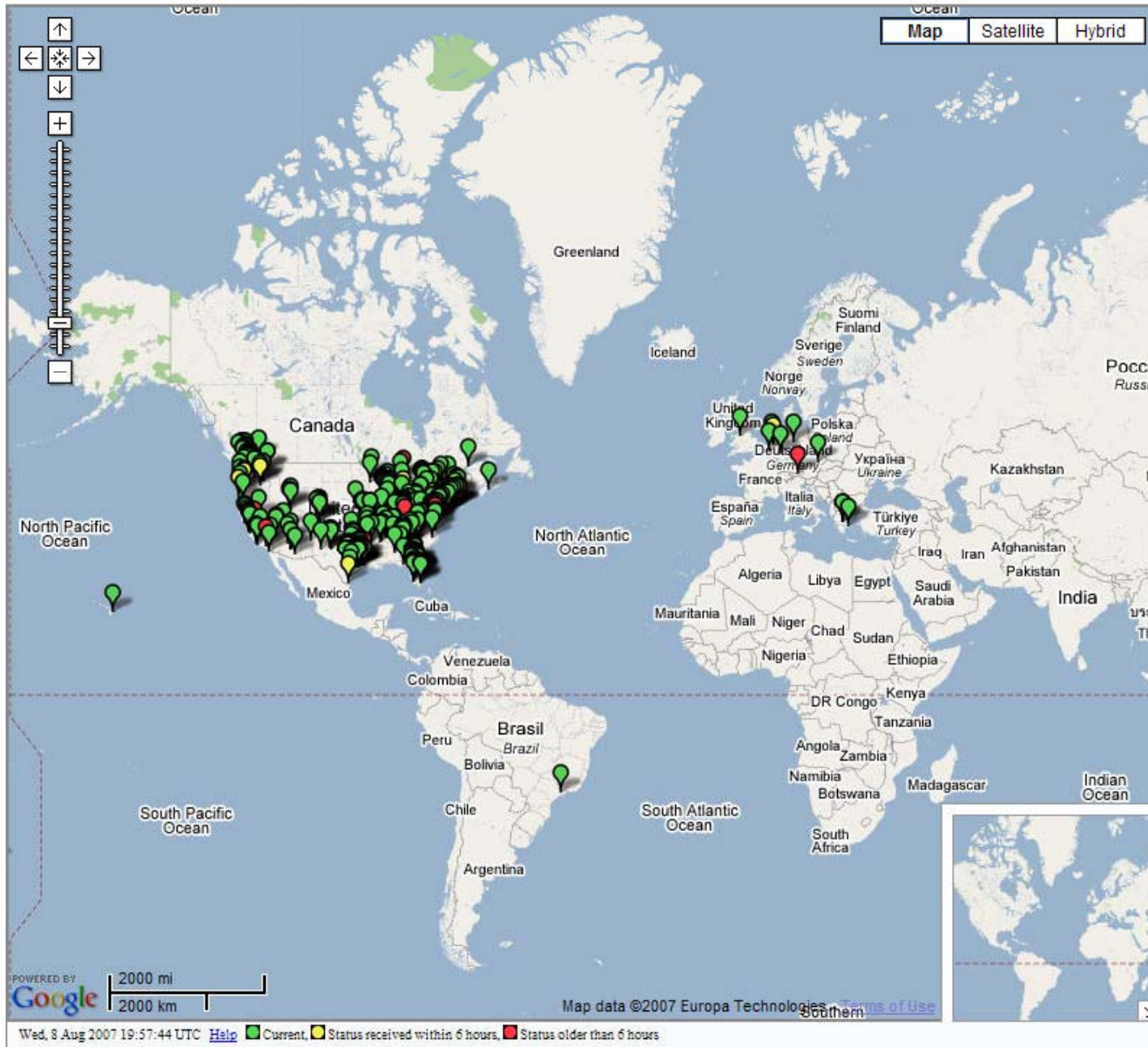
Vienna, Austria
 “Wien”
 not shown

Real-time Status - ALL HF RMS



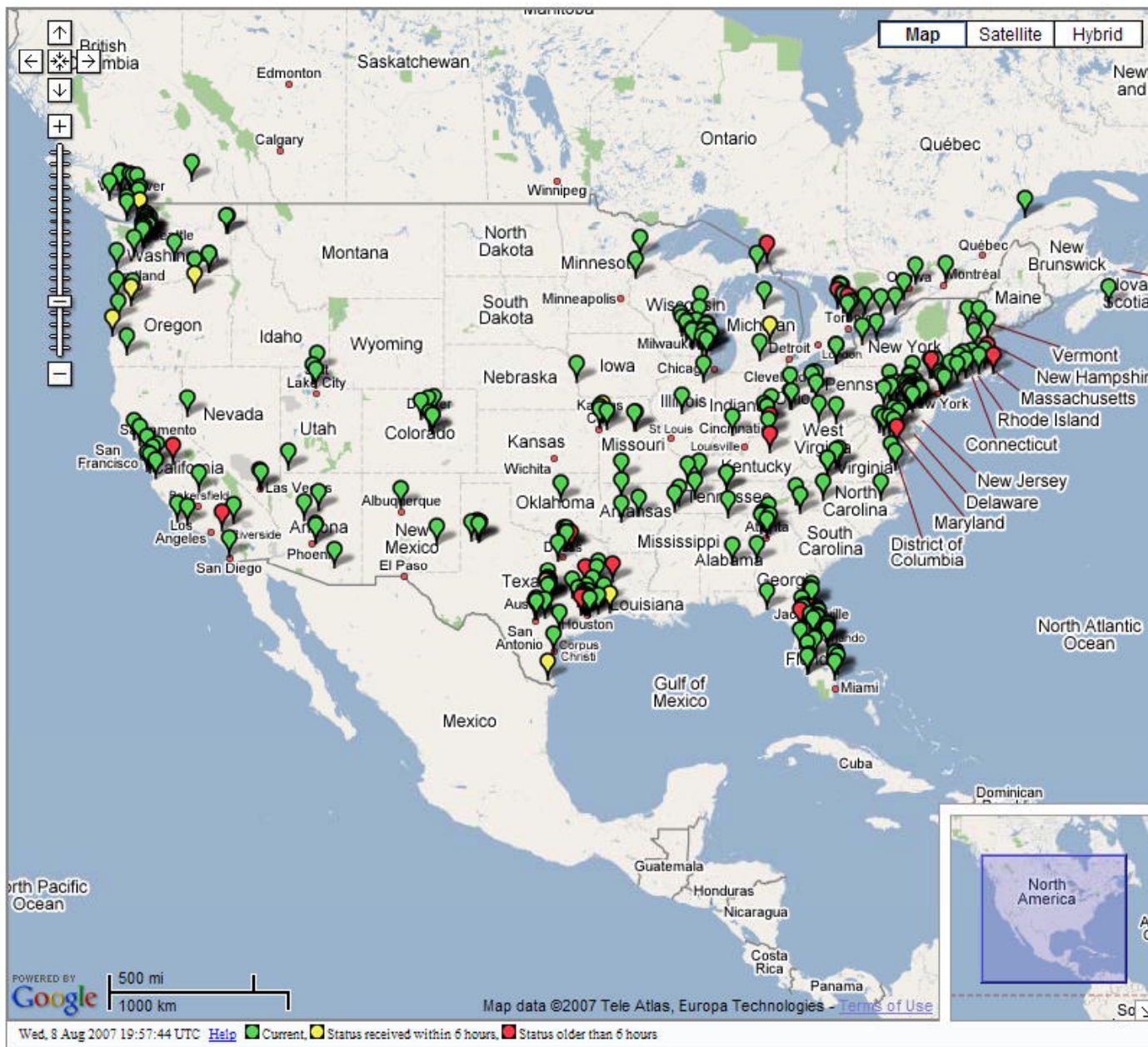
- Blue = Public
- Green = EmComm
- Brown = MARS
- Red = Off-line

Real-Time Status – VHF RMS



VHF/UHF
Telpac/RMS Packet:
346 Active shown
MARS VHF numbers
increasing (not
shown).

