

Unit 6

Incident Communications System

Unit Terminal Objective

At the conclusion of the unit, the student will describe the COML responsibilities in establishing an incident radio communications system.

Overview of Networks

- According to NIMS, there are five networks that may be deployed on any given incident:
 - Command Network
 - Tactical Network
 - Air-to-Ground Network
 - Air-to-Air Network
 - Logistics Network

Command Network

- **Command Network may be used by C&G Staff**
 - **More often, it is a coordination channel for the Operations Section**
 - **Usually only one command network is used during an incident**
- **May be patched via a gateway when personnel are on disparate radio systems**
- **Cache radios can be programmed for C&G Staff use**
- **Used as a link between the incident and the Dispatch Center**

Tactical Networks

- There may be several tactical networks at the Division/Group level
- Use caution when patching Tactical Networks; monitor them carefully

What are some examples of tactical networks?

Tactical Interoperability

- Fire
- Law Enforcement
- Emergency Medical Services
- Hospitals
- Emergency Management
- Explosive Ordnance Disposal
- HAZMAT
- Urban Area Search and Rescue Teams (USAR)
- Transportation (Public and Private)
- Utilities
- Public Works
- Public Health
- Military
- DHS
- Schools
- Environmental Health
- Medical Examiner
- Radiological Support
- Nongovernmental Organizations (NGOs) such as the Red Cross

Air-to-Ground Network

- **Used to coordinate air support during an incident**
- **Air-to-Ground Nets are typically FM Public Safety frequencies**
- **Allocated according to function, i.e. deck control, takeoff, landing**

Air-to-Air Network

- **Governed by FAA**
- **AM (standard) or FM**
- **Air-to-air frequencies are typically coordinated by the Air Branch – not the COML**

Logistics Network

Groups on this network include:

- **Base Camp/Incident Command Post**
- **Ground Support/Transportation**
- **Security**
- **Communications Unit**

Initial Priorities

- **Keep constant communications with the Communications POC**
- **The Communications Unit supports all aspects of incident management**
- **Priorities may not follow traditional expectations**

Is there something you can do to enhance existing systems while a definitive solution is being implemented?

Designing Radio Systems

- **Analyze radio needs**
 - **What is in place now? Will it suffice?**
 - **If not, perform an analysis to include:**
 - **GIS**
 - **Radio coverage software**
 - **Topographic maps/software**
 - **Physically survey terrain by ground/air**
 - **Local technician(s) and resource advisors**

What variables and circumstances must be considered by the COML?

Radio System Considerations

- **Potential problems include:**
 - **Adjacent incident interference**
 - **Multiple repeaters**
 - **Additional equipment as needed**

What else could pose a problem?

Available/Assigned Nets

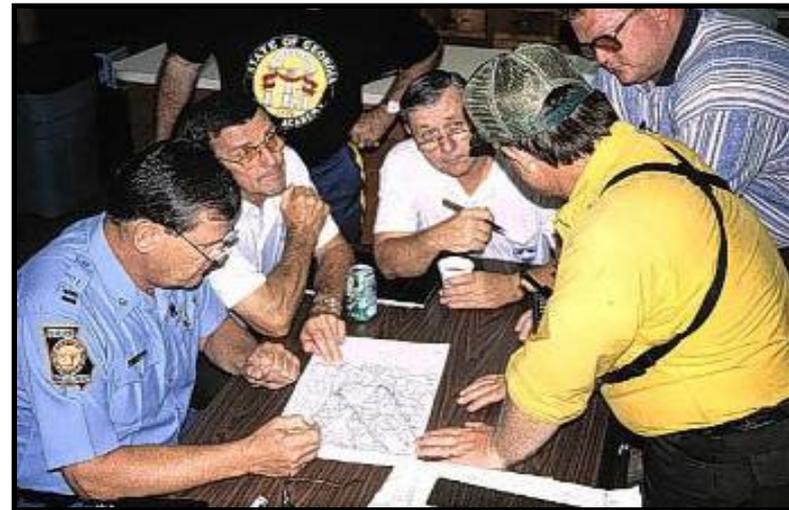
- **Available Nets (Form 217A)**
 - **Shared Channels Reference**
 - **TIC Plan**
 - **Frequency/Talkgroup agency listing**
 - **Local/Regional Communications Plan**
- **Assigning Nets**
 - **Coordinate with the Local COMC
(Communications Coordinator)**
- **Assess need for cache radios and gateway patches**

Implementing Communications Solutions

- **Use a shared system?**
- **Use shared channels?**
- **Activate a radio cache?**
- **Order a gateway?**
- **Utilize a mobile communications unit?**
- **Set up repeaters and portable towers?**
- **Document the plan with the ICS Form 205**

Initial Order – Personnel

- Order by assignment and Incident Command System (ICS) position
 - INCM: Incident Communications Center Manager
 - COMT: Incident Communications Technician
 - RADO: Radio Operator
 - THSP: Technical Specialist
- Qualifications?



