

Use of E-Messaging for Disaster Response in Jamaica and Lessons for CDERA Participating States

CDERA/IDRC ICT Research Project

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Putting IT together

Outline

- ◆ Purpose of Study
- ◆ What is an “E-Messaging” system
- ◆ Characteristics and Experiences of Jamaica’s NEMHS
- ◆ Issue of replication to other CDERA Participating States

Purpose of Study

- ◆ Review the “E-messaging” system used by Jamaica’s ODPEM
- ◆ Determine suitability for replication elsewhere in CDERA PS
- ◆ Design and Execute a suitable Pilot Project for introduction in other CDERA Participating States

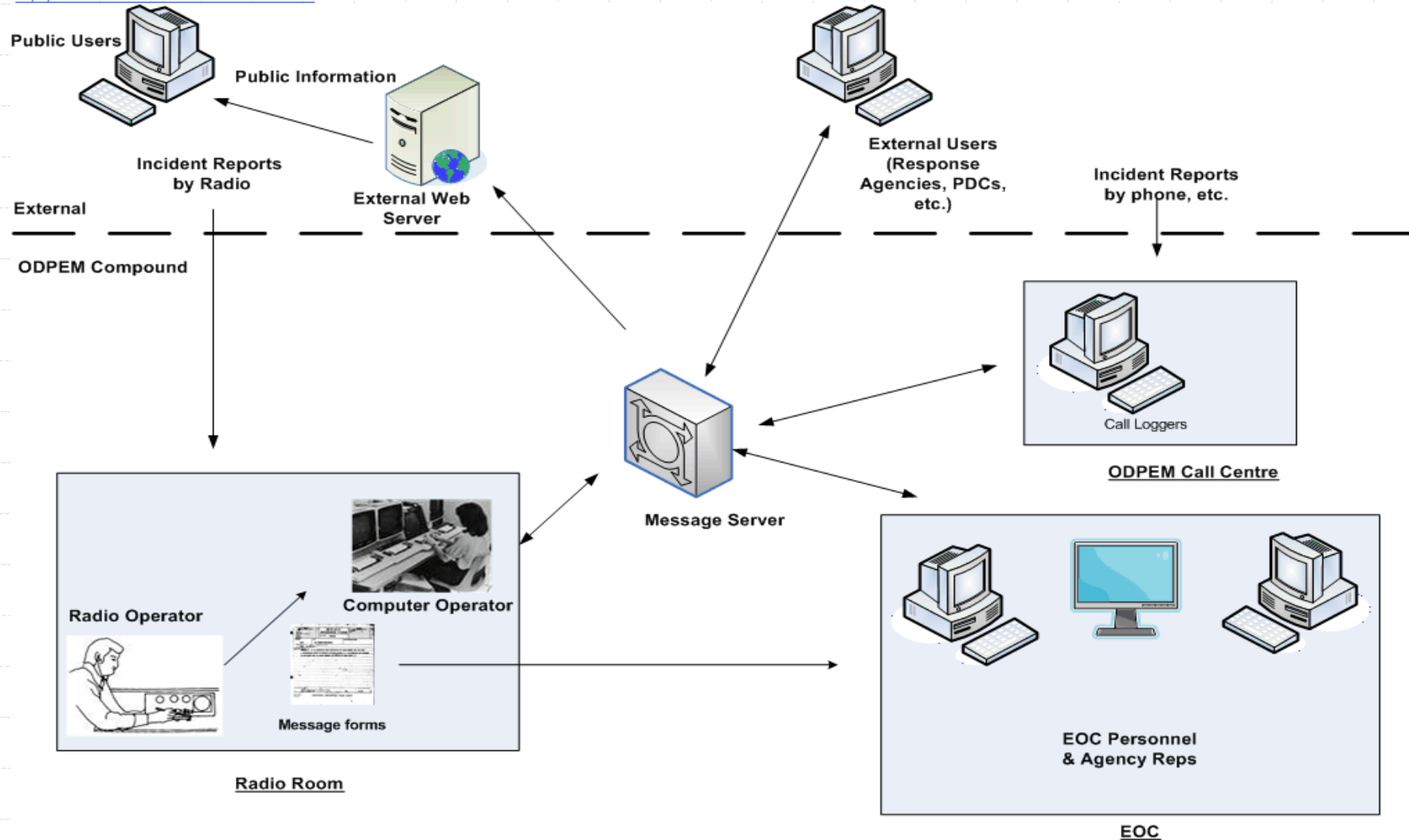
What is an E-Messaging System?