REAL TIME STATUS - TELPAC/VHF RMS



MARS NOT SHOWN

Near Real-Time Proactive User Position Reports



MARS NOT
SHOWN

Real-Time Status – MARS HF RMS



Client Programs



- **Airmail**

- Written by Jim Corenman, KE6RK
- Adapted for MARS use (v3.3.0.81)
- Uses NTIA/ITS ICEPAK program for propagation predictor

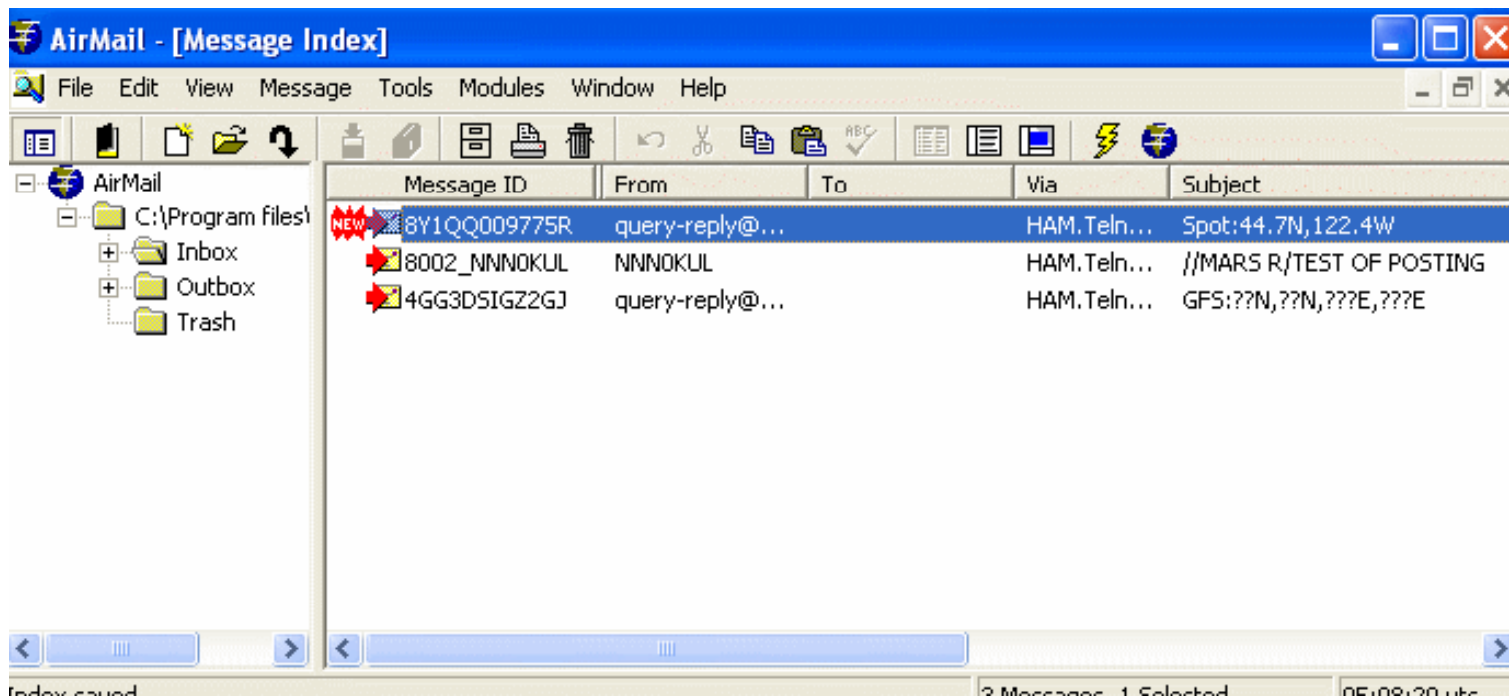
- **Paclink**

- Written by Rick Muething, KN6KB
- 3 Versions
 - Original Paclink - obsolete
 - PaclinkMP – current
 - PaclinkW – Beta testing
 - Paclink – Final solution w/embedded WINMOR