Initial Order – Supplies

- **Determine supply needs according to:**
 - **Tactical resource orders**
 - **Projected number of incident facilities**
 - **Projected growth of incident**
- **When placing initial supply order, plan for approximately three days.**
- **Battery needs are a particular concern**
 - **May need to order 2 changes of batteries per radio, per operational period.**

Initial Order Procedure

- **General Message Form (ICS Form 213)**
 - Yellow and pink submitted to recipient
 - White retained by sender
 - Pink returned to sender when reply issued
- **Distribute copies as appropriate**
- **Provide as much information as possible**
 - Give specific delivery time, date and location. Do not use “ASAP”.
- **Route through established ordering channels (often the LSC or SPUL)**

Order and Manage Use of Temporary System Equipment

- **Determine required coverage area**
- **Locate equipment sites**
- **Provide for equipment security**
- **Avoid interference issues**
- **Apply local and regional SOPs**
- **Adhere to mutual aid agreements**

Swap/Cache Radios

- Provide radio cache programming coordination and validation
- Accountability

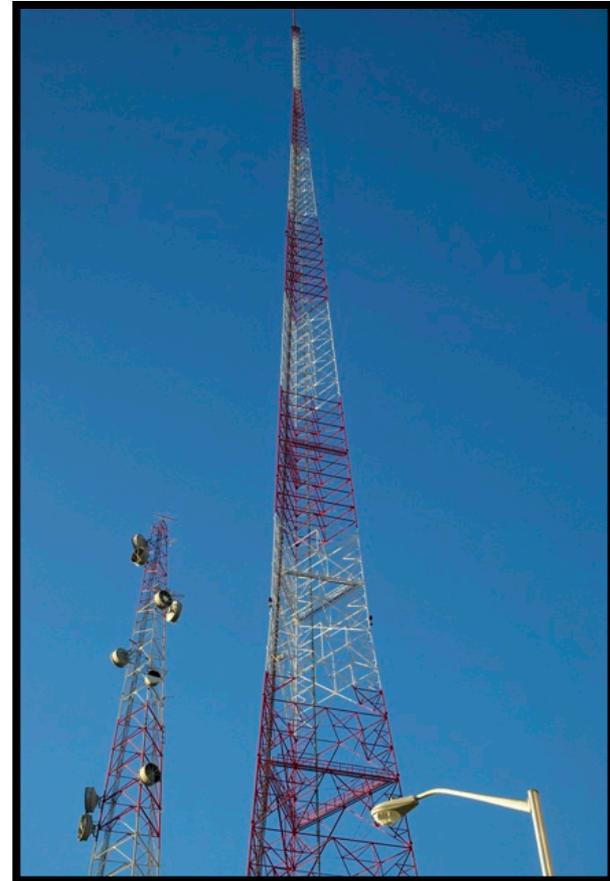


Accountability

1. KIND OF PROPERTY BK RADIO	2. CACHE/UNIT NAME K186	3. I.D. NO. 07
4. SIZE/CAPACITY		
1 - "AA" CLAMHELL		
1 - REMOTE SPKR MIC		
1 - LEATHER CASE w/BELT		
ASSIGNMENT RECORD		
5. DATE/TIME 08-19-06	6. OPERATIONAL PERIOD 0600 TO 1800	
7. NAME JOHN DOE		
8. HOME BASE CITY OF CONCORD PW		
9. INCIDENT ASSIGNMENT STREET DIVISION		
10. RETURNED DATE/TIME	OR 11. TRANSFERRED TO	
5. DATE/TIME	6. OPERATIONAL PERIOD	
7. NAME		
8. HOME BASE		

