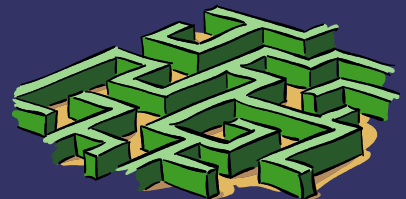# *Disaster Scenarios and WINLINK*

What is the point of claiming to be the "Communications of Last Resort" ....if you really aren't planning to work at all after well-known potential risks?

Training for Unusual Events

- Soldiers train for war, during peacetime.
- Doctors train for cardiac arrest, which rarely happens.
- Amateur radio operators train for telecommunications outages....because that's really when their skills are needed!
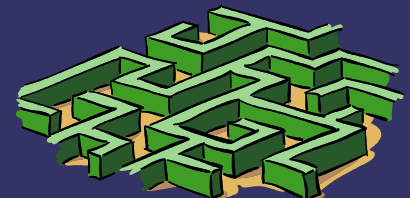
Comm Modalities

Just as businesses use fax and email to complement the telephone....

Amateurs use digital modes to complement voice modes.

No business will survive long without email / web...

No emergency communications in the setting of telecommunications failure will serve the total needs for long....if it doesn't have both voice and digital.

Five Solutions To Local/Distant Comm Needs In Setting of Telecomm. Failure

1. Bare Basics: WINLINK client accesses RMS station in unaffected area to transact non-local email.
2. PACLINK: client system provides working pop3/smtp email to an entire building of non-hams via an amateur control operator.
3. Packet to RMS: provides both distant and stay-local email solution across a packet-served area. (Combine with PACLINK as needed.)
4. Robust: Multiple RMS's in disaster area provide both distant & stay-local email solutions, allows for non-hams, hams, resiliency.
5. Worst-Case: Nationwide telecomm failure.   Radio-Only WINLINK mode moves email to pre-configured Message Pickup Stations.
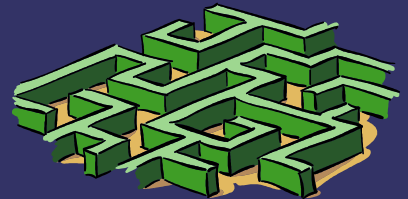
Local Email

Keeping local email local avoids tieing up precious HF resources.

PACLINK provides pop3/smtp local server, caches local email.

Every full-service RMS station (running RMS_RELAY) provides pop3/smtp local server, caches local email.

Details & Visuals

Florida loses telecomm
1. Simplest Winlink solution: Client Access

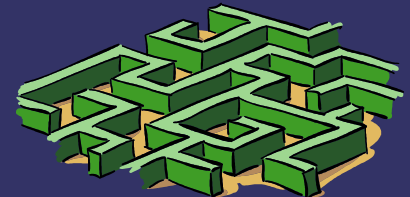⮑ Client stations use HF stations to reach Win

NF4RC & others

UNAFFECTED
GEORGIA

Still-working
INTERNET

Florida loses telecomm

2. *PACLINK Winlink with ham control op serves non-ham officials in a building & shelters*

