

DEFINITIONS

1) Definition of Interoperability: Essential communication links within or between public safety and public service communication systems that permit units from two or more different agencies to interact with one another and to exchange information according to a prescribed method in order to achieve predictable results. This may include communication between governmental and non-governmental public safety and public service providers.

2) Types of Interoperability Responses: *Day-to-Day, Mutual Aid, and Task Force*

Day-to-Day Response (e.g., Mode 1, automatic aide, routine structure fire, automobile accident)

- Most often encountered type of interoperability.
- Commonly used in areas of concurrent jurisdiction.
- Commonly used where agencies need to monitor each other's routine traffic.
- If agencies are using different radio bands, may involve the use of multiple radios.
- Communications with other primary response agencies.
- Communications with receiving medical facilities.

Mutual Aid Response (e.g., Mode 2 or 3, railroad derailment, hazardous materials incident, multi-related disasters)

- Can involve multiple agencies with little opportunity for prior planning.
- Often requires assignment of several to many small groups, each on their own talk group or frequency.
- Once on scene, typically involves the use of portable and mobile radios.

Task Force Response (e.g., Mode 4, extended response/disaster recovery operation or major event)

- Usually involves several levels of government (federal, state, and/or local).
- Typically an opportunity for prior planning exists.
- Usually involves use of portable and/or covert equipment.
- Often requires extensive close-range communications.
- Users may rove in and out of infrastructure coverage (metro to rural, in and out of buildings).

3) Types of Organizations Involved: *Public Safety and Public Service*

- Public Safety Organizations include all federal, state, and local agencies that have been given, by law, the responsibility for protecting and preserving life, property and natural resources.
- Public Service Organizations include all agencies that help furnish, maintain, and protect the infrastructures that promote the public's safety and welfare.

4) Examples of Different Levels of Organizations: *Federal, State, and Local*

Federal Level Organizations

- Public Health Service
- Federal Bureau of Investigation (FBI)
- Federal Emergency Management Agency (FEMA)
- U.S. Forest Service
- Coast Guard
- CHEMTREC
- Bureau of Alcohol, Tobacco, and Firearms (BATF) Office

State Level Organizations

- State Fire Marshals
- State EMS Directors
- State Police
- State Department of Transportation
- Department of Fish and Wildlife

Local Level Organizations

- City Police Department
- Fire Department
- Hospital
- Hazardous Materials (HazMat) Team
- Urban Search and Rescue (USAR) Team
 - Confined Space Rescue Team
- Local Emergency Management
 - County Sheriff's Department
 - Emergency Medical Services
 - Private Security
 - Local Media
 - Chemical Recovery Companies
- Utilities
- Railroads

- Department of Highways/Roads
- State Emergency Preparedness
- State Department of Health

- American Red Cross

6. What radio frequencies does your agency use to communicate with other public safety and/or public service organizations? Fill in ALL that apply.

- Does not apply
- Low band VHF (25-50 MHz)
- High band VHF (150-174 MHz)
- Federal band UHF (406-420 MHz)
- Low band UHF (450-470 MHz)
- Low band UHF TV Sharing (470-512 MHz)
- 800 MHz (806-869 MHz)
- Other _____

7. HOW OFTEN does your agency have radio communication with the following levels of public safety and/or public service organizations (see definitions on page 2)?

	Daily	Weekly	Monthly	Yearly	Never
Federal Level?	<input type="checkbox"/>				
State Level?	<input type="checkbox"/>				
Local Level?	<input type="checkbox"/>				

8. Identify the TYPES of interoperability (see definitions on page 2) your agency has experienced during the 1997 calendar year with the following levels of public safety and/or public service organizations.

	Day-to-Day	Mutual Aid	Task Force
Federal Level?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State Level?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local Level?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Does your department have inter-governmental agreements with neighboring jurisdictions for mutually defined calls for service or disasters (i.e., automatic aid agreements)?

No

10. To what extent has your agency's need for interoperability with other public safety and public service organizations changed over the past five years? (where 1=decreased a great deal, 3=no change, and 5=increased a great deal)

1	2	3	4	5
<input type="checkbox"/>				

11. Rate your agency's ABILITY to establish a radio communication link with each of the following levels of public safety and/or public service organizations. (where 1=poor to 5=excellent.)