Consider Commercial Services

- Radio Systems
- Telephones
- Satellite
- Contract Technicians



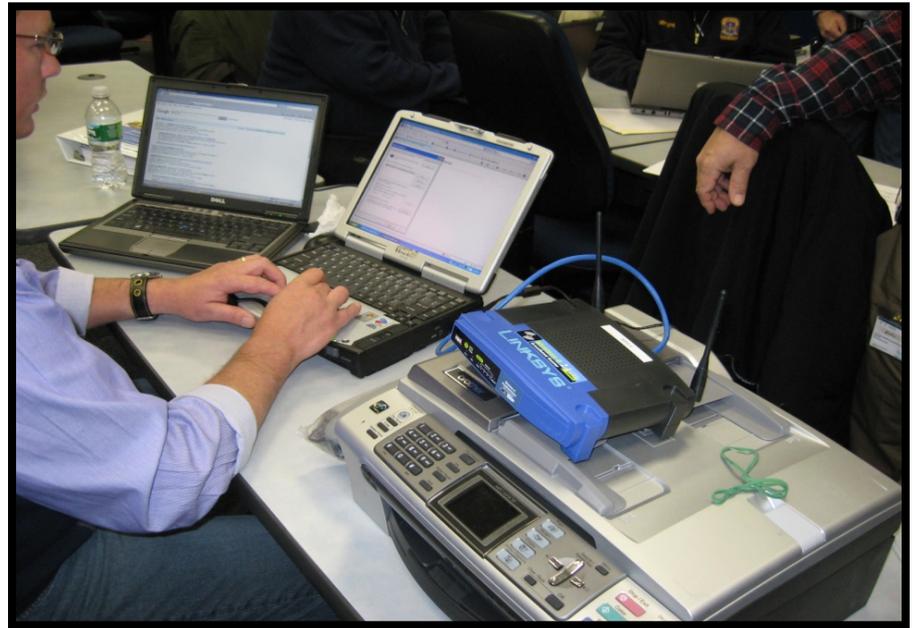
Solutions for Telephone and Data

- Terrestrial wired and wireless services
- Satellite services



Technology Services

- Do you need data devices?
- Internet connectivity?
- Establish LAN and WAN?
- Can you provide VoIP?



Declared Emergency Coordination

■ Federal Coordination:

- **JFO: Joint Field Offices**
- **ESF2: National Communications Systems**
- **DEC: FEMA Disaster Emergency Communications Division**
 - **MERS: Mobile Emergency Response Systems**

■ State/Local Coordination:

- **EMA: State/Local Emergency Management Agencies**
- **EOC: Emergency Operations Centers**
- **Communications Coordinator**

Other Jurisdictional Communications Assets

- **CST: National Guard Civil Support Teams**
- **IMT: Regional, state, and national Incident Management Teams
(Type 3, 2 or 1 IMTs)**
- **FEMA USAR: Federal Emergency Management Agency Urban Search and Rescue teams**
 - **IST: Incident Support Team**
- **SUSAR: State Urban Search and Rescue Teams**
- **Fed Tech**
- **Other communications response groups**

Priority Telecommunications Services

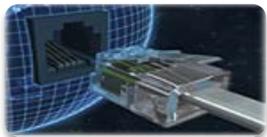
Priority Telecommunications Services programs provide public safety and national security users the ability to communicate on telecommunications networks during times of congestion.



- Government Emergency Telecommunications Service (GETS)



- Wireless Priority Service (WPS)



- Telecommunications Service Priority (TSP)

Priority Telecommunications Services (cont'd)

- **Government Emergency Telecommunications Service (GETS)**
 - Priority access to the public wireline network
 - GETS is supported by all major service providers
- **Wireless Priority Service (WPS)**
 - Priority access to the public wireless network
 - WPS is available through AT&T, Edge Wireless, Southern LINC, Sprint/Nextel, T-Mobile, Verizon
- **Telecommunications Service Priority (TSP)**
 - Establishes priority for restoration/provisioning of NS/EP circuits
 - Supported by an FCC regulatory mandate



Government Emergency Telecommunications Service (GETS)

- GETS is a no cost calling card that provides priority for outbound calls to all regular telephone numbers
- GETS uses the capacity of the public network, it is not a separate system
- Caveats:
 - GETS will not work without a dial tone
 - May experience soundless delays while queuing
 - GETS does not mitigate cellular congestion
 - GETS cannot be used for toll free numbers



How GETS Works



Wireless Priority Service (WPS)