- ➲ PACLINK provides pop3/smtp access, then uses ham radio stations to reach Winlink in area still with internet.
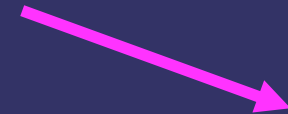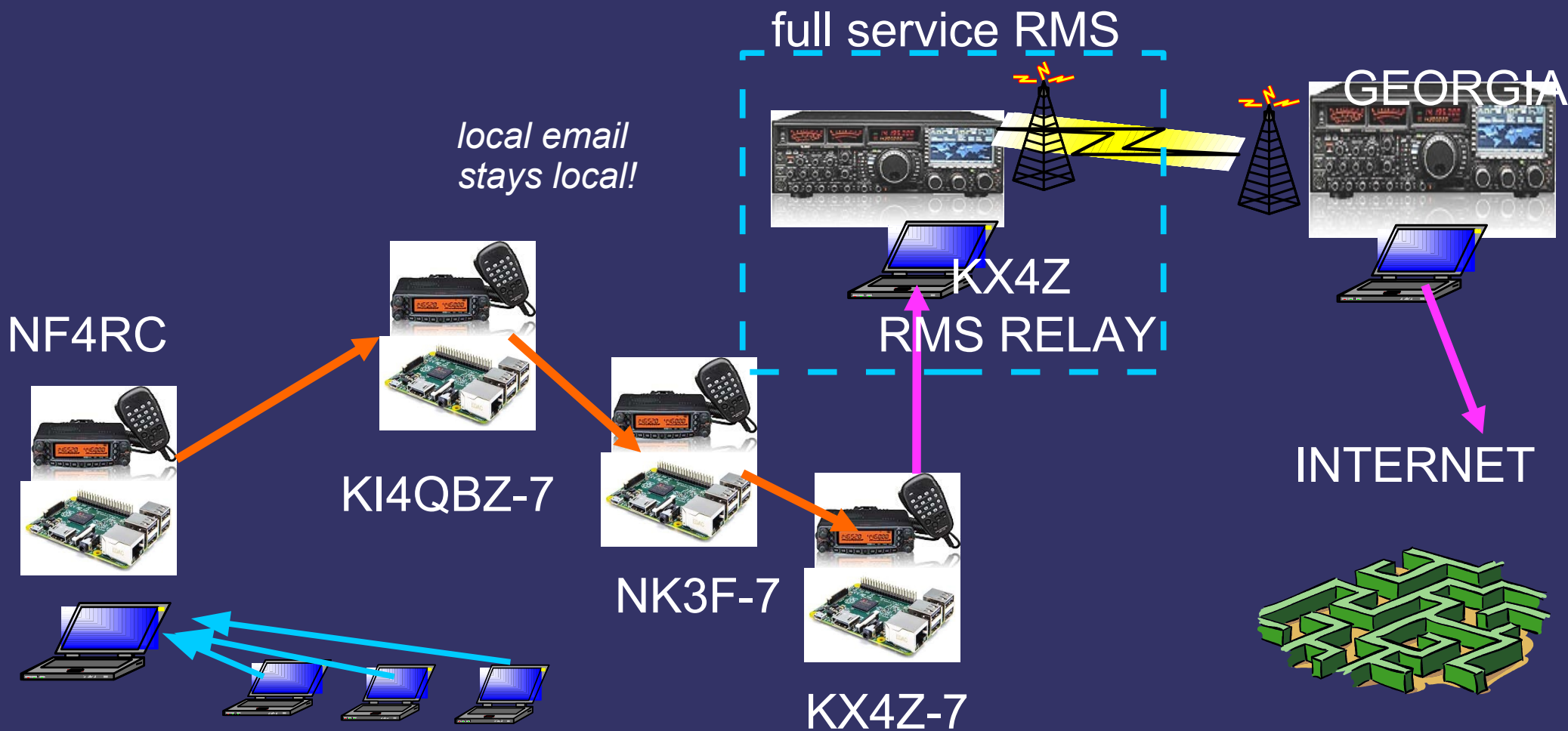
NF4RC

Georgia

PACLINK Software
(PiGate or PC)

