

Department of Homeland Security **Office of Inspector General**

DHS' Oversight of Interoperable Communications





OFFICE OF INSPECTOR GENERAL
Department of Homeland Security

Washington, DC 20528 / www.oig.dhs.gov

November 2, 2012

MEMORANDUM FOR: The Honorable Rafael Borrás
Under Secretary for Management

FROM: Charles K. Edwards
Acting Inspector General

SUBJECT: *DHS' Oversight of Interoperable Communications*

Attached for your action is our final report, *DHS' Oversight of Interoperable Communications*. We incorporated the formal comments from the Departmental GAO-OIG Liaison Office in the final report.

The report contains two recommendations aimed at improving oversight of interoperable radio communications. Your office concurred with one of the recommendations. As prescribed by the Department of Homeland Security Directive 077-01, Follow-Up and Resolutions for the Office of Inspector General Report Recommendations, within 90 days of the date of this memorandum, please provide our office with a written response that includes your (1) agreement or disagreement, (2) corrective action plan, and (3) target completion date for each recommendation. Also, please include responsible parties and any other supporting documentation necessary to inform us about the current status of the recommendation. Until your response is received and evaluated, the recommendations will be considered open and unresolved. Based on information provided in your response to the draft report, we consider the second recommendation resolved. Once your office has fully implemented the recommendation, please submit a formal closeout letter to us within 30 days so that we may close the recommendation(s). The memorandum should be accompanied by evidence of completion of agreed-upon corrective actions and of the disposition of any monetary amounts.

Consistent with our responsibility under the *Inspector General Act*, we are providing copies of our report to appropriate congressional committees with oversight and appropriation responsibility over the Department of Homeland Security. We will post the report on our website for public dissemination.

Please call me with any questions, or your staff may contact Anne Richards, Assistant Inspector General for Audits, at (202) 254-4100.

Attachment





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Abbreviations

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|-------|--|
| DHS | Department of Homeland Security |
| GAO | U.S Government Accountability Office |
| JWPMO | Joint Wireless Program Management Office |
| MOA | Memorandum of Agreement |
| OIG | Office of Inspector General |
| S&T | Science &Technology |



Executive Summary

The Department of Homeland Security (DHS) includes an amalgamation of organizations that work together to prevent and respond to terrorist attacks, natural disasters, and other threats. Such collaboration requires that components establish effective communication among external and internal partners during operations. DHS established an internal goal of developing interoperable radio communications and identified common channels, and its components invested about \$430 million in equipment, infrastructure, and maintenance to meet communication requirements. We performed this audit to determine whether DHS' oversight ensured achievement of Department-wide interoperable radio communications.

DHS did not provide effective oversight to ensure that its components achieved Department-wide interoperable radio communications. It did not establish an effective governing structure that had the authority and responsibility to oversee its goal of achieving Department-wide interoperability. Without a governing structure, DHS had limited interoperability policies and procedures, and component personnel did not have interoperable radio communications. As a result, only 1 of 479 radio users tested could access and communicate using the specified common channel. Further, of the 382 radios tested, only 20 percent (78) contained all the correct program settings for the common channel. Until DHS develops an effective governing structure and makes a concerted effort to attain Department-wide interoperability, overall progress will remain limited.

We made two recommendations to improve DHS' oversight of interoperable radio communications. DHS did not concur with the first recommendation and concurred with the second and is taking action to implement the recommendation.



Background

The establishment of DHS in 2003 brought together the functions of 22 Federal departments and agencies. As a result, the Department today includes a network of organizations that work together to prevent and respond to terrorist attacks, natural disasters, and other threats. Such collaboration requires that components establish effective communication among external and internal partners during operations. DHS components perform daily operations to protect the United States from attack and illegal entry, enforce Federal immigration and customs laws, and respond to disasters. During their daily operations and emergency responses, component personnel depend on secure, reliable, and timely access to critical information to carry out their missions.