Airmail



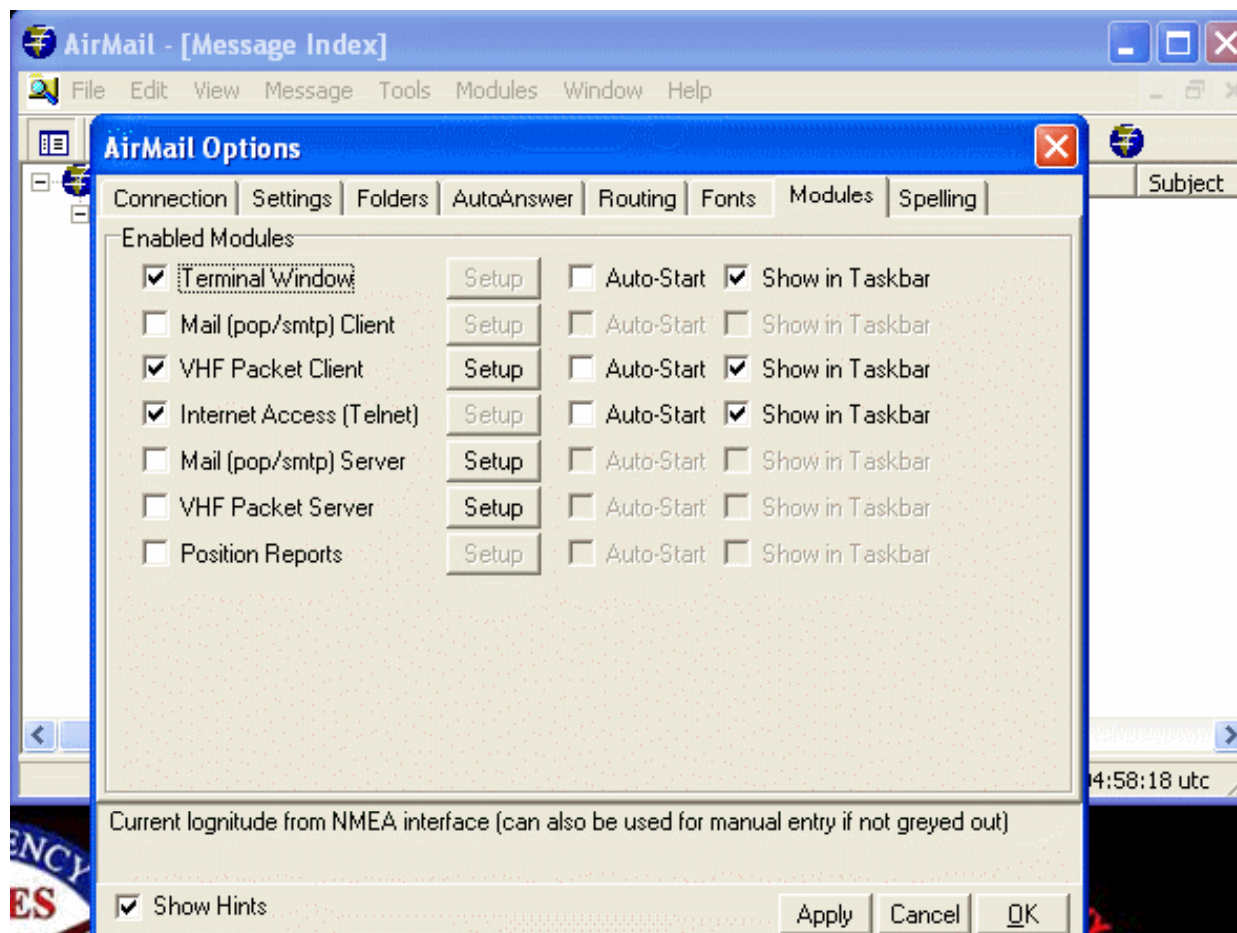
Written by Jim Corenman KE6RK



Airmail



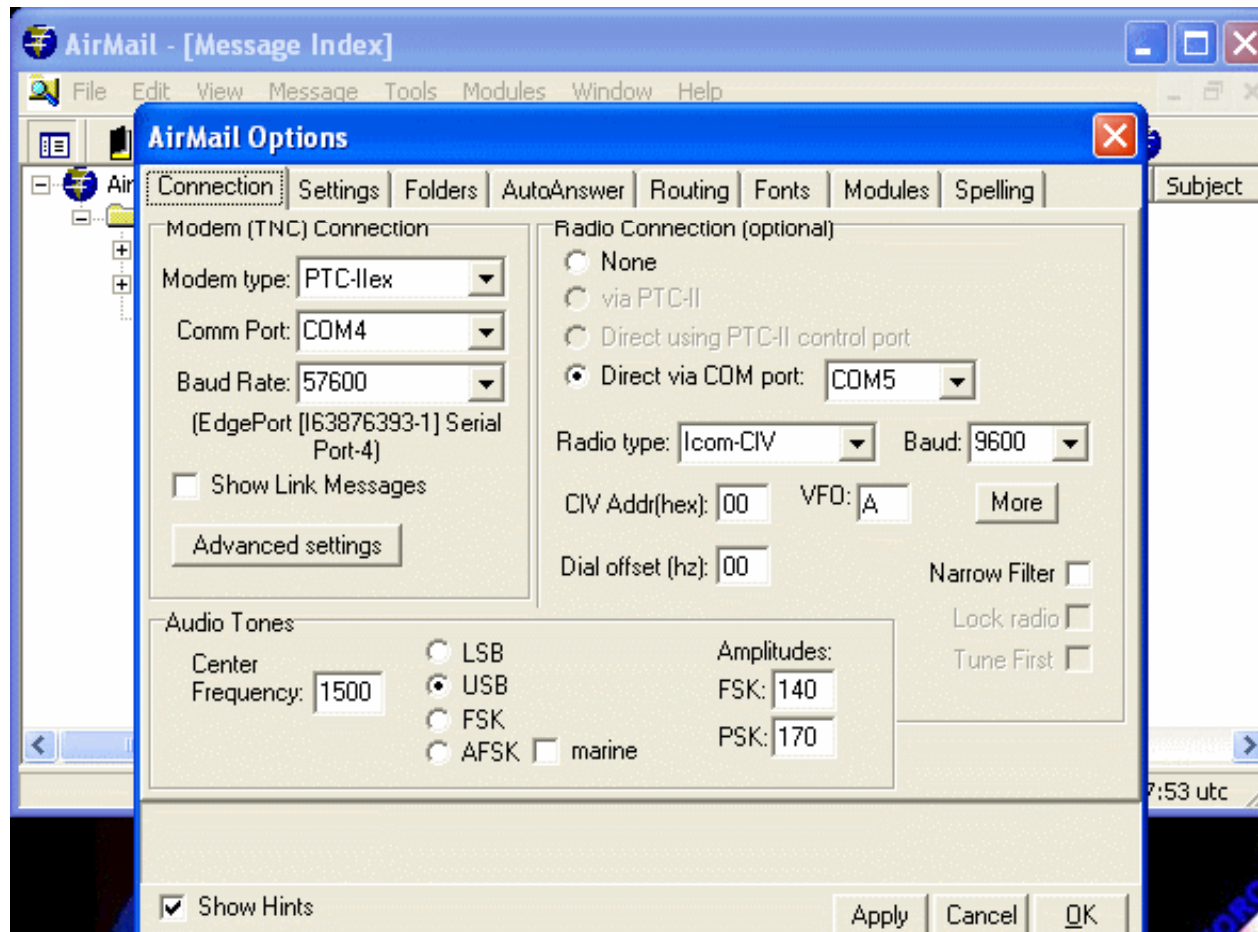
Module selection



Airmail



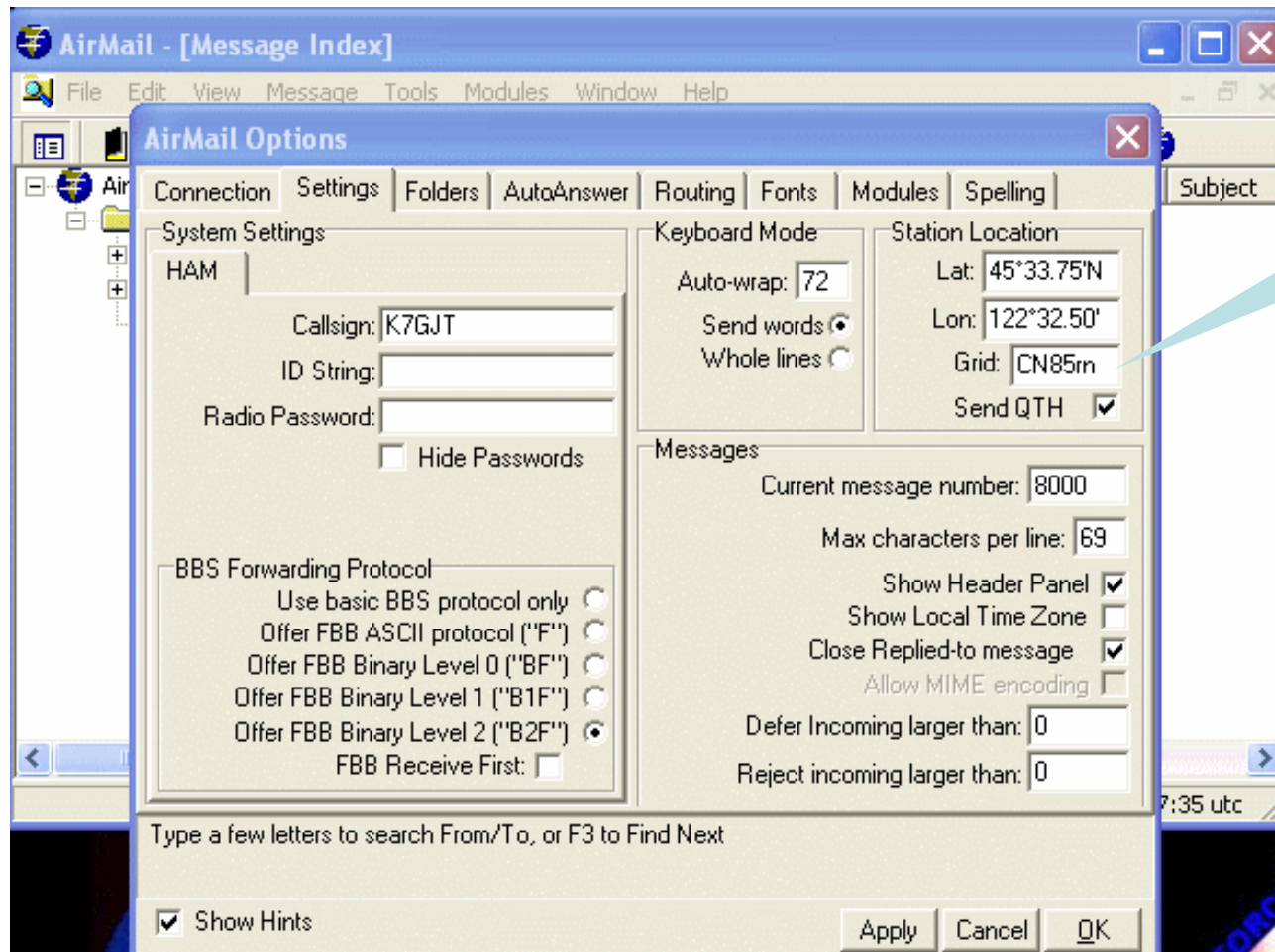
Setup Screen 1



Airmail



Setup Screen 2



Filling in grid square will auto-populate Lat/Lon

Airmail



Internet Module (TELNET) (transaction example)

The screenshot shows the Airmail software interface. The main window is titled "Internet Access (Telnet)". It has a menu bar with "File", "Edit", and "Tools". Below the menu bar is a toolbar with a green circle, a red stop sign, a hand icon, and a printer icon. A dropdown menu shows "WL2K". To the right are buttons for "Settings", "Delete", and "New". The main text area shows a log of the telnet session:

```
2009/04/03 04:38:33 Opening connection to: SERVER.WINLINK.ORG:8772
2009/04/03 04:38:33 Connected to: SERVER.WINLINK.ORG: [199.106.113.130:8772]

Callsign :
K7GJT
Password :
*****
[WL2K-2.0.0.11-B2FIHM$]
SanDiego CMS >
[AirMail-3.3.081-B2FHIM$]
;WL2K de K7GJT (CN85m)
FF
FQ
Session End
2009/04/03 04:38:45 Telnet Port Disconnected
```

A yellow callout box with a pointer points to the text "SanDiego CMS >". The callout box contains the text "Connected to San Diego CMS". At the bottom of the window, there are fields for "Tx Data" (0/0) and "Rx Data" (0/0 bytes). Below these are checkboxes for "Before connecting, first dial:" and "then hang up". There are also fields for "Auto check" with checkboxes for "Check every" and "min at" and "minutes after the even interval". At the bottom right are buttons for "Check All", "Cancel", and "Close".