- ◆ In the context of the study, it is a *computer-based system for management of emergency messages*
- ◆ ODPEM system called *National Emergency Message Handling System (NEMHS)*
- ◆ Falls into category of *Crisis Information Management Systems (CIMS)*

Key NEMHS Functions

- ◆ Message receipt and logging
- ◆ Message prioritizations
- ◆ Message assignment
- ◆ Message routing
- ◆ Monitoring and follow-up
- ◆ Reporting and analysis
- ◆ Also includes “Agency Interface” to update agency response actions

NEMHS – Concept of Operation



ODPEM E-Messaging System: Concept of Operations

Technical Characteristics

- ◆ Web-based – no special software required for access, internally or externally (via Internet).
- ◆ Developed on Lotus *Domino Server* platform
- ◆ Uses Domino's *NSF* database format
- ◆ Requires Lotus Notes client for database administration but not for access
- ◆ *Crystal Reports* software can be used for creation of additional reports
- ◆ Currently does not have an interface to a GIS system

Experience of use

- ◆ Has been used for all major events in recent years
- ◆ Operated externally during CWC 2007
- ◆ Helped improve information management (e.g. lost messages, messages not being "actioned")
- ◆ OPDEM accepts that the capabilities are not being fully utilized
- ◆ Lack of GIS interface limits ability to support post-event analysis

Suitability for replication

- ◆ Two related but distinct questions
 - (a) **Would it be beneficial to introduce systems with similar capabilities (CIMS) in other CDERA PS**

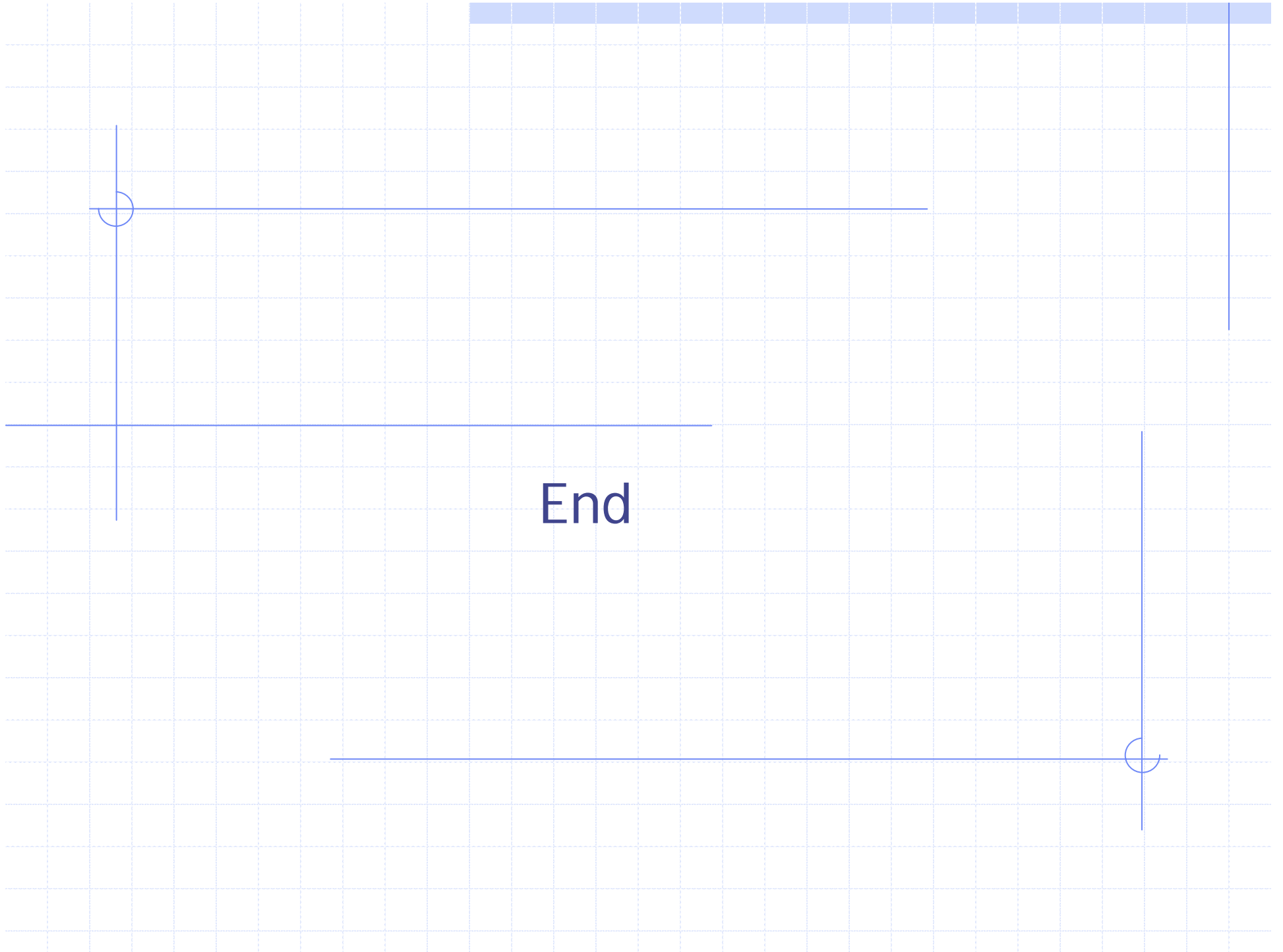
 - (a) **Should Jamaica's NEMHS be replicated to other states**