still-working
INTERNET

Florida loses telecomm
3. Packet RelaySolution If HF dead at EOC

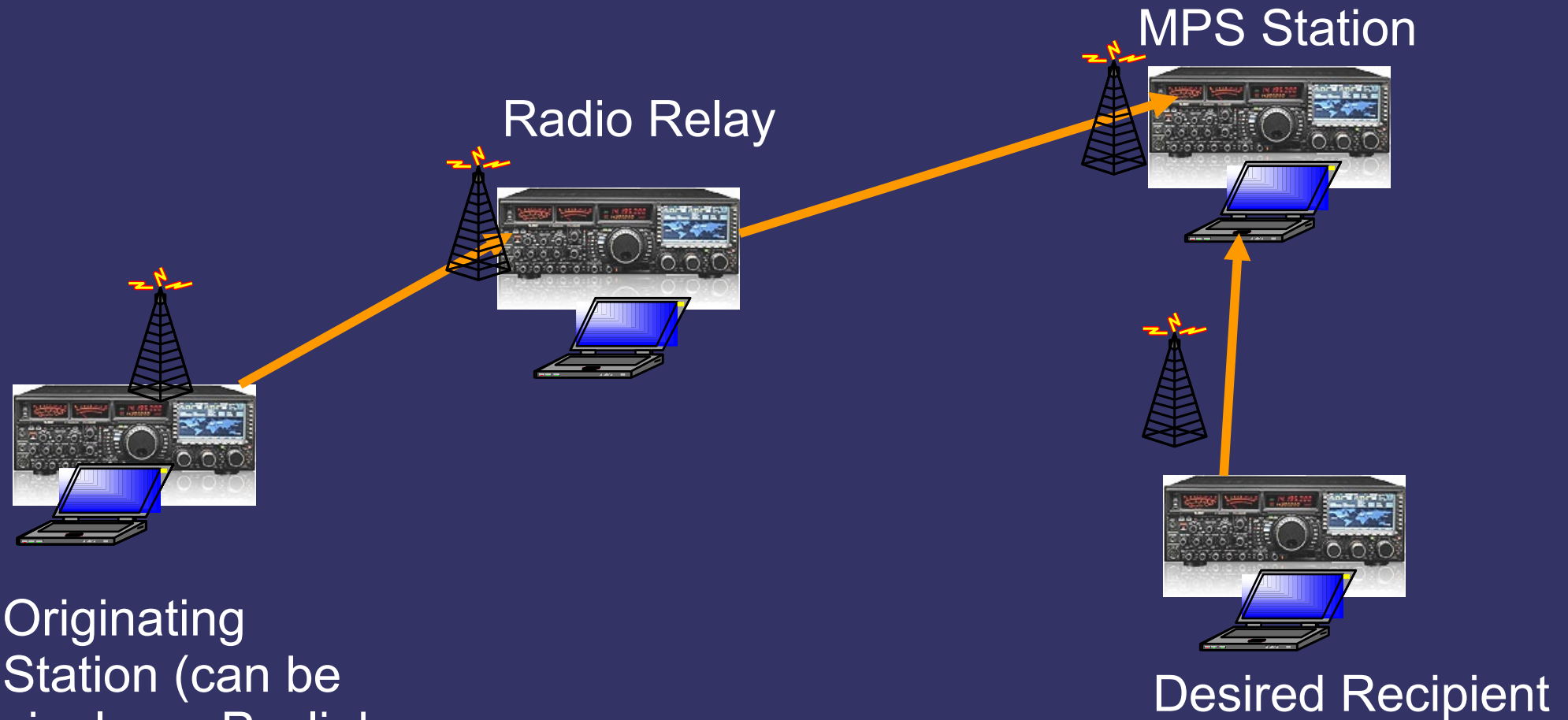➲ PACLINK provides pop3/smtp access, then uses ham radio stations to reach Winlink in area still with internet.

full service RMS

GEORGIA

local email stays local!

NF4RC

KI4QBZ-7

KX4Z
RMS RELAY

INTERNET

NK3F-7

KX4Z-7

Florida loses telecomm
4. Robust solution -- multiple local RMS stations

⮕ PACLINK provides pop3/smtp access, then uses ham radio stations to reach Winlink in area still with internet.

local email handled locally

NF4RC

Shelter

NK3I

local email handled locally

KX4Z

RMS RELAY

KX4Z-7

GEORGIA

INTERNET

Internet Lost Everywhere

MPS Station

Radio Relay

Originating Station (can be single, or Paclink multiple)
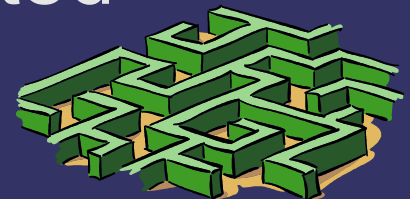
Desired Recipient