Airmail



HF Terminal (PACTOR)

The screenshot shows the Airmail software interface. The main window is titled "AirMail - [Message Index]" and has a menu bar with "File", "Edit", "View", "Message", "Tools", "Modules", "Window", and "Help". Overlaid on this is a "Terminal" window with its own menu bar: "File", "Edit", "View", "Control", "Mode", "Help". The terminal window has a toolbar with icons for a green light, a red stop sign, a musical note, a speaker, a keyboard, and a power button. Below the toolbar, there are two dropdown menus: one set to "W7BO" and another set to "3622.2(p3)". The terminal text area displays the following red text:

```
2009/04/03 04:50:12 PTC-Ilex modem initialized OK  
< Modem serial#: 0100000E84B62E68 >  
< Professional (Pactor-3) firmware ver: 3.9, P-3 license OK >
```

A yellow callout box with a black border and a pointer to the text area contains the text: "Airmail Confirms TNC is ready to go". At the bottom of the terminal window, there are two data fields: "Tx Data" showing "0/0 bytes" and "Rx Data" showing "0/0 bytes". Below these fields, a status bar indicates "Factor3: Standby: Occupied" and "Dial freq= 3620.70 USB".

Airmail



HF Terminal – ‘F8’ propagation predictor

From our location: Lat: 45°34'N, Lon: 122°33'W, Grid: CN85rn

To station location: Lat: 36°06'N, Lon: 086°48'W, Grid: EM66oc

Parameters: Freq(khz): 07076.9,07101.2#,14076.9,14106.7#,03631.2,03631.2#,10123.9,10141.2#,181 Sunspots: 100 SFI: 100 Date: 2009/04/03 K4CJX, Nashville/TN: Distance= 1703 NM at 97°T

Reliability: Reliability SNR

Pre-Calc: **Update:**

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
3631.2		1	5	11	7	8	8	9	11	18	26	41	21											
3631.2		1	5	11	7	8	8	9	11	18	26	41	21											
7076.9	37	65	80	87	87	85	85	85	90	92	94	95	92	86	56	1								1
7101.2	37	65	80	87	87	85	85	85	90	92	94	95	92	86	56	1								1
10123.9	82	92	96	95	93	93	94	95	98	98	99	99	97	96	94	86	64	2					7	70
10141.2	82	92	96	95	93	93	94	95	98	98	99	99	97	96	94	86	64	2					7	70
14076.9	92	94	93	95	97	94	92	90	82	79	70	76	93	97	97	96	85	79	73	71	71	74	83	91
14106.7	92	94	93	95	97	94	92	90	82	79	70	76	93	97	97	96	85	79	73	71	71	74	83	91
18103.9	94	94	96	93	80	69	58	49	38	21		2	42	85	97	98	99	99	46	52	54	50	97	95
18108.7	94	94	96	93	80	69	58	49	38	21		2	42	85	97	98	99	99	46	52	54	50	97	95

RMS Stations
Closest to farthest

- W7BD
- W7IJ
- KB6YNO
- VE6KBS
- WU3V
- K6IXA
- K6CYC
- KA6IQA
- W6IM
- WB5KSD
- KL7EDK
- WD8DHF
- W9GSS
- WB0TAX
- W9MR
- K4SET
- K4CJX**
- N8PGR
- VE2AFQ

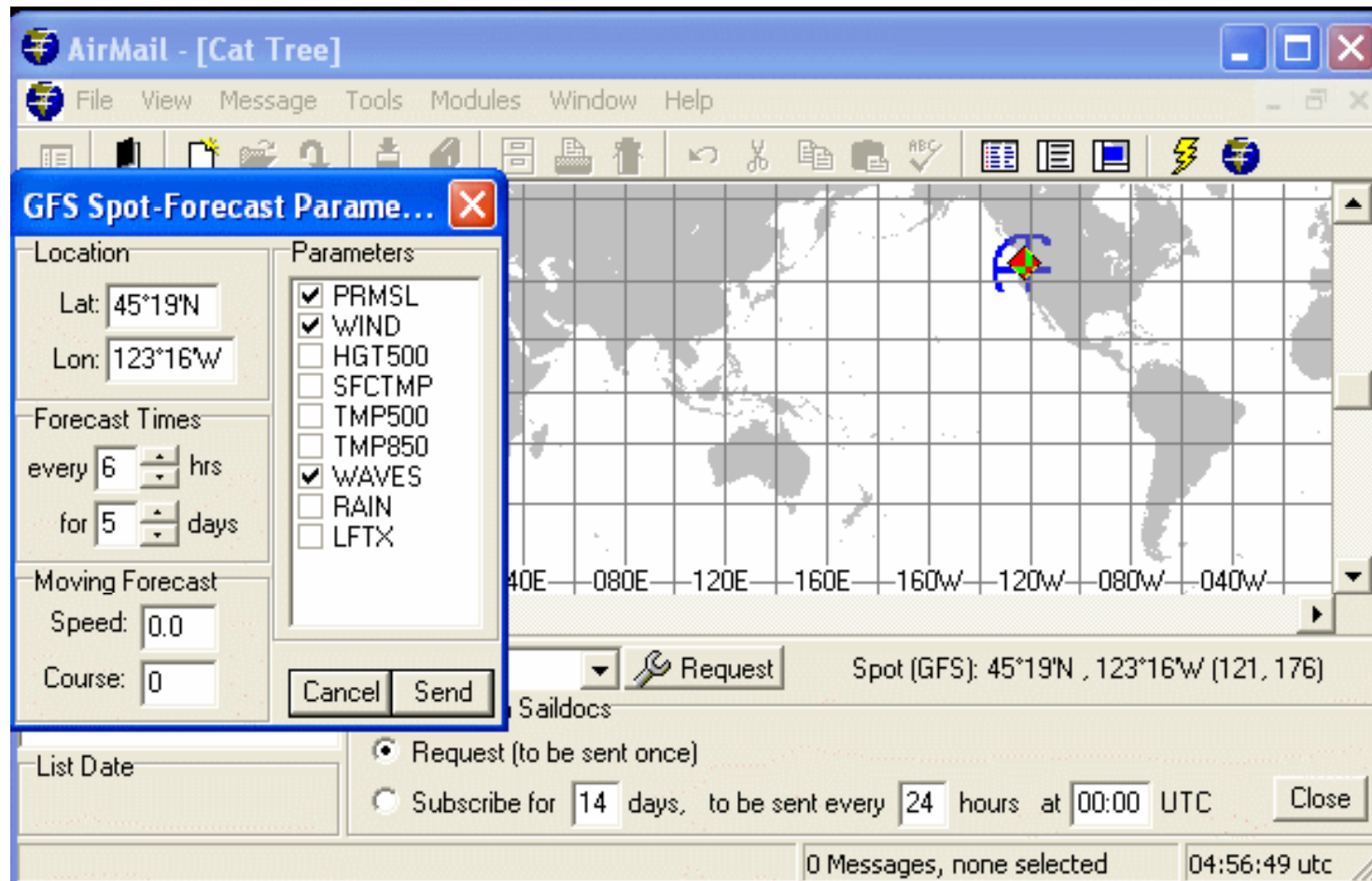
Frequencies

GMT Time

Airmail



GFS Spot-Forecasting capability



Airmail

GFS Spot-Forecast

```
AirMail - [8Y1QQ009775R.msg]
File Edit View Message Tools Modules Window
Data extracted from file gfs090403-00
Data extracted from file ww3-20090403
request code: Spot:44.7N,122.4W|5,6|W

Forecast for 44°42N 122°24W (see note)
Date   Time   WIND DIR  PRESS WAVES DI
      utc   kts deg    hPa  mtrs de
-----
04-03 06:00   8.4 275 1015.8
04-03 12:00   8.1 264 1018.3
04-03 18:00   8.3 259 1020.1

04-04 00:00   7.5 271 1021.2
04-04 06:00   2.9 271 1023.9
04-04 12:00   3.2 124 1024.8
04-04 18:00   4.5 088 1023.5

04-05 00:00   4.4 075 1018.1
04-05 06:00   9.5 095 1020.0
04-05 12:00   9.7 099 1019.7
04-05 18:00   7.5 092 1018.2

04-06 00:00   4.1 058 1015.1
04-06 06:00   9.3 086 1018.2
04-06 12:00   9.1 091 1017.4
04-06 18:00   8.1 082 1014.8

04-07 00:00   5.4 054 1010.3
```