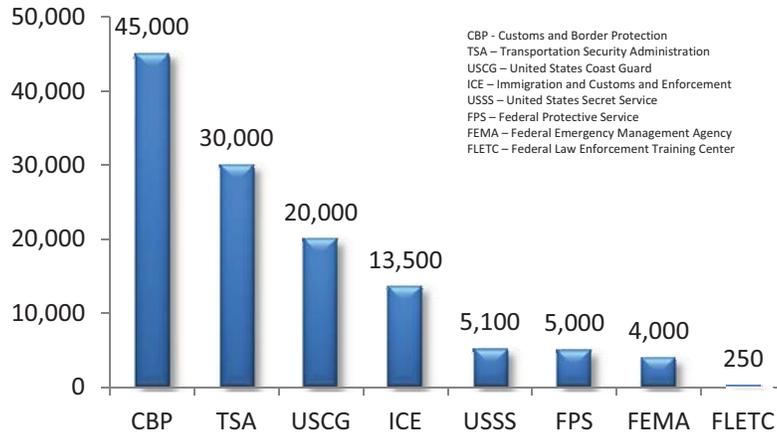
DHS' priority was to assist State and local first responders with attaining interoperable communications. DHS created policies, guidance, and templates to aid in achieving interoperability for first responders and provided assistance to State and local agencies. Since 2003, it has provided about \$18.5 billion in Federal Homeland Security grants to State and local governments to improve emergency communications. These grants allowed State and local governments to enhance interoperability of their emergency response systems. According to the U.S. Government Accountability Office (GAO), these systems have improved, but full interoperability remains a distant goal.¹ During this same time, DHS components invested about \$430 million in equipment, infrastructure, and resources to meet their communication needs.

Radio systems allow personnel to receive or share information that is critical for operational awareness and personnel safety. DHS' radio systems include handheld or mobile radios and supporting infrastructure and services, and serve about 123,000 radio field users. Figure 1 shows the approximate number of radio users for each component as of December 2011.

¹ GAO-12-343, *Emergency Communications — Various Challenges Likely to Slow Implementation of a Public Safety Broadband Network*; February 2012



Figure 1: Approximate Number of Radio Users for Each Component, as of December 2011



Source: DHS

Interoperable Radio Communications

DHS personnel require interoperability to communicate both with other DHS components and external partners, including Federal, State, and local entities. DHS established a goal that all components would be able to communicate using interoperable radio systems, and it planned to achieve that goal by establishing a common radio channel and purchasing standardized equipment.

Results of Audit

DHS did not provide effective oversight to ensure that its components achieved Department-wide interoperable communications. It established a goal for internal interoperability and established common radio channels. However, only 1 of 479 radio users we reviewed could access and communicate using the specified common channel. Further, of the 382 radios we tested, only 20 percent (78) contained all the correct program settings, including the name, for the common DHS channel. DHS did not establish an effective governing structure that had the authority and enforcement responsibility to oversee its goal of achieving Department-wide interoperability. Since it did not have an authoritative governing structure, DHS had limited interoperability policies and procedures, and the components did not inform radio users of the guidance that DHS developed. Internal interoperability was not a priority for DHS components, and they did not exploit opportunities to achieve Department-wide interoperable communications. As a result, DHS personnel do not have reliable interoperable communications for daily operations, planned events, and emergencies.



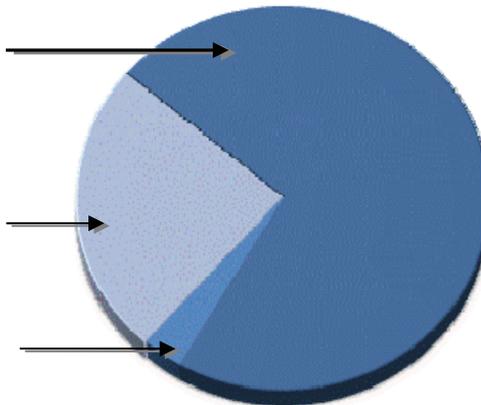
DHS Interoperable Communications

Radio Users

Component personnel either did not know of or could not find the DHS common channel because the components did not effectively inform them of the correct channel. We selected 479 radio users to determine whether they could communicate using a common channel.² We examined interoperability in the simplest form—radio to radio using the specified common channel. Only one radio user could access and communicate across the channel. The remaining 478 (99.8 percent) radio users were not aware of the channel (345), could not find it (118), or found a legacy common channel (15) that had been transferred from the Department of Treasury when DHS formed in 2003. Figure 2 shows the results of our analysis of radio users.