No Internet involved. All email is copied to all MPS registered for target station. Complicated, and slow, but works.
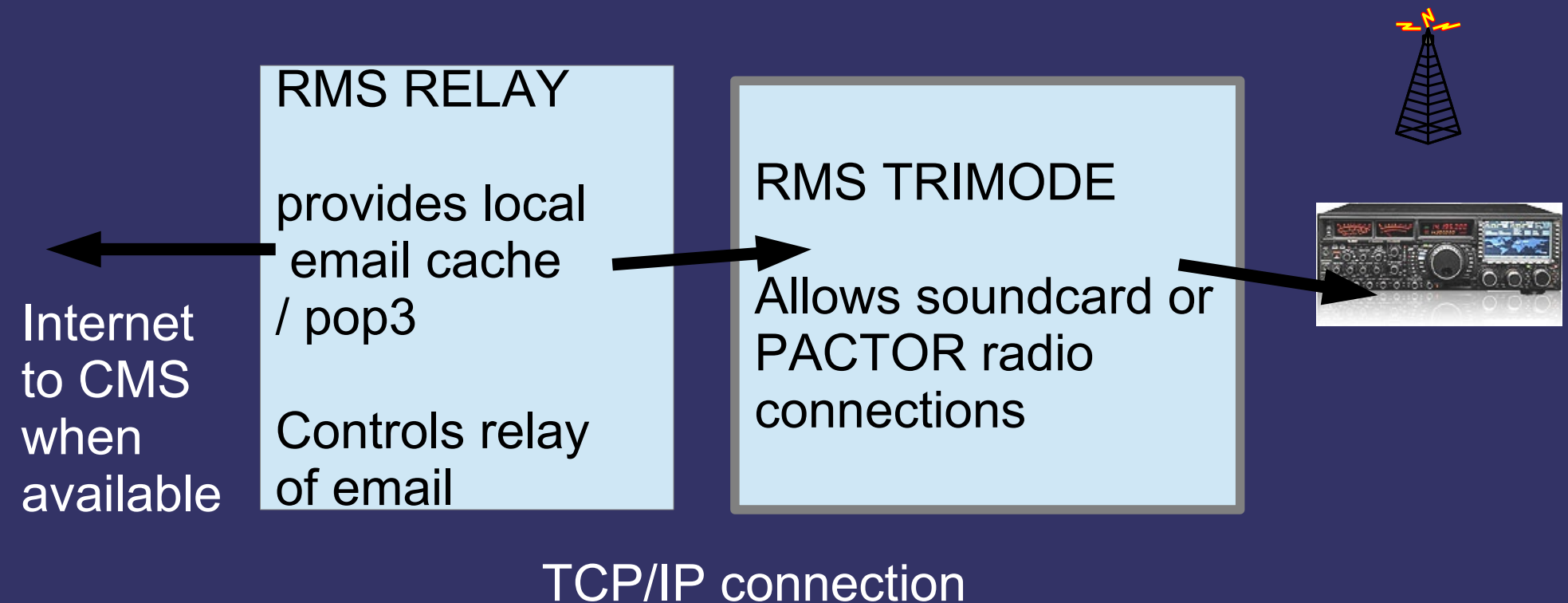
Building Blocks

1. Most important: "full service" RMS station running RMS_RELAY & TRIMODE (HF) +/- RMS PACKET

2. Digital Relay Stations -- linbpq

3. Packet RMS via Raspberry

4. PACLINK (either Windows or raspberry PiGate) -- local pop3 email & automated connections via Packet / LAN / etc

"Full Service" RMS (HF)

RMS RELAY

provides local email cache / pop3

Controls relay of email

Internet to CMS when available

RMS TRIMODE

Allows soundcard or PACTOR radio connections

TCP/IP connection

Tip: Trimode can only forward email via radio using a PACTOR modem.   However, nothing prevents you from doing this over VHF....but usually done over HF
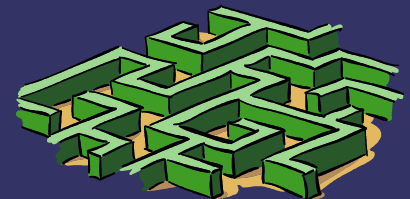
Digital Relay Stations

Raspberry Pi
LINBPQ

Allows soundcard
or KISS TNC
Packet connections
forwarding &
digipeating

Packet Winlink via Raspberry (Partial service RMS-- can't RF forward)
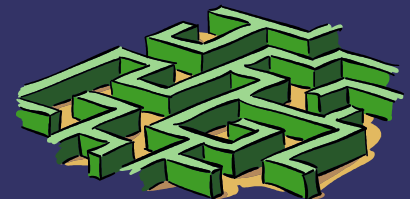

Raspberry Pi
LINBPQ

Performs same function as RMS PACKET, can connect either to Internet or RMS RELAY