	1	2	3	4	5
Federal Level?	<input type="checkbox"/>				
State Level?	<input type="checkbox"/>				
Local Level?	<input type="checkbox"/>				

12. Estimate the total number of public safety and/or public service organizations at each level with which your agency requires radio communication.

Number of Organizations

<input type="text"/>	Federal Level
<input type="text"/>	State Level
<input type="text"/>	Local Level

13. Do you have a written communication interoperability agreement with any of the organizations you indicated in question #12? If no, skip to question #14. If yes, indicate how many for each level.

Number of Organizations

<input type="text"/>	Federal Level
<input type="text"/>	State Level
<input type="text"/>	Local Level

14. How many mutual aid and task force operations (see definitions on page 2) does your agency participate in during a typical year?

Number of Times

<input type="text"/>	Mutual Aid
<input type="text"/>	Task Force

15. What is the MAXIMUM number of organizations your agency has had to communicate with during any mutual aid or task force operation?

Maximum # of Organizations

<input type="text"/>	Mutual Aid
<input type="text"/>	Task Force

16. Rate the ABILITY of your agency's radio system to effectively handle the three types of interoperability as defined on page 2. (where 1=poor to 5=excellent)

	1	2	3	4	5
Day-to-Day?	<input type="checkbox"/>				
Mutual Aid?	<input type="checkbox"/>				
Task Force?	<input type="checkbox"/>				

17. Rate your agency's OVERALL ABILITY to handle interoperability situations 5 years ago, today, and estimate its ability 5 years into the future. (where 1=poor to 5=excellent)

	1	2	3	4	5
5 years ago?	<input type="radio"/>				
Today?	<input type="radio"/>				
5 years from now?	<input type="radio"/>				

18. Based on your agency's experience, indicate the severity of each of the following obstacles to interoperability. (where 1=not a problem to 5=major problem)

	1	2	3	4	5
Different Bands?	<input type="radio"/>				
Human and Institutional Limitations?	<input type="radio"/>				
Different Communication Modes (analog vs. digital)?	<input type="radio"/>				
Different Communication Modes (conventional vs. trunked)?	<input type="radio"/>				
Different Coverage Areas?	<input type="radio"/>				
Limitations of Commercial Services?	<input type="radio"/>				
Lack of Adequate Planning?	<input type="radio"/>				
Limitations in Funding?	<input type="radio"/>				
Political/Turf Issues?	<input type="radio"/>				

19. What LEVEL of interoperability planning would best serve your agency? Fill in ONLY ONE.

Local Region (multi-jurisdiction)
 State-wide
 Multi-state Region
 National

20. To your knowledge, does your state have a formal written interoperability plan?

Yes No - SKIP to question #23

21. How effective is your states communication interoperability plan? (where 1=poor to 5=excellent)

1 2 3 4 5 Don't Know

22. How closely does your state's communication interoperability plan reflect actual interoperability practices? (where 1=not at all to 5=extremely close)

1 2 3 4 5 Don't Know

23. To your knowledge, to what extent has the availability of NPSPAC channels (821-869 MHz) alleviated communication interoperability problems in your state? (where 1=not at all to 5=extensively)

1 2 3 4 5 Don't Know

Section III. INFORMATION AND TRAINING

1. How important is each source of information to your agency when planning for the purchase of communication technologies? (where 1= not important to 5= extremely important)

	1	2	3	4	5
Equipment manufacturers?	<input type="radio"/>				
Professional journals/magazines?	<input type="radio"/>				
Professional/Trade Conferences?	<input type="radio"/>				
Independent Consultants?	<input type="radio"/>				
Other government agencies?	<input type="radio"/>				
Local college or university?	<input type="radio"/>				
Other:	<input type="radio"/>				

2. Does your agency participate in joint training exercises with other organizations that involve the actual use of communication equipment?

Yes No - SKIP to question #5

3. Regarding question #2 above, indicate the levels of other organizations that participate in the joint training exercises. Include both government and non-government organizations. Fill in ALL that apply.

Federal Level State Level Local Level

4. In what year did your agency most recently participate in joint training exercises that involved the actual use of communication equipment?