Figure 2: Reasons Why Radio Users Could Not Communicate Using the Specified Common Channel

- 345 (72 percent) did not know about the channel.
- 118 (25 percent) knew of the channel, but could not find it in their radios.
- 15 (3 percent) found a legacy common channel, but not the specified channel.



Source: DHS OIG

Radio Programming

DHS did not exploit opportunities to achieve Department-wide interoperable communications. DHS' National Interoperability Field Operations Guide identified 18 Federal interoperable channels and encouraged component personnel to program radios with the channels. We reviewed radio frequencies

² DHS identified two channels for interoperability. We selected the channel that personnel could use without supporting infrastructure.



to determine whether component personnel programmed the radios with both the DHS common channel and a Federal interoperable channel.

Of the 479 radio users tested, we downloaded information from 382 of their radios.³ We analyzed about 96,000 channels programmed into the radios to determine whether the components programmed specified information, including channel name and frequency. Our analysis showed that all of the radios were capable of interoperability; however, component personnel did not program a majority of radios with the correct interoperable channel settings. In some cases, component personnel did not program the frequencies into the radios. In other cases, component personnel programmed the correct frequency, but one or more program settings were not consistent with guidance. The following shows the results of our radio programming analysis of the interoperable channels.

DHS Common Channel

- 205 (54 percent) did not contain the common frequency;
- 99 (26 percent) contained the common frequency; however, one or more of the program settings were not in accordance with the defined interoperability settings; and
- 78 (20 percent) contained all the correct program settings, including the name.

Federal Interoperability Channel

- 111 (29 percent) did not contain the Federal frequency;
- 170 (45 percent) contained the Federal frequency; however, one or more of the program settings were not in accordance with the defined interoperability settings; and
- 101 (26 percent) contained all the correct program settings, including the name.

Our analysis also showed that component personnel did not program channel names according to guidance or did not define channel names. For example, we identified 99 radios that contained the DHS common frequency and determined

³ We were unable to obtain information for 97 radios for various reasons, such as the fact that our software was unable to read the radios.



that the components used 23 name variations for the frequency. According to GAO, consistent naming conventions are necessary to achieve interoperability.⁴ GAO found little uniformity in the naming of radio channels used by first responders—this same requirement applies to internal DHS interoperability.

Authority and Responsibility for Interoperability

DHS Structure

DHS did not establish an effective governing structure that had the authority and responsibility to oversee its goal of achieving Department-wide interoperability. According to the Office of Management and Budget, an effective governing structure includes clearly defined areas of responsibility, appropriately delegated authority, and a suitable hierarchy for reporting. DHS created working groups, committees, and offices to explore Department-wide communication issues, including interoperability. However, none had the authority to implement and enforce their recommendations. To manage radio communication issues, DHS—

- In 2003, established the National Wireless Management Office to develop policies for Department-wide interoperability;
- In 2006, transformed the National Wireless Management Office into the Wireless Services Branch, which established the Wireless Working Group to ensure that DHS-wide approaches to wireless communications were developed and implemented in an integrated manner;
- In 2009, established the One DHS Emergency Communications Committee to coordinate Department-wide emergency communications; and
- In 2011, directed the Executive Steering Committee to create the Joint Wireless Program Management Office (JWPMO) to coordinate wireless communication activities and develop solutions for new technology.

The multiple management and organizational changes hindered DHS' ability to provide effective oversight. Components independently developed and managed their own radio programs with no formal coordination from DHS. In October 2011, the One DHS Emergency Communications Committee prepared a Department-wide mission needs statement, which said that DHS radio users require interoperability to communicate with other DHS components and with

⁴ GAO 09-604, *Emergency Communications—Vulnerabilities Remain and Limited Collaboration and Monitoring Hamper Federal Effort*, June 2009.