TCP/IP

Either CMS (Internet) or RMS_RELAY

Packet Winlink via Raspberry (Partial service RMS-- can't RF forward)
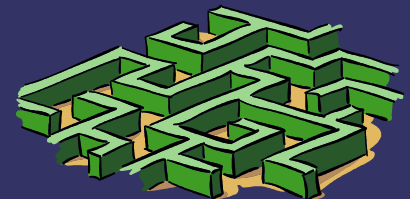

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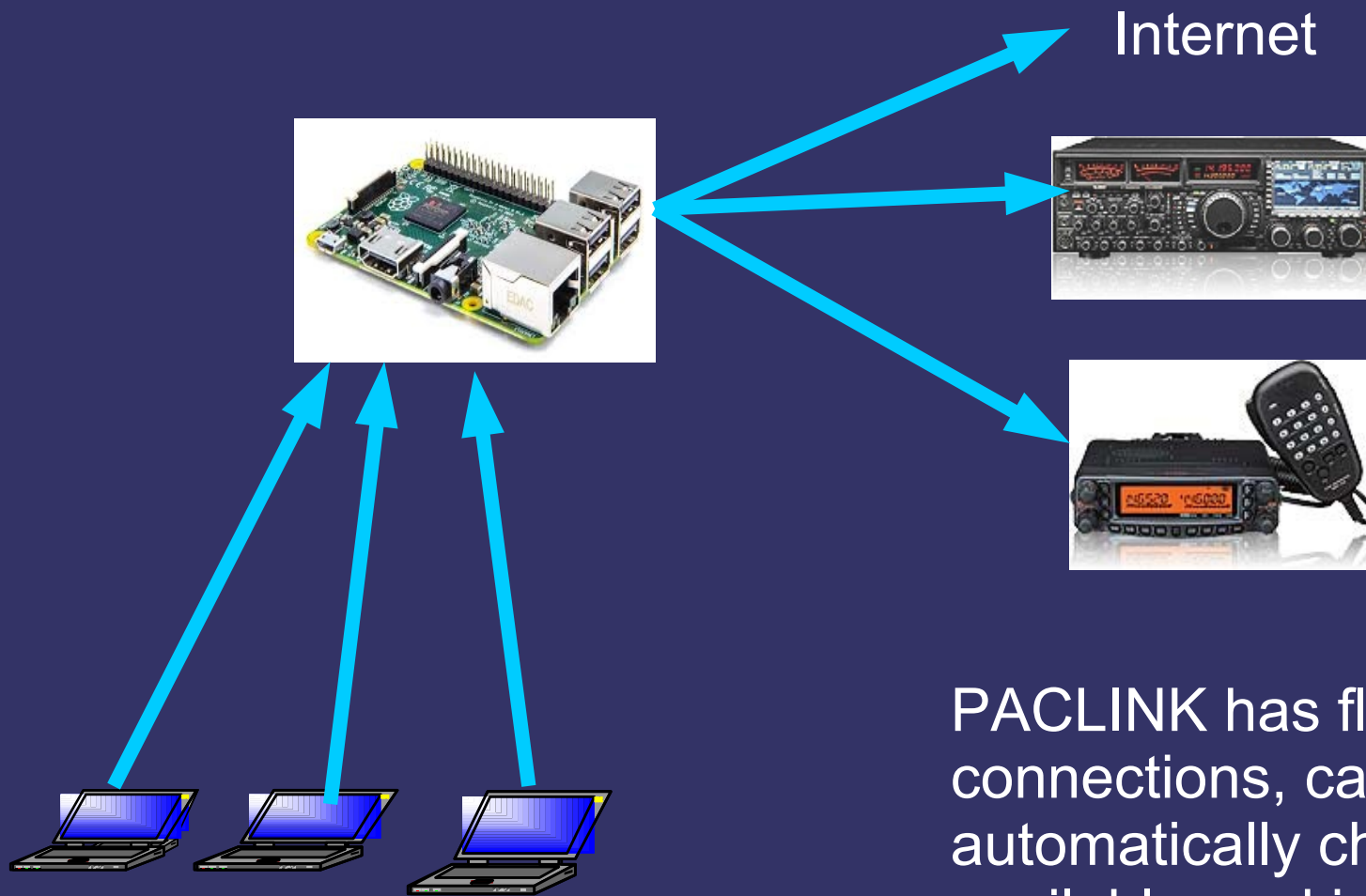
TCP/IP