Airmail



Transaction receiving messages

A screenshot of a Telnet window titled "Internet Access (Telnet)". The window has a menu bar with "File", "Edit", and "Tools". Below the menu bar is a toolbar with a green status indicator, a red "STOP" button, a printer icon, a dropdown menu showing "WL2K", and buttons for "Settings", "Delete", and "New". The main text area shows the following text:

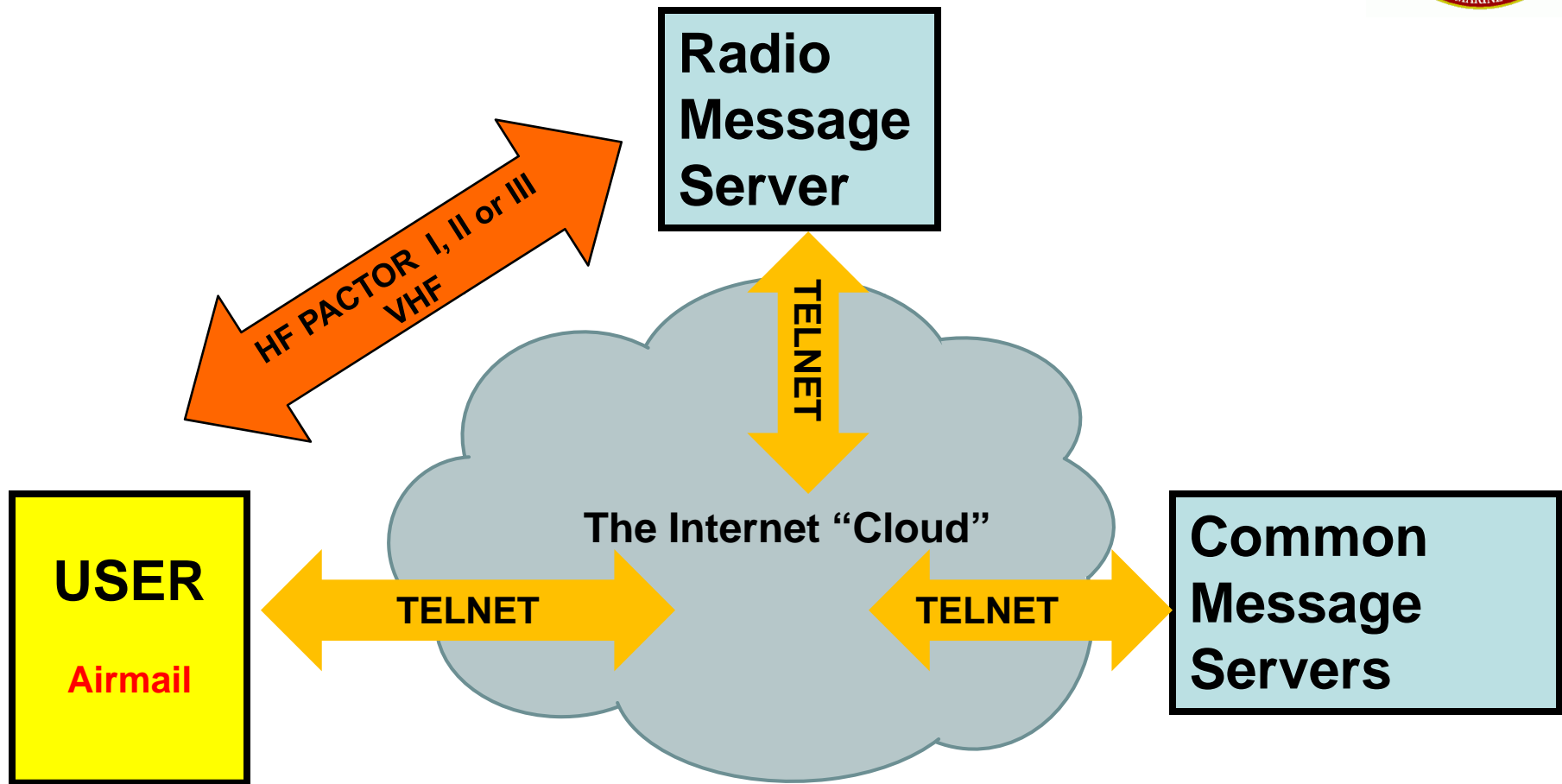
```
2009/04/03 05:05:56 Opening connection to: SERVER.WINLINK.ORG:8772
2009/04/03 05:05:57 Connected to: SERVER.WINLINK.ORG: [203.59.28.61:8772]

Callsign :
K7GJT
Password :
XXXXXXXXXX

[wL2K-2.0.0.11-B2FIHM$]
Perth CMS >
[AirMail-3.3.081-B2FHIM$]
;WL2K de K7GJT (CN85rp)
FF
FC EM 8002_NNNOKUL 156 139 0
FC EM 4GG3DSIGZ2GJ 668 444 0
FC EM 8Y1QQ009775R 4230 2152 0
F> B2
FS YYY
Receiving 8002_NNNOKUL "//MARS R/TEST OF POSTING"...Decoded OK
Receiving 4GG3DSIGZ2GJ "GFS:??N,??N,???E,???E"...Decoded OK
Receiving 8Y1QQ009775R "Spot:44.7N,122.4W"...Decoded OK
;WL2K de K7GJT
FF
FQ
Session End
2009/04/03 05:06:12 Telnet Port Disconnected
```

At the bottom of the window, there are two data fields: "Tx Data" showing "0/0" and "Rx Data" showing "2735/2735 bytes". Below these are checkboxes for "Before connecting, first dial:" and "then hang up". There is also an "Auto check" section with checkboxes for "Check every" and "minutes after the even interval". At the very bottom are buttons for "Check All", "Cancel", and "Close".

How does it work?



Paclink



- Paclink



- Required Internet connection
- Will work with more than one account

- PaclinkMP (Multi Protocol)



- Can use without Internet connection
- Replaced by Paclink 3.0

- PaclinkW (WINMOR)

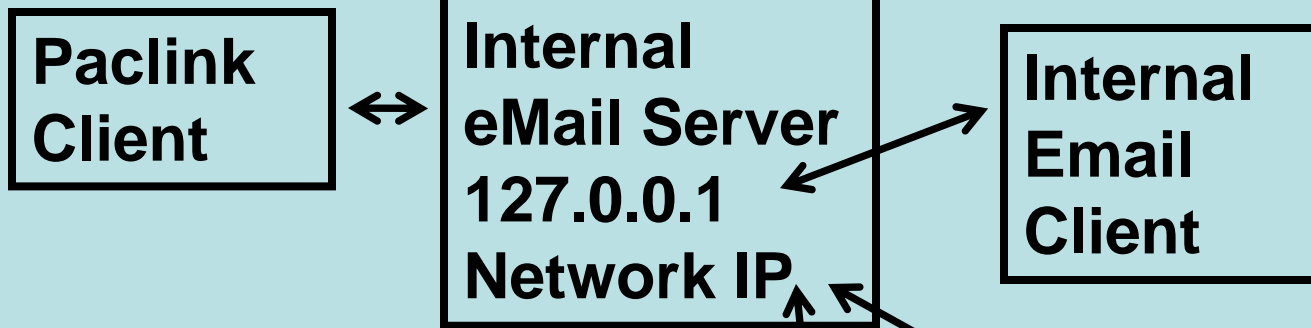


- Can use without internet connection
- **WINMORE** embedded as additional capability

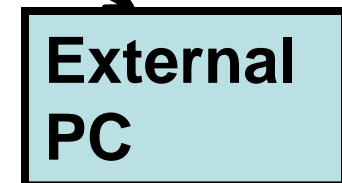
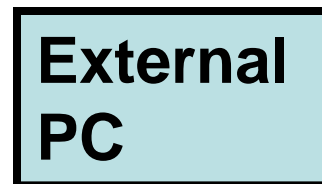
Paclink