(a) Introduction of CIMS

- ◆ Use of CIMS is attracting considerable research and practitioner interest (e.g. ISCRAM)
- ◆ Represents a further evolution of the “professionalization” of DM
- ◆ Effective use of CIMS offer significant potential benefits to CDERA PS
- ◆ Would be consistent with CDERA strategy for increased ICT application in DM
- ◆ **Use of CIMS must be synchronized with operational procedures to be effective**

(b) Replication of Jamaica NEHMS

- ◆ System has the benefit of being designed and used in Caribbean environment
- ◆ However, technical platform not widely used by other PS
- ◆ Will require additional upgrade and enhancement
- ◆ Issue may be made moot by decision to introduce *WebEOC* in CDERA Participating States





Use of PACTOR for Disaster- related Communications in the Caribbean

CDERA/ICT Research Project

Mr Lionel Ellis



Outline

- ◆ What is PACTOR?
- ◆ Current use of PACTOR in the Caribbean
- ◆ Potential of PACTOR for Disaster Communications

What is PACTOR

- ◆ Communications Protocol for data communications via HF radio
- ◆ Developed by Special Communications Systems (SCS) GmbH from Germany
- ◆ Represents an improvement over earlier digital HF communications methods
- ◆ Improved comms speed and error handling

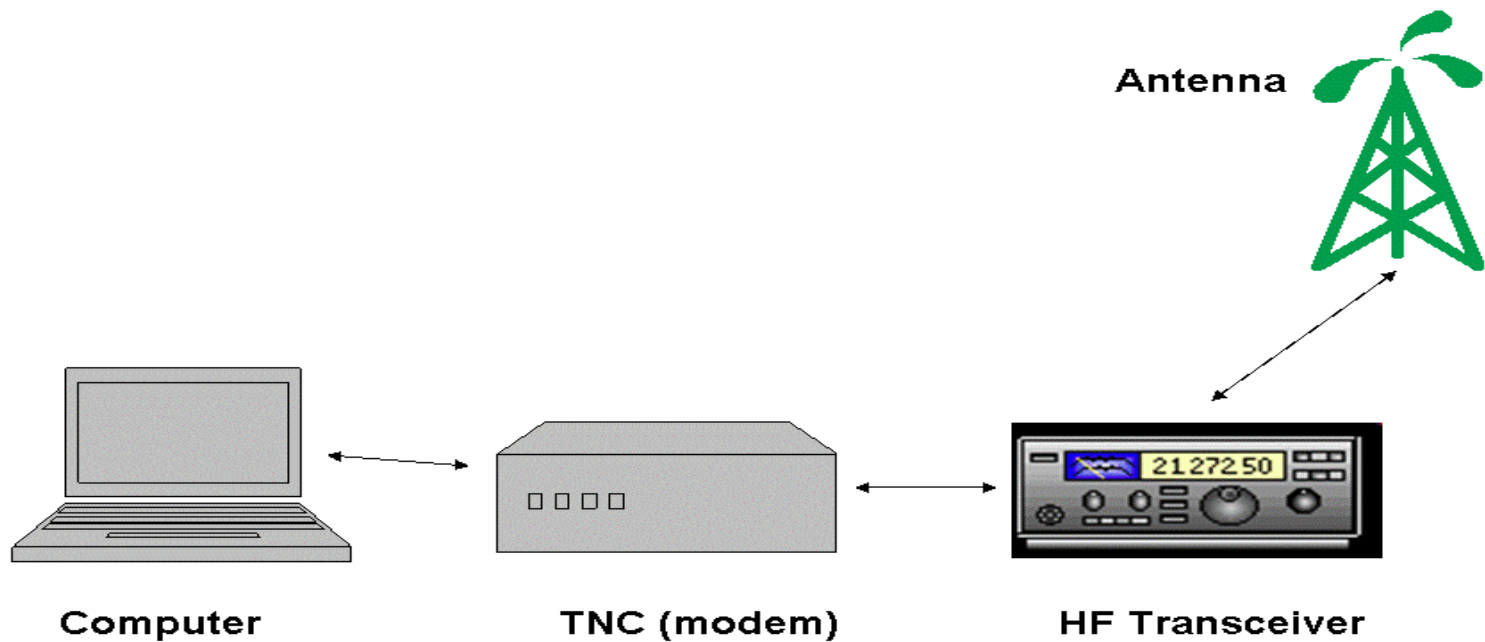
What is PACTOR (cont'd)

- ◆ 3 PACTOR protocols available – PACTOR I, II and III
- ◆ PACTOR III offers the highest transmission speed
- ◆ PACTOR II and III protocols are proprietary to SCS
- ◆ PACTOR III supports transmission speeds of up to 5 Kbps

Main PACTOR Station components

- ◆ HF radio station (transceiver, antenna, etc.) – to send and receive radio signal
- ◆ Terminal Node Controller (TNC) – to convert between digital message (computer) and radio signal
- ◆ Computer – for creating, sending, receiving and managing messages