Either CMS (Internet) or RMS_RELAY
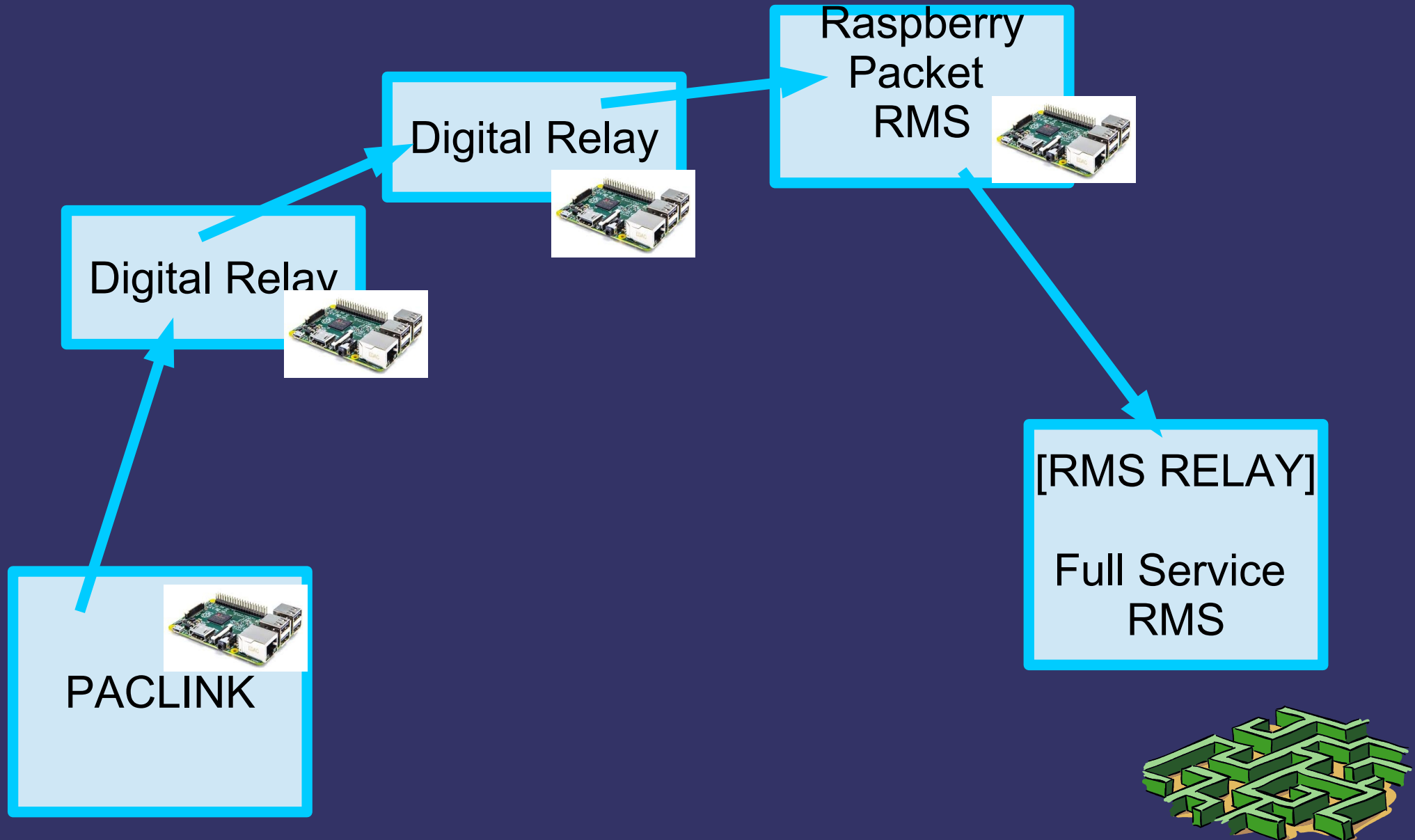
PACLINK
(either Windows or PiGate)

Internet

Non-ham officials or shelter residents use email clients

PACLINK has flexible connections, can automatically choose among available working options

Putting it all together as a skilled comms engineer

Putting it all together as a skilled comms engineer