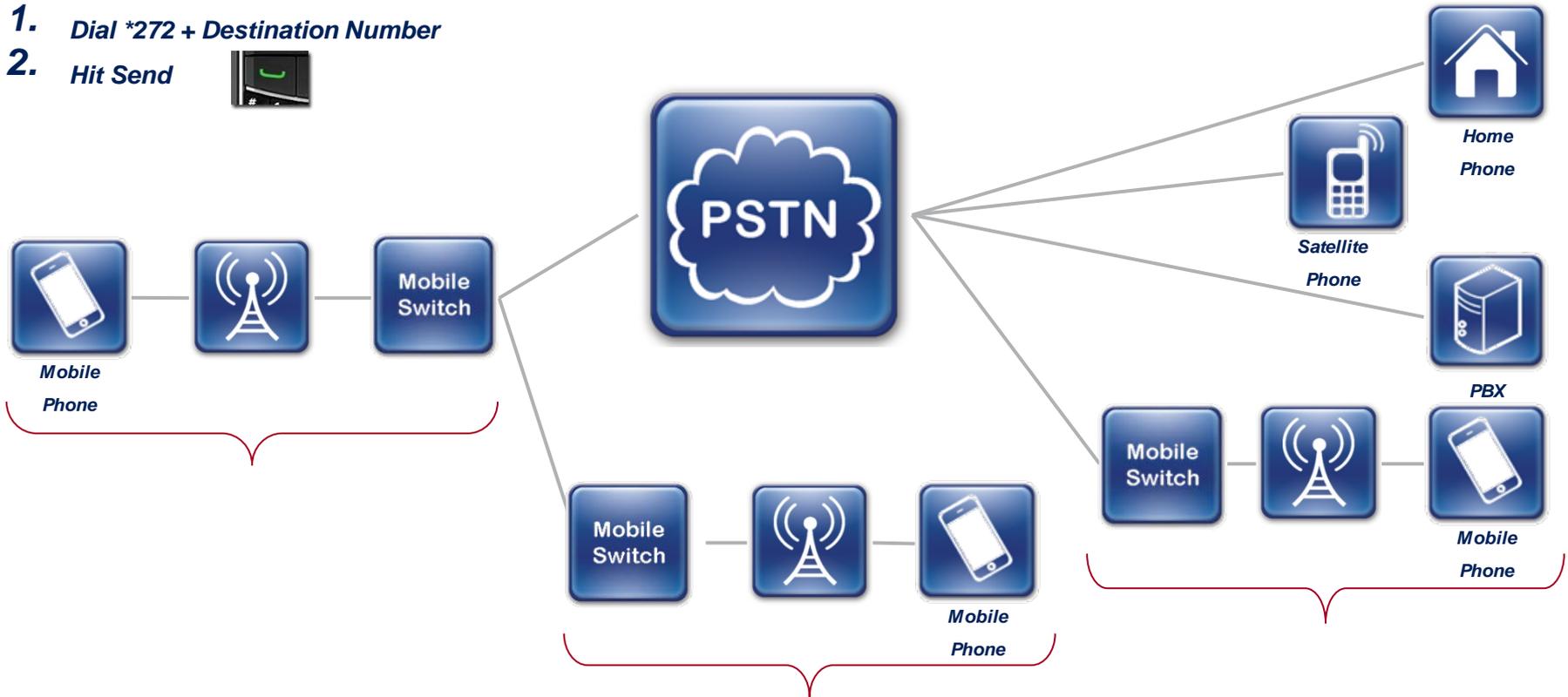
- WPS provides priority for emergency calls made from cell phones including PDAs
- WPS feature is added on a per-phone basis for Alltel, AT&T, Cellular South, Edge Wireless, SouthernLINC, Sprint Nextel, Sprint PCS, T-Mobile, and Verizon Wireless
- Caveats:
 - WPS will not work without a signal
 - Users may experience waits up to 28 seconds
 - WPS may not work when roaming
 - 9-1-1 loses geo locator