PACTOR Station Components



Sample PACTOR Station - 1



Sample PACTOR Station - 2



Sample PACTOR Station - Portable

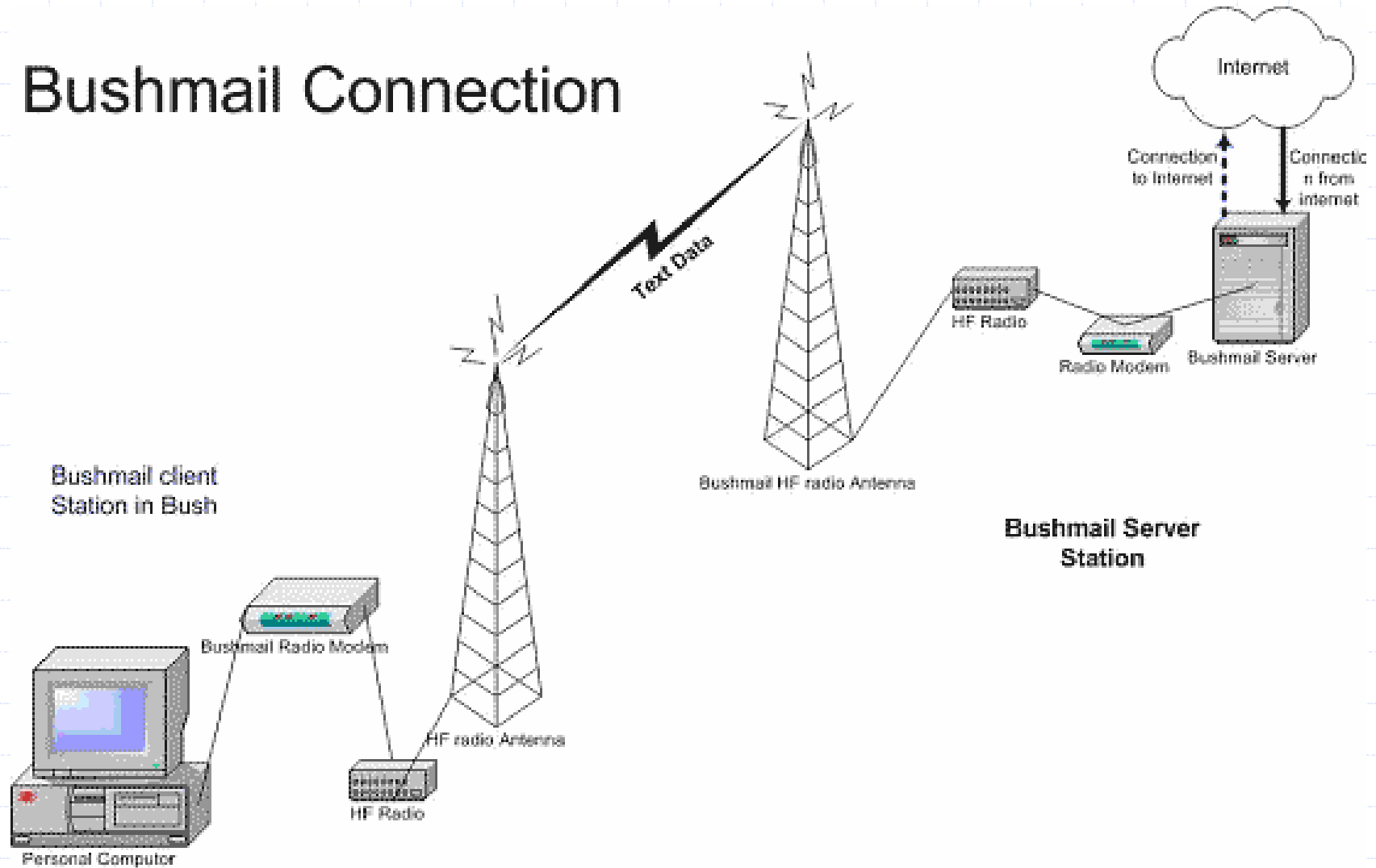


PACTOR – Internet Connectivity

- ◆ PACTOR messages can be sent as Internet e-mail
- ◆ Internet connectivity provided through “mailbox” stations
- ◆ *Winlink 2000* system provides global connectivity for Amateur users
- ◆ Private commercial services available (e.g. CruiseMail, Bushmail)

Interconnectivity Example – “Bushmail” service (www.bushmail.net)

Bushmail Connection



Key strengths of PACTOR

- ◆ Long range (due to HF technology)
- ◆ Can work under poor propagation conditions
- ◆ Higher speed than other HF digital methods (e.g. AMTOR, RTTY, PSK31)
- ◆ Offers "error-free" communications
- ◆ Support for Internet messaging

Key Limitations of PACTOR

- ◆ Low comms speed compared to other widely-used data technologies
- ◆ Limitations on size of messages
- ◆ Technical knowledge required for installation
- ◆ Regulatory constraints on use of HF

PACTOR use in the Caribbean

- ◆ Trinidad & Tobago is the only CDERA PS where PACTOR use has been confirmed
- ◆ Attempts made to identify users in other PS via local Amateur clubs
- ◆ PACTOR is a specialized form of communication, practiced by few Amateurs
- ◆ Cost of equipment a factor for many operators

PACTOR use in T & T

- ◆ Total of 10 PACTOR users identified during the study
- ◆ 6 of the users had functioning stations
- ◆ Number of users represents small proportion of licensed amateurs
- ◆ Mostly using older PACTOR I mode
- ◆ No indication of PACTOR use to support ODPM activities

Potential role of PACTOR in DM in CDERA PS?

- ◆ Primary role envisaged is as a backup data comms method for disaster situations
- ◆ Stations can be established in NEOCs
- ◆ Potential to assemble and deploy portable stations
- ◆ Would need to overcome general reluctance towards HF



End of Presentation
Thank you for your attention