5. How well do you believe your agency's training has prepared your staff to handle communication interoperability situations? (where 1= poor to 5= excellent)

1 2 3 4 5

6. How familiar is your agency with the following? (where 1=no knowledge to 5=very knowledgeable)

	1	2	3	4	5
Project 25 Standards?	<input type="checkbox"/>				
FCC Refarming efforts?	<input type="checkbox"/>				
FCC Frequency Application Process?	<input type="checkbox"/>				
NPSPAC Regional Planning Process?	<input type="checkbox"/>				
FCC Internet Sites?	<input type="checkbox"/>				
TIA/EIA-102 Specifications?	<input type="checkbox"/>				
FCC Spectrum Allocation/ (746-806 MHz)?	<input type="checkbox"/>				

Section IV. COMMUNICATION SYSTEMS

1. Indicate the types of communication equipment used by your agency. Fill in ALL that apply.

- Hand-held land portable radio
- Vehicle-mounted mobile radio
- Pagers
- Citizens band radio
- Amateur radio
- Telephone line
- FAX line
- Cellular phone/voice
- Cellular FAX
- Mobile data terminal (Dumb-Terminal)
- Mobile laptop computer
- EKG or other Medical Telemetry
- Fixed Wing Aircraft Radio
- Helicopter Radio

2. Does your agency SHARE the infrastructure for its land mobile radio base system with other organizations?

- Yes No- SKIP to question #4

3. How involved is your agency in the decision-making process related to the operation of your land mobile radio system? (where 1= not at all to 5= extensively)

1 2 3 4 5

4. Which of the following best describes your agency's communications arrangements?

- Independently owned and operated communications center used exclusively by our department.
- Part of a communications center that serves several public safety and/or public service organizations in our jurisdiction
- Part of a multi-agency, multi-jurisdictional shared communications center
- Other? Please describe:

5. Does your agency own or lease its PRIMARY land mobile radio system? Fill in ONLY ONE.

- Own Lease Does not apply

6. How many of the following are in your land mobile radio system? If none, place a zero (0) next to the corresponding item.

- Base Stations (FB)
- Repeaters
- Control Stations (FX1)

7. Approximately how old is your CURRENT land mobile radio system?

years old

8. Which best describes your PRIMARY land mobile radio system?

- Analog Digital

9. Does your agency use BOTH analog and digital radio systems?

- Yes No

10. Which best describes your PRIMARY land mobile radio system?

- Conventional (not trunked)
- Trunked

11. Identify the radio frequencies your agency CURRENTLY uses for VOICE-ONLY communication by indicating the current NUMBER of channels in each band. Fill in ONLY those that apply.

CURRENTLY USES	CURRENT # of VOICE-ONLY channels
<input type="radio"/> Does not apply	
Low band VHF (25-50 MHz)	<input type="text"/>
High band VHF (150-174 MHz)	<input type="text"/>
UHF (406-512 MHz)	<input type="text"/>
800 MHz (806-869 MHz)	<input type="text"/>
Other _____	<input type="text"/>

12. Identify the radio frequencies your agency CURRENTLY uses for DATA-ONLY communication by indicating the current NUMBER of channels in each band. Fill in ONLY those that apply.

CURRENTLY USES	CURRENT # of DATA-ONLY channels
<input type="radio"/> Does not apply	
Low band VHF (25-50 MHz)	<input type="text"/>
High band VHF (150-174 MHz)	<input type="text"/>
UHF (406-512 MHz)	<input type="text"/>
800 MHz (806-869 MHz)	<input type="text"/>
Other _____	<input type="text"/>

13. Identify the radio frequencies your agency CURRENTLY uses for ALTERNATE VOICE & DATA by indicating the current NUMBER of channels in each band. Fill in ONLY those that apply.

CURRENTLY USES	CURRENT # of ALTERNATE VOICE & DATA channels
<input type="radio"/> Does not apply	
Low band VHF (25-50 MHz)	<input type="text"/>
High band VHF (150-174 MHz)	<input type="text"/>
UHF (406-512 MHz)	<input type="text"/>
800 MHz (806-869 MHz)	<input type="text"/>
Other _____	<input type="text"/>

14. Does your agency have the ability to patch across channels?

Yes No - SKIP to question #18

15. How many simultaneous cross patches can be set up?

of cross-patches

16. Rate the effectiveness of cross patches as a tool for achieving interoperability. (where 1=not effective to 5=extremely effective)

1 2 3 4 5

17. Is a dispatcher REQUIRED to set up and break down the patch?

No

18. How serious are the following problems regarding your land-mobile radio system? (where 1=not a problem to 5=major problem)

	2	3	4	5
Not enough channels?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Not enough talk groups?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Dead spots?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fading?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Frequency Interference	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Static?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Battery problems?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Not enough equipment?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outdated equipment?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Equipment Size/Weight	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Different Types of Equipment?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Operational Difficulty?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

19. If you marked "not enough channels" in question #18 as a problem, estimate the number of ADDITIONAL channels your agency needs for each of the following.