*272 +
Destination
number

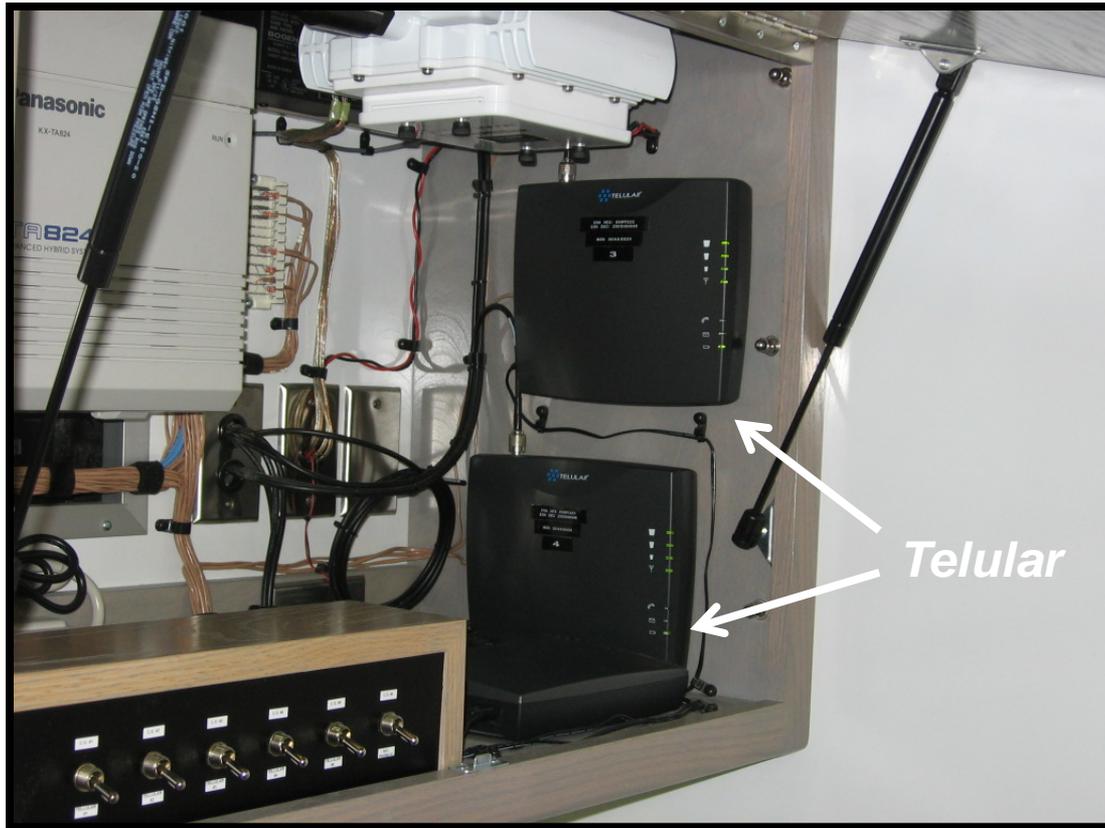
How WPS Works

1. Dial *272 + Destination Number
2. Hit Send 



WPS addresses congestion in the wireless segment of the network

WPS – Fixed Cellular Units



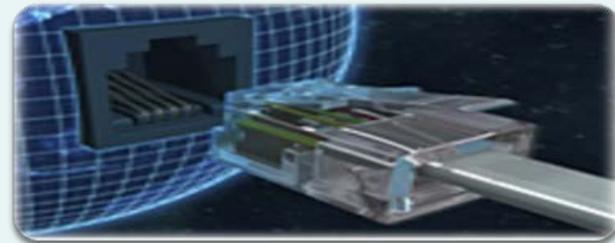
TSP Overview

The TSP program contains two primary and distinctive components:



Restoration Priority

Applied to telecommunications services to ensure restoration before a non-TSP program user



Provisioning Priority

Obtained to facilitate the priority installation of new telecommunications services in a shorter than normal interval, when necessary

<http://www.dhs.gov/telecommunications-service-priority-tsp>

Candidate Organizations

Cities/Counties/States/Districts	Hospitals/Medical Services
Office of Emergency Management	Public Health
Police/Sheriff/Fire	Transit Agencies
Water, Gas, Power	Ports/Airports
Telecom	Search and Rescue
Public Works	School and College Districts
Irrigation Districts/Flood Control	Volunteer Agencies
Agencies included in Emergency Management Plans	Critical Infrastructure Suppliers
Financial Institutions	National Guard

Candidate Locations/Functions

Operations Centers	Police/Fire/EMS Dispatch
Back-up EOC	City/County Yards
Command Vehicles	Remote Offices
PSAPs (911 Center)	Power/Pump Stations
Computer/IT Center	Shelters

Additional Information

For more information visit:

<http://www.dhs.gov/gets>

<http://www.dhs.gov/wps>

<http://www.dhs.gov/tsp>

For assistance setting up accounts:

DHS Priority Telecommunications Service Center

1-866-627-2255

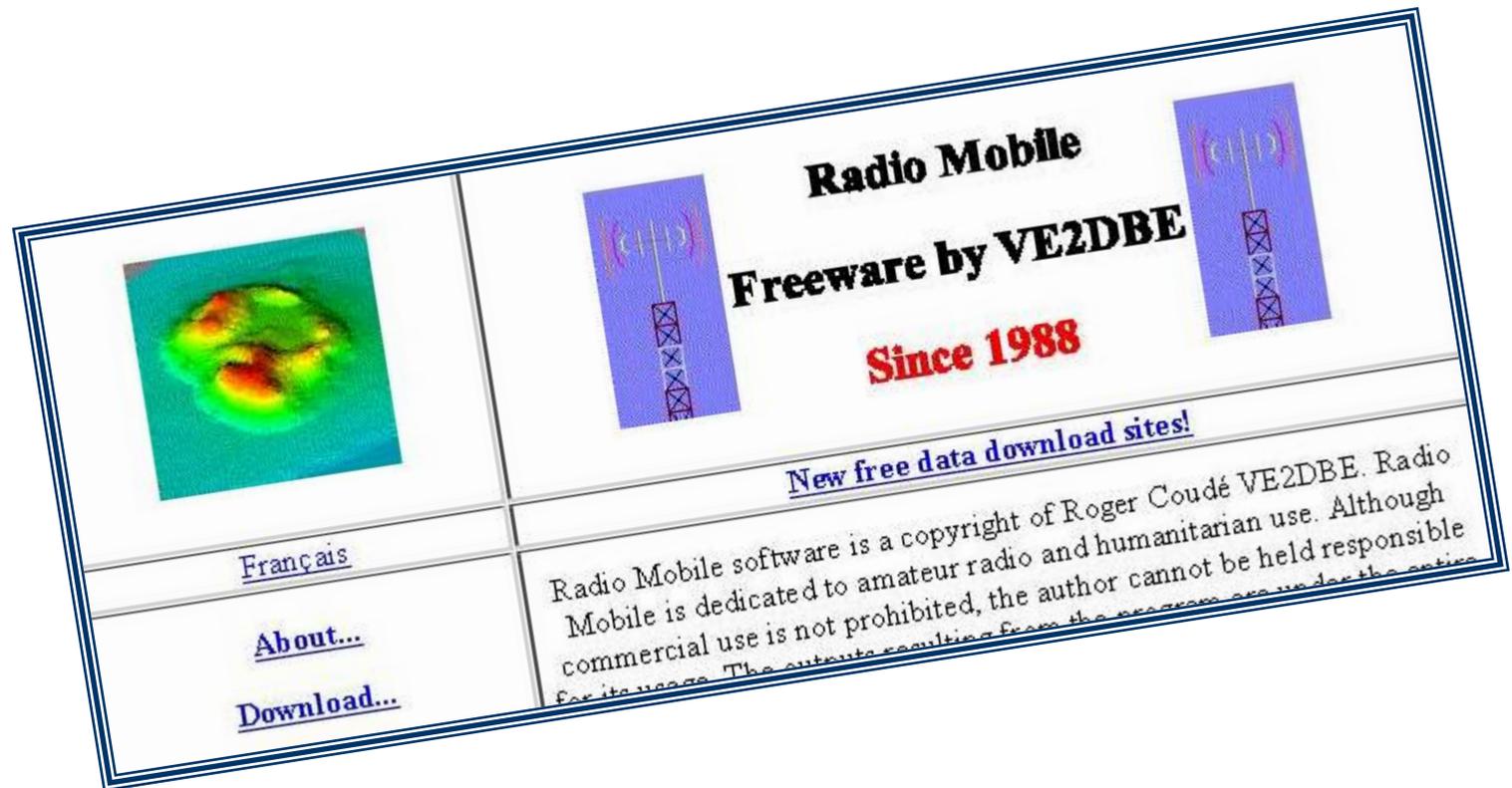
Monday - Friday, 8 AM to 6 PM Eastern Time