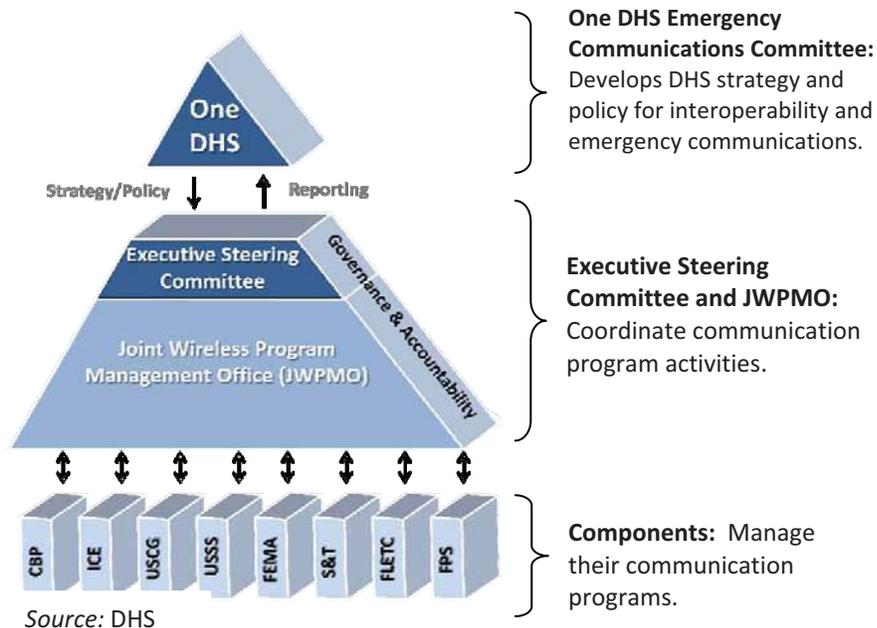


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Federal, State, local, and tribal entities. DHS’ Executive Steering Committee developed a draft charter to create the JWPMO.

According to the JWPMO’s draft charter, the JWPMO will coordinate Department-wide radio activities and execute the One DHS Emergency Communications Committee’s strategies, plans, and policies. It will be composed of dedicated Department resources and, as appropriate, representatives from other Federal agencies. Each of the components will contribute resources in accordance with a Memorandum of Agreement (MOA). Components will tailor their own agreements that define their level of participation. At the time of our review, the components had not prepared their agreements. Effectively, the JWPMO has no authority to implement and enforce standardized policies and procedures to take advantage of interoperability opportunities. Figure 3 shows DHS’ current organizational structure.

Figure 3: Current DHS Communications Structure



Policies and Procedures

Because it did not have an authoritative governing structure, DHS had limited policies and procedures related to interoperability. In March 2003, DHS issued Management Directive 4100, *Wireless Management Office*, which stated that the National Wireless Management Office would ensure interoperability for DHS



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components. However, it did not provide policy to components to standardize Department-wide radio activities. In 2009, the Wireless Working Group identified and recommended that the components use the common channels for seamless interoperable communications. In response, the Wireless Services Branch provided the components with specific instructions for programming radios, including channel names and frequency; however, the channels were not mandatory. As a result, the components did not inform their radio users of the common channels and did not program the radios consistent with the guidance.

Conclusion

DHS did not provide effective oversight to ensure that its components achieved Department-wide interoperable radio communications. It did not establish an effective governing structure that had the authority and responsibility to oversee its goal of achieving Department-wide interoperability. Without an authoritative governing structure to oversee emergency communications, DHS had limited interoperability policies and procedures. As a result, personnel do not have interoperable communications that they can rely on during daily operations, planned events, and emergencies.

Recommendations

We recommend that the Under Secretary for Management:

Recommendation #1:

Create a structure with the necessary authority to ensure that the components achieve interoperability.

Recommendation #2:

Develop and disseminate policies and procedures to standardize Department-wide radio activities, including program settings such as naming conventions to ensure interoperability.

Management Comments and OIG Analysis

We obtained written comments on the draft report from DHS' Departmental GAO-OIG Liaison Office. We reviewed the comments and, where appropriate, made changes to the report. According to its response to the draft report, DHS did not concur with recommendation #1 and concurred with recommendation



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#2. We included a copy of the management comments in their entirety in appendix B. The following is an evaluation of DHS' official response.

Management Comments to Recommendation #1

DHS did not concur with the recommendation and stated that its existing structure has the necessary authority to ensure the components achieve interoperability.