Inside your PC



Paclink acts like an email server. The internal as well as the external email clients can connect into it



Paclink



Radio/TELNET window

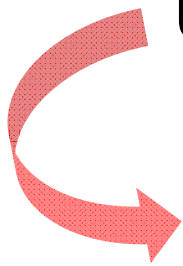
Message Server window

The screenshot shows the PaclinkW software interface. The window title is "PaclinkW - NNN0KUL". It has a menu bar with "File", "Connect", "About", "Logs", "Update", "Help", and "Next Poll in 13 Minutes". The interface is split into two panes. The left pane, labeled "Radio/TELNET window", shows a log of a Telnet session to "MARS WL2K TELNET" on 2009/03/19 at 07:53:00. It includes fields for "Callsign: NNN0KUL" and "Password: *****", and a list of radio links such as "San Diego CMS", "NKK0UL NNN0KUL NNN0GCC NNN-AS010 NNN-AS008 NNN-ASL01", and "WL2K DE NNN0KUL (CN85RO) QTC 0...". The right pane, labeled "Message Server window", displays a list of POP3 links and messages, including "From: NNN0KUL@Winlink.org" and "Subject: //MARS R/TEST". The status bar at the bottom shows "Idle" and "To Clients: 0 To Winlink: 0".

Paclink



Using Paclink w/Thunderbird - 6 MARS WL2K accounts



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The screenshot shows the Thunderbird email client interface. On the left, a folder pane lists six accounts: NNNKUL, NNNOKUL, NNNOGCC, NNN-AS010, NNN-AS008, and NNN-ASL01. Each account has sub-folders for Inbox, Drafts, Sent, Trash, and SPAMfighter. The main pane displays a list of emails from these accounts, with columns for Subject, Sender, and Date. The selected email is from NNN0CC@Winlink.org with the subject "//MARS R/CHNAVMARCORMARS INFO BCST 02-09". The bottom pane shows the email's header and body text.

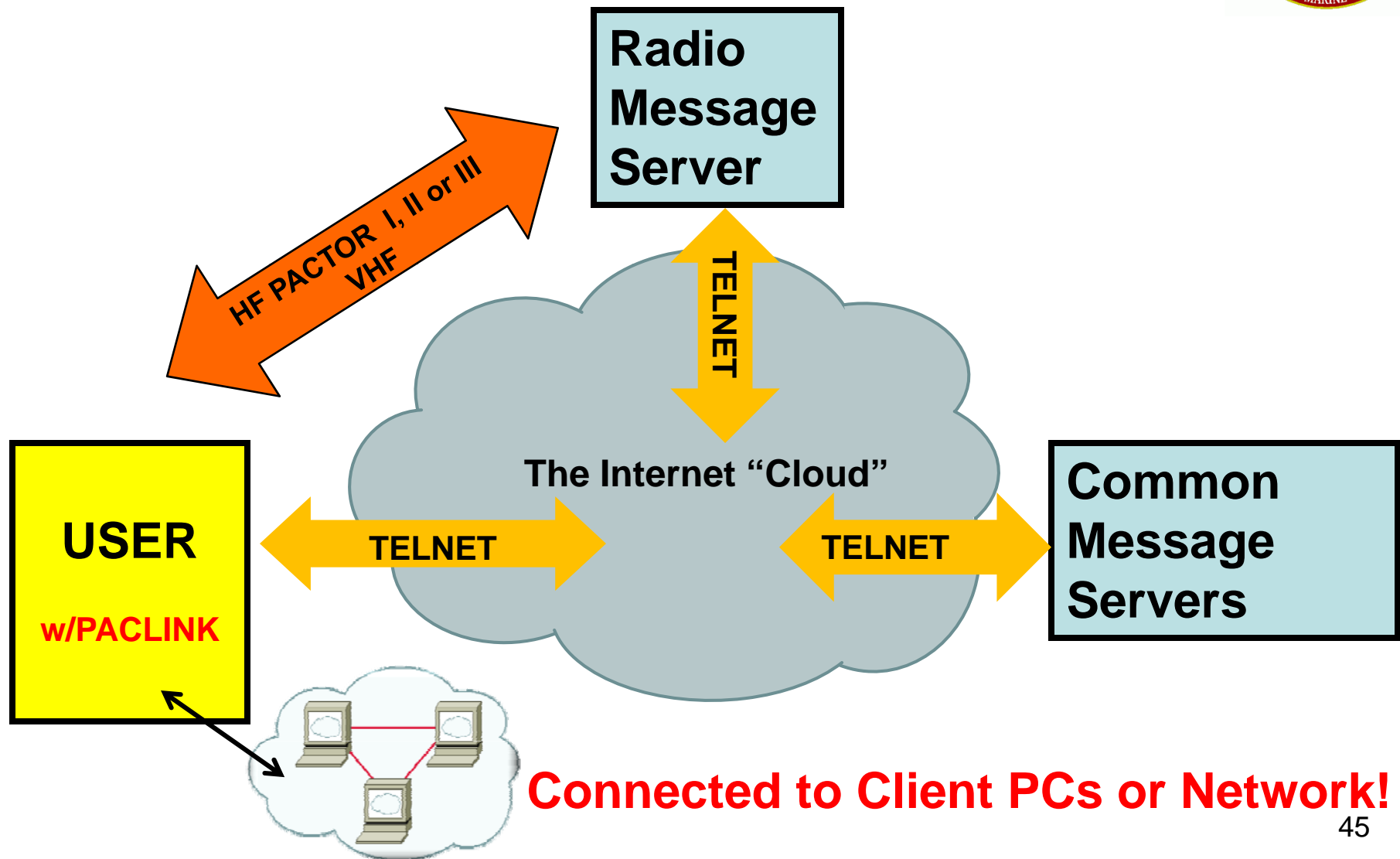
Subject	Sender	Date
//MARS R/0X1C NET	NNN0BP@Winlink.org	1/14/2009 5:58 PM
//MARS R/CHNAVMARCORMARS INFO BCST 02...	NNN0BP@Winlink.org	1/15/2009 6:09 AM
//MARS P/SHARES COORDINATION NETWORK (...)	NNN0BP@Winlink.org	1/15/2009 12:13 PM
//MARS P/SHARES COORDINATION NETWORK ...	NNN0CC@Winlink.org	1/15/2009 4:12 PM
//MARS R/CHNAVMARCORMARS INFO BCST 02...	NNN0CC@Winlink.org	1/15/2009 4:12 PM
//MARS R/0X1C	NNN0CC@Winlink.org	1/15/2009 4:12 PM
//MARS R/CHNAVMARCORMARS INFO BCST 10...	NNN0CC@Winlink.org	3/11/2009 6:39 AM
//MARS R/CHNAVMARCORMARS INFO BCST 10...	NNN0BP@Winlink.org	3/11/2009 6:43 AM
//MARS R/R TEN ECOM BCST 20	NNN0CC@Winlink.org	3/13/2009 7:22 AM
//MARS R/ECOM BCST 20	NNN0BP@Winlink.org	3/13/2009 7:24 AM
//MARS P/ACTUAL EEI Castle Rock, WA.	NNN0KTM@Winlink.org	3/16/2009 6:24 AM
//MARS R/ALNAV 018-09	NNN0CC@Winlink.org	3/16/2009 7:38 AM
//MARS R/ALNAV 019-09	NNN0CC@Winlink.org	3/16/2009 7:38 AM
//MARS R/ALNAV 019/09	NNN0BP@Winlink.org	3/16/2009 8:05 AM
//MARS R/ALNAV 018/09	NNN0BP@Winlink.org	3/16/2009 8:06 AM
//MARS R/TRAINING NEEDED	NNN-ASE01@Winlink.org	3/16/2009 11:09 AM
//MARS R/NMCM ALE ROSTER	NNN0BCL@Winlink.org	3/16/2009 2:34 PM
//MARS R/REGION TEN BCST 02/09	NNN0CC@Winlink.org	3/17/2009 5:08 PM
//MARS R/NNNOASO BROADCAST 02/2009	NNN0BP@Winlink.org	3/17/2009 5:33 PM
//MARS R/TEST	NNN0JBG@Winlink.org	3/18/2009 9:32 AM
//MARS R/ACTUAL INCIDENT EEI MESSAGES	NNN0CC@Winlink.org	3/18/2009 5:30 PM

Subject: //MARS R/CHNAVMARCORMARS INFO BCST 02-09
From: NNN0CC@Winlink.org
Reply-To: NNN0CC@Winlink.org
Date: 1/15/2009 4:12 PM
To: NNN0GCC@Winlink.org
Cc: NNN0EGK@Winlink.org, NNN0GJZ@Winlink.org, NNN0GMO@Winlink.org, NNN0JWF@Winlink.org

DE NNNOASA 005
R 151200Z JAN 2009
FM NNNOASA VA
TO NNNOALL
BT
UNCLAS
SUBJ: CHNAVMARCORMARS INFO BCST 02-09

Unread: 0 Total: 21

How does it work?