ADDITIONAL VOICE-ONLY Channels

ADDITIONAL DATA-ONLY Channels

ADDITIONAL ALTERNATE VOICE & DATA Channels

20. To what extent does topography/terrain hinder the effectiveness of your land mobile radio base system? (where 1= no problem to 5= major problem)

1 2 3 4 5

21. To what extent does the presence of high-rise buildings hinder the effectiveness of your land mobile radio base system? (where 1= no problem to 5= major problem)

1 2 3 4 5

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22. Who handles your agency's RADIO SPECTRUM LICENSING issues?

<input type="checkbox"/> My agency <input type="checkbox"/> A regional group <input type="checkbox"/> Other _____	<input type="checkbox"/> The county <input type="checkbox"/> The state <input type="checkbox"/> Don't know
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23. What organization handles your RADIO FREQUENCY COORDINATION with the FCC? Fill in ALL that apply.

APCO
 IMSA
 FCCA
 AASHTO
 Other _____

24. Does your agency PAY outsiders for radio spectrum frequency coordination services?

Yes No

25. How many times does your agency interact with a radio spectrum frequency coordinator in a typical year?

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 times per year

26. Is your agency represented on local or regional committees to resolve interoperability issues?

Yes No

27. How satisfied is your agency with the following? (where 1= very dissatisfied to 5= very satisfied)

		2	3	4	5
FCC Licensing procedure					
FCC Regulations?					
FCC Administrative procedures?					
FCC Enforcement?					
NPSPAC Regional Planning Process?					

28. Indicate ALL services your agency USES or PLANS TO USE within the next 5 years. If your agency does not use or plan to use ANY of the services, please fill here _____.

Currently Use		
<input type="radio"/>		Cellular/Voice
<input type="checkbox"/>		Cellular Digital Packet Data (CDPD)
<input type="checkbox"/>		Personal Communications System (PCS)
<input type="checkbox"/>		Specialized Mobile Radio (SMR)
<input type="checkbox"/>		Mobile Satellite System
<input type="checkbox"/>		Global Positioning System (GPS)
<input type="checkbox"/>		Paging
<input type="checkbox"/>		Cellular Switched Data
<input type="checkbox"/>		Local Multi-Point Distribution Service (LMDS)/Multi Point Multi-Channel Distribution Services (MMDS)

29. Does your agency use a paging system for emergency "alerting" of personnel?

Yes No - SKIP to question #32

30. Which of the following best describes your agency's paging system?

Tone and/or voice
 Alfa-numeric digital
 Both
 Other _____

31. Rate your agency's satisfaction with the performance of the paging system. (where 1 = not at all satisfied to 5 = extremely satisfied)

1 2 3 4 5

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32. Does your agency use the Internet for official business?

Yes No

32. Does your agency have essential information that needs to be accessed in real-time by mobile users?

Yes No

33. Does your agency use the following external information networks to interoperate with outside organizations? Fill in ALL that apply.

- CHEMTREC (Hazardous Materials)
- Local/Regional Poison Control
- Local Area Network (LAN)
- Wide Area Network (WAN)
- Other _____

34. Does your agency have plans to replace or substantially upgrade its land mobile radio system within the next ten years?

- Yes
- No - SKIP to question #44

35. In what year does your agency plan to replace or substantially upgrade its land mobile radio system?

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36. What is your agency's preference for its NEXT land mobile radio system?

- Analog
- Digital
- Don't know

37. Does your agency plan to use BOTH analog and digital radio systems?

- Yes
- No
- Don't know

38. What is your agency's preference for its NEXT land mobile radio system?

- Conventional (not trunked)
- Trunked
- Don't Know

39. Identify the radio frequencies your agency needs for VOICE-ONLY communication for its NEXT land mobile radio base system and indicate the TOTAL NUMBER of channels it will need in each band. Fill in ONLY those that apply.