Follow voice prompts for each service

Other Resources

Radio propagation software

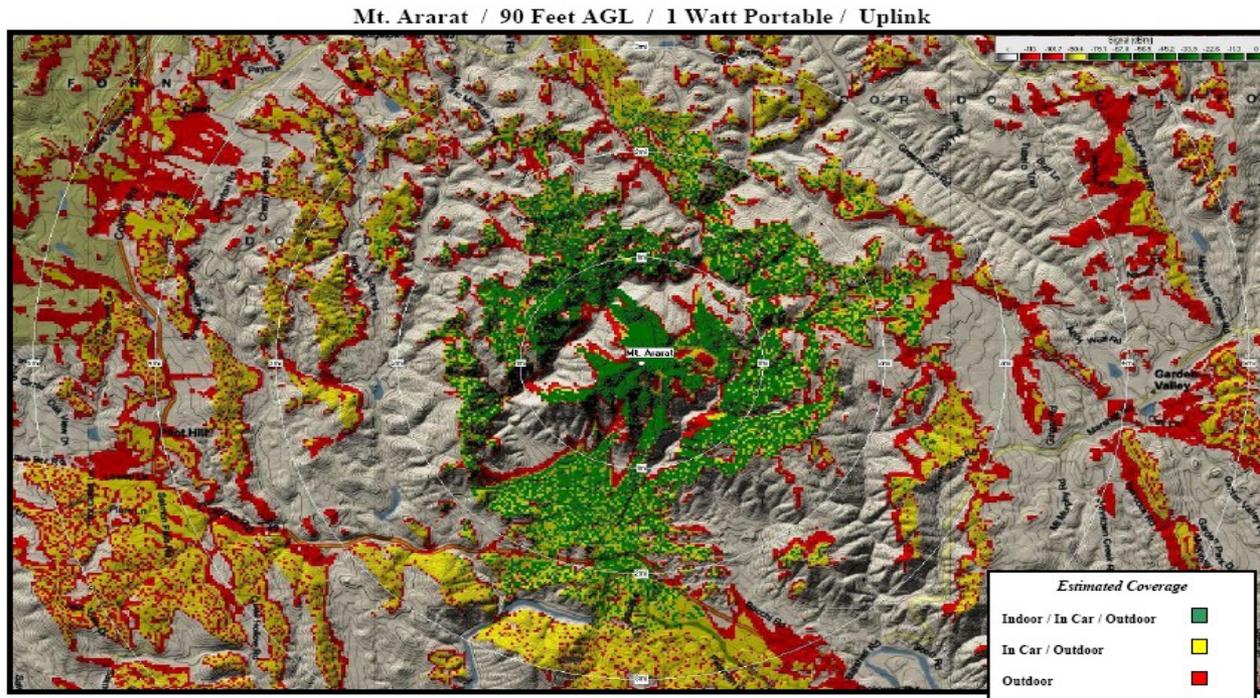
<http://www.cplus.org/rmw/english1.html>



The screenshot shows a website interface for "Radio Mobile" software. It features a navigation menu with links for "Français", "About...", and "Download...". The main content area includes a globe image, a radio tower icon, and the text "Radio Mobile Freeware by VE2DBE Since 1988". A prominent link reads "New free data download sites!". A disclaimer at the bottom states: "Radio Mobile software is a copyright of Roger Coudé VE2DBE. Radio Mobile is dedicated to amateur radio and humanitarian use. Although commercial use is not prohibited, the author cannot be held responsible for its usage. The outputs resulting from the program are under the author's responsibility."

Other Resources (cont'd)

■ Radio Propagation Example



Site: Mt. Ararat – STAC91
Coordinates (NAD 83): 38-51-13.0 N 120-56-27.0 W Elevation: 2000 Ft AMSL
Date: September 22, 2009

Other Resources (cont'd)

- Here are examples of ways to create a mini logging recorder using a Scanner and PC:
 - <http://www.butelsoftware.com>
 - <http://www.proscan.org>
- A number of other scanner software vendors can provide this service
- To get almost every frequency, PL and Talkgroup:
 - <http://www.RadioReference.com>

Other Resources (cont'd)

- Yahoo group specifically for communications personnel:
 - OEC-COML
 - <https://groups.yahoo.com/neo/groups/OEC-COML/info>

Test System

Continually Test and Evaluate Your System



Exercise 6

Initial Resource Order and Accountability

Objectives Review

- 1. Describe the COML's responsibilities in establishing an incident radio communications system.***
- 2. Describe use of command and tactical nets.***
- 3. What are the requirements for establishing an incident radio communications system?***
- 4. Describe specific communication information gathered.***
- 5. Describe considerations for evaluating needs and ordering supplies, materials, and personnel to keep unit operating.***

Questions?