WINMOR

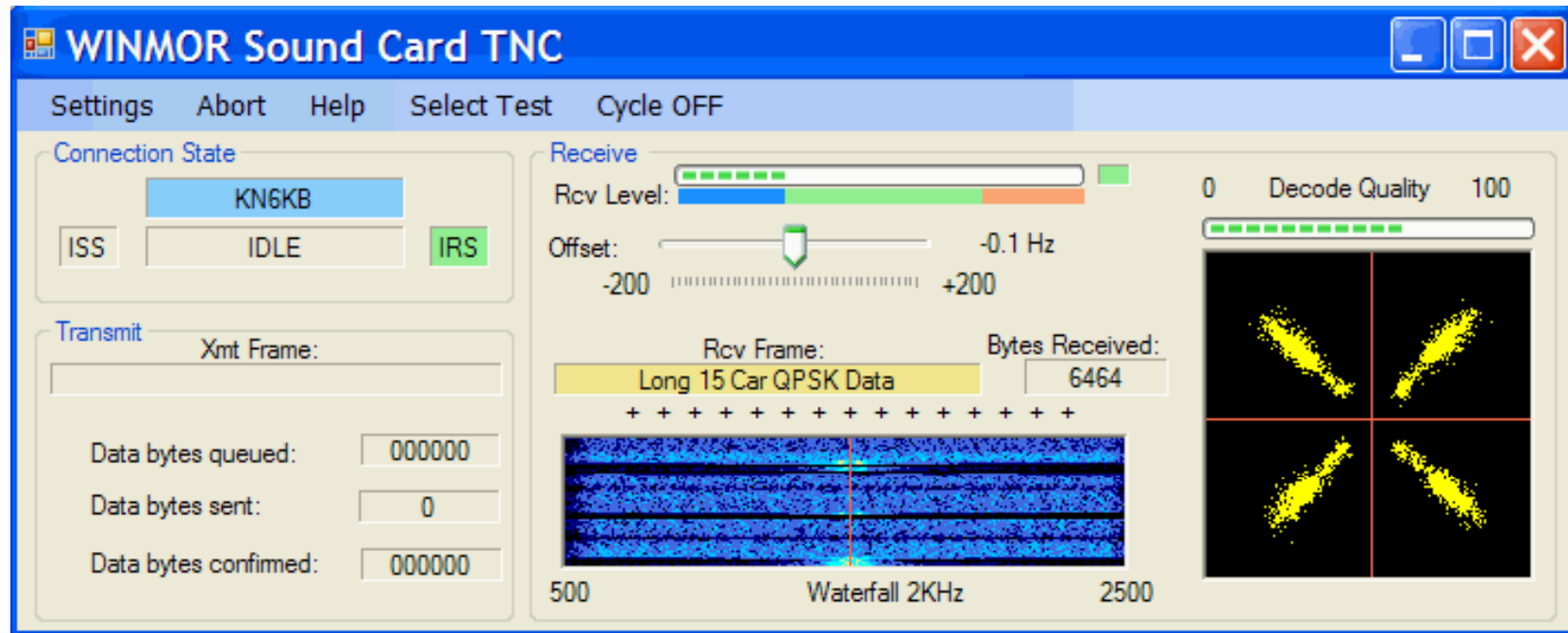


- Rick Muething, KN6KB, is lead coding PaclinkW and RMS HF software
- PC Soundcard ARQ mode for WL2K Digital Messaging
- No external TNC required
- Not a replacement for PACTOR 1, 2 or 3
- This is an additional HF mode for WL2K
- Speed expected to be between P2 and P3
- PaclinkW in Beta 'desktop' testing
- Limited HF RMS testing next step
- To be fully deployed in ???

WINMOR



- Picture of WINMOR client



WL2K at work...



“The Real World,” does it really work?

Example of agency use:

Hurricanes, Typhoons
“The” Asian Tsunami
Failure of IntelSat 804
Forest Fires (US, Australia)
Humanitarian Missions
Health Mercy Missions
Research Missions
Missing/distressed vessels (continual)
Agency EmComm



U.S. COAST GUARD



Homeland Security



FADCA



International Boat Watch Network

Friend Ships

-----Original Message-----

From: Hennigan, Joe

Sent: Friday, March 09, 2007 11:13 AM

To: Chief, Army MARS



Subject: The Department of Homeland Security Sponsorship of Winlink 2000.

The Department of Homeland Security (DHS), Operations Coordination Directorate (OPS) has made great strides over the last 3 months in support of the Military Affiliate Radio System (MARS). In cooperation with Army MARS, and DHS Transportation Security Agency, DHS Operations Coordination Directorate (OC) has installed a WinLink 2000 system, to include hosting one of four redundant, mirror image, Common Message Server (CMS) Hubs, a Radio Message Server (RMS,) and end-user client applications for HF Operations.

WinLink 2000 is a COTS application suite, allowing users the ability to extend an e-mail capability and GPS Positioning data between an HF Radio and the internet. DHS has the capability to literally pass data from anywhere in the world, no matter how austere. DHS is one of many Government Agencies with HF radio capabilities, but this particular solution provides DHS with a unique set of extended capabilities.

The WinLink 2000 system consists of many different components, making it very stable and reliable in times of need. WinLink 2000 is utilized by many Emergency Response Agencies, including the Department of Defense (DoD). The MARS Winlink 2000 radio messaging system can both be contacted through this application via conventional HF/VHF/UHF radio communications, or via standard e-mail through the MARS Winlink 2000 radio e-mail system, to any number of operators throughout the world to get messages promptly delivered where normal standard e-mail does not exist. This is critical to any emergency response requirement.

This capability is proof positive of the DHS's commitment to enhancing emergency communications.

Best regards,

Joe Hennigan,
Director, Technology Support
Operations Coordination Directorate
Department of Homeland Security

URLs of Interest



Winlink 200 Website:

- <http://www.Winlink.org>

Yahoo Groups:

- <http://groups.yahoo.com/group/wl2kemcomm> Winlink
- <http://groups.yahoo.com/group/airmail2000> Airmail
- <http://groups.yahoo.com/group/WINMOR> WINMOR
- http://groups.yahoo.com/group/LOADING_WL2K_USER_PROGRAMS
For the 'Digitally Challenged'

Winlink2000.org Website



The screenshot shows the Winlink 2000 website homepage. At the top left is the logo "WINLINK 2000 Global Radio Email System ON AIR". To the right is a search box with the text "Search". Below the logo is a large image of Earth from space. A navigation menu contains links: Home, About, Applications, E-mail Us, How-to..., Links, Maps, Reports, Software, WebMail Login, FAQ, Site Login.

Winlink 2000

Winlink 2000 (WL2K) is a worldwide *system* of volunteer resources supporting e-mail by radio, with non-commercial links to internet e-mail. These resources come from Amateur Radio, the Military Affiliate Radio Systems (MARS), and other volunteer organizations. The system provides valuable service to emergency communicators, and to licensed operators without access to the internet. The Winlink Development Team (WDT) is committed to continuous improvement using the most efficient and effective radio modes and protocols for local, regional and long-distance applications, together with modern computer and networking technology.

To use the Winlink 2000 system, you must hold an Amateur Radio license or be a member of a supported organization or agency. Use of the system and all software is free of charge for those who qualify.

Winlink 2000 is an all-volunteer, non-profit project of the Amateur Radio Safety Foundation, Inc. It functions only through your generous donations and the unselfish efforts of hundreds of Amateur Radio operators around the world. Please support WL2K with your tax-deductible donation.