NEEDS	TOTAL # Of VOICE-ONLY channels
<input type="checkbox"/> Does not apply	
Low band VHF (25-50 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
High band VHF (150-174 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
UHF (406-512 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
800 MHz (806-869 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
Other _____	<input style="width: 60px; height: 20px;" type="text"/>

40. Identify the radio frequencies your agency needs for DATA-ONLY communication for its NEXT land mobile radio system and indicate the TOTAL NUMBER of channels it will need in each band. Fill in ONLY those that apply.

NEEDS	TOTAL # of DATA-ONLY channels
<input type="checkbox"/> Does not apply	
Low band VHF (25-50 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
High band VHF (150-174 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
UHF (406-512 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
800 MHz (806-869 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
Other _____	<input style="width: 60px; height: 20px;" type="text"/>

41. Identify the radio frequencies your agency needs for ALTERNATE VOICE & DATA communication for its NEXT land mobile radio system and indicate the TOTAL NUMBER of channels it will need in each band. Fill in ONLY those that apply.

CURRENTLY USES	TOTAL # of ALTERNATE VOICE & DATA channels
<input type="checkbox"/> Does not apply	
Low band VHF (25-50 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
High band VHF (150-174 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
UHF (406-512 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
800 MHz (806-869 MHz)	<input style="width: 60px; height: 20px;" type="text"/>
Other _____	<input style="width: 60px; height: 20px;" type="text"/>

42. To what extent is funding a concern for your agency in upgrading its land mobile radio system? (where 1=not a problem to 5=major problem)

1	2	3	4	5
<input style="width: 250px; height: 20px;" type="text"/>				

43. How does your agency plan to fund its next land mobile radio system?

	State funding
	General fund budget appropriations
	Capital improvement budget
	Bond financing
	Fees
	Other _____
	Don't know

44. How is your department funded?

<input type="checkbox"/>	State
<input type="checkbox"/>	County
<input type="checkbox"/>	Municipal
<input type="checkbox"/>	Independent
<input type="checkbox"/>	District
<input type="checkbox"/>	Other: _____

49. How likely is it that your agency will adopt the Association for Public-Safety Communications Officials (APCO) Project 25 Interoperability Standards for its next land mobile radio system? (where 1=highly unlikely to 5=highly likely)

1 2 3 4 5

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45. What is the TOTAL number of mobile data terminals and/or lap-top computers your agency CURRENTLY uses? If none, place a zero (0) next to the corresponding item.

	# Mobile Data Terminals (Dumb Terminals)
	# Mobile Laptop Computers

46. What is the TOTAL number of mobile data terminals and/or lap-top computers your agency estimates it WILL USE in the year 1999? If none, place a zero (0) next to the corresponding item.

	# Mobile Data Terminals (Dumb Terminals)
	# Mobile Laptop Computers

47. Regarding mobile data terminals and mobile laptop computers identify the types of WIRELESS DATA communication (not voice) your agency currently USES and PLANS TO USE within the next 2 years. Fill in yes or no for each type.

	Currently Use		Plans to Use (within 2 years)					
	Yes	No	Yes	No				
Free Text?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
Data Base Information?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
Still Images (e.g., photos or maps)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
E-mail	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table>							
Report Writing	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table>							

48. How important will interoperability ISSUES be to your agency when it purchases its next land mobile radio system? (where 1=not important to 5=extremely important)

1 2 3 4 5

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Section V ADDITIONAL INFORMATION

*The responses to the following questions will be scanned by a computer.
Please PRINT and stay within the boxes provided. Continue
on the next page, if needed.*

1. As new technologies are introduced and digital communications mature, do you think there should be federal or state mandates with “date-certain” timelines to ensure interoperability? No
Please explain your reasons.

2. Has the lack of wireless communications interoperability ever hampered your ability to respond to a call? No If yes, briefly describe the situation and adjustments that were made.

3. What are the wireless communications interoperability issues for your department? How have you solved them?

4. Does the lack of wireless radio interoperability affect your department’s ability to interact with other agencies in surrounding jurisdictions? No If yes, briefly describe how and adjustments that have been made.

5. What operational, technological or regulatory issues do you think should be considered in the planning and implementation of a nationwide WIRELESS network for public safety and emergency preparedness entities at all levels of federal, state and local government ?