Quick!!

- **Is this an EMERGENCY?** Concerned about a WL2K user or family or friends at sea? *Get help through Winlink 2000 NOW.*
- Want the position of a WL2K user? [Click here.](#)
- Want to get started using Winlink radio email? [Go here.](#)
- Update your software with the latest *HF frequency list.*
- Get the latest on *WINMOR.*
- This is a big site. Find anything fast with the Search tool, above.

View This Site in Your Language

Google Translate
Select Language

[Gadgets powered by Google](#)

Telpac Network Support Ends

This is a reminder. As we previously announced, beginning the afternoon of March 5 Telpac stations that attempt a logon will get a message "Invalid gateway indicator - Disconnecting".

Telpac software is no longer supported on the Winlink 2000 system. Telpac Sysops should upgrade to RMS Packet or Linux RMS Gateway software. Learn more about WL2K sysop software: [click here.](#)

Yahoo Group Website



Yahoo! | My Yahoo! | Mail | More ▾ Get the New, Safer IE8 Hi, Gary ▾ | Sign Out | Help

YAHOO! GROUPS

VERIZON TRIPLE PLAY
Verizon High Speed Internet + DIRECTV® + Phone

SAVE \$60 A YEAR

Get **\$5 off every month** for the life of your contract

Online Exclusive Limited Time Offer!

Get it Today

CLICK FOR MORE INFORMATION

nnn0kul • NNN0KUL@pacfier.com | Group Member • Edit Membership [Start a Group](#) | [My Groups](#)

WINMOR

Home

Messages

Post

Files

Photos

Links

Database

Polls

Members

Calendar

Promote

Groups Labs (Beta)

Applications

Info Settings

Group Information

Members: 723

If you are (or were) experiencing problems with Yahoo! groups, visit the [Groups blog](#) for more information

Home

Activity within 7 days: **30** New Members - **9** New Messages - New Questions

Description

Please state your valid amateur radio call sign when requesting membership. If you forget to state your call sign, you will be contacted via your registered email address. So, be sure that you register with a working email address that you check regularly! If you don't respond to the request, your membership cannot be approved. We cannot infer your call sign, even if you may use it in your email address (unless it is an ARRL address).

**** This Group is owned and moderated by Joe, N2QOJ, of Queen Creek, AZ. ****

WINMOR is an HF digital protocol designed for use with the Winlink 2000 network. WINMOR will eliminate the

WL2K for Dummies



WINLINK 2000
Global Radio Email System **ON AIR**

Home About Applications E-mail Us How-to... Links Maps Reports Software WebMail Login FAQ Site Login

"WL2K For Dummies"

by Bud Thompson, N0IA.

This is not a book, but an on-line course of instruction for those serious about learning how to use the EmComm "last mile" portion of Winlink 2000, but who also may feel "digitally challenged." In this course, it is possible to set up and experience WL2K e-mail over Amateur Radio without a data modem (TNC) or a radio. All that is required is a Microsoft Windows 2000 Pro (or better) computer, Internet access, and a valid Amateur Radio License.

To take this short course, and have lessons delivered by regular email, you must join the Yahoo Group at http://groups.yahoo.com/group/LOADING_WL2K_USER_PROGRAMS/ moderated by N0IA, 'Bud' Thompson. You download the lessons from the file area of the group, and Bud and the gurus answer any questions and help you address any problems. You will work through several assignments at your own pace, and then determine if you wish to get further involved with a TNC and compatible radio over the air!

REVISED course now includes PacLink MP!
Here are the assignment headers:

- **ASSIGNMENT #1 - Collecting Information and Cataloging Equipment**
Estimated time - 10 Minutes or less

In this assignment you will learn if the computer-associated equipment you have available is sufficient for downloading, installing, and configuring the several programs that will be used for packet and the WL2K radio e-mail system. It is not necessary for you to have any radio equipment or data controller/TNC to compete this assignment (or this course!)

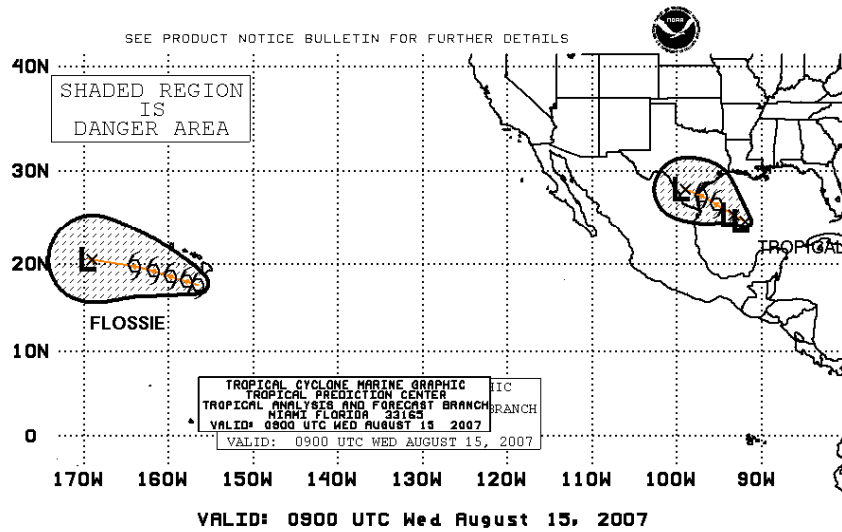
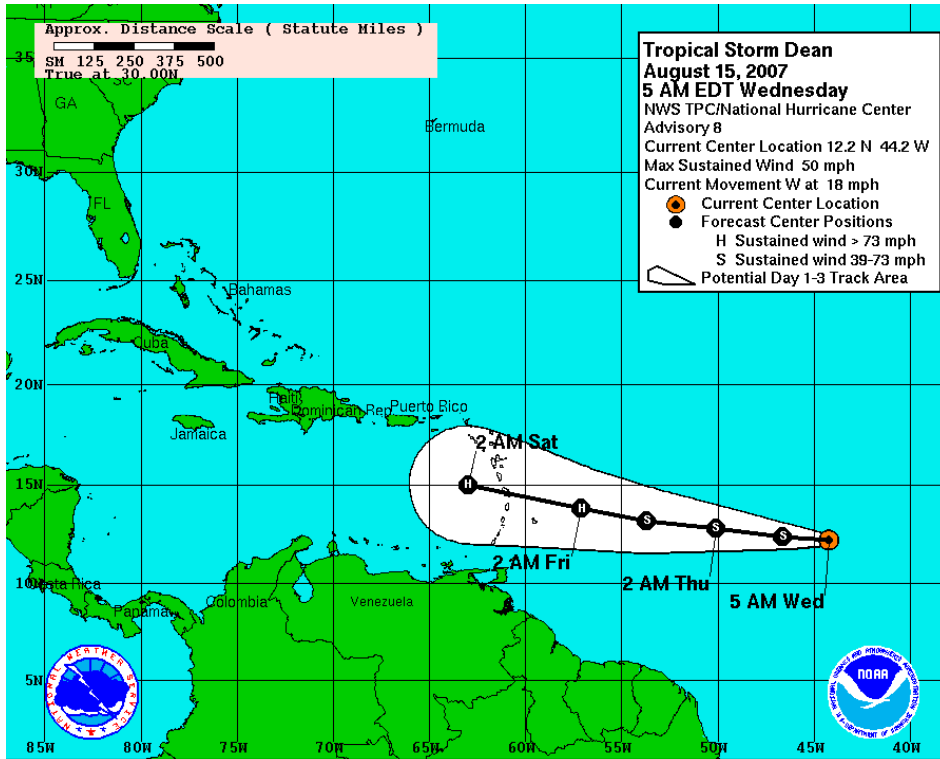
You will also introduce yourself to the group.

Credits...



Much of the information contained herein provided by:

- Steve Waterman, K4CJX
 - Winlink 2000 Network Administrator,
 - Winlink 2000 Development Team
- The www.Winlink.org website
- Experience...!



It is just a matter of time..
Are we ready?

Mobile HF rig and antenna: \$1,200...

PACTOR III Modem: \$1,000...

**Ability to send email when
commercial communications
systems fail: Priceless**



Questions?

Gary J Takis, NNN0KUL

NNN0KUL@winlink.org