OIG Analysis: In its response, the Department acknowledged it encountered challenges in achieving Department-wide interoperable communication goals in the past, and states it since learned from the weaknesses of the initial management efforts. The Department created the JWPMO to coordinate Department-wide radio activities, but based on our review, the JWPMO does not have the necessary authority to ensure the components achieve interoperability. The Department designed JWPMO around the concept of voluntary membership through MOAs that allow the components to tailor the agreements and define their level of participation with the JWPMO. The structure, based upon cooperation and not authority, is the same management approach that proved ineffective in the past and the use of MOAs will continue to hinder DHS' ability to achieve interoperable communications. Without the proper authority, the Department has a high probability of repeating past mistakes. We consider the recommendation unresolved and open.

Management Comments to Recommendation #2

DHS concurred with the recommendation and acknowledged the need to develop and disseminate policies and procedures to drive and standardize Department-wide communications interoperability activities. According to its response, DHS stated that it will develop a Departmental interoperability plan and disseminate policies and procedures to standardize Department-wide radio activities, including program settings, such as naming conventions to ensure interoperability.

OIG analysis: We consider DHS' actions as responsive and consider the recommendation resolved. However, it will remain open until DHS provides a copy of the Departmental interoperability plan and its policy and procedures to standardize department-wide radio activities.



Appendix A

Objectives, Scope, and Methodology

The Department of Homeland Security (DHS) Office of Inspector General (OIG) was established by the *Homeland Security Act of 2002* (Public Law 107-296) by amendment to the *Inspector General Act of 1978*. This is one of a series of audit, inspection, and special reports prepared as part of our oversight responsibilities to promote economy, efficiency, and effectiveness within the Department.

This report provides the results of our work to determine whether DHS' oversight ensured Department-wide interoperable radio communications. To achieve our objectives, we—

- Interviewed DHS officials and component personnel from U.S. Customs and Border Protection, U.S. Immigration and Customs Enforcement, the Transportation Security Administration, the U.S. Secret Service, the Federal Emergency Management Agency, the Federal Protective Service, the Federal Law Enforcement Training Center, and the U.S. Coast Guard;
- Conducted site visits in Houston, TX; Chicago, IL; Los Angeles and San Diego, CA; and New York, NY;
- Reviewed policies and procedures related to radio interoperability;
- Conducted tests of 479 radio users to determine whether they could communicate on the designated interoperable radio channels;
- Analyzed data for 382 radios to determine whether the component personnel programmed the radios with interoperable radio channels; and
- Assessed the reliability and validity of radio frequency data.

We conducted this performance audit between March 2011 and March 2012 pursuant to the *Inspector General Act of 1978*, as amended, and according to generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based upon our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based upon our audit objectives.



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Appendix B
Management Comments to the Draft Report

U.S. Department of Homeland Security
Washington, DC 20528



**Homeland
Security**

MEMORANDUM FOR: Charles K. Edwards
Acting Inspector General

FROM: Jim H. Crumpacker *Christopher B. [unclear] For*
Director, Departmental GAO-OIG Liaison Office

SUBJECT: Draft Report OIG-11-057, "DHS' Oversight of Interoperable Communications"

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the Office of Inspector General's (OIG's) work in planning and conducting its review and issuing this report.

The Secretary and Deputy Secretary made a priority of advancing interoperable emergency communications and some significant strides have been made since the establishment of the Department in 2003. The Department appreciates OIG's recognition that DHS has created policies, guidance, and templates to aid in achieving interoperability for first responders and provided assistance to state and local agencies. As also noted, the Department has provided about \$18.5 billion in Federal Homeland Security grants to state and local governments, which have allowed them to enhance the interoperability of their emergency response systems.

While significant progress has been made in assisting DHS's external partners in attaining interoperable communications, the Department acknowledges it has had some challenges in achieving Department-wide interoperable communications goals. The Department learned from the weaknesses of the initial management efforts and believes that it has established a governing structure empowered with the authority and responsibilities to ensure the goals are achieved. Specifically, in 2009, the OneDHS Emergency Communications Committee (OneDHS EC) was established and delegated the authority to develop DHS policy and strategy for interoperability and emergency communications. In addition to the formation of OneDHS EC, the DHS Tactical Communications Network (TACNET) Executive Steering Committee (ESC) was established to provide effective governance, oversight, and guidance to the TACNET program and related initiatives. The ESC charter specifies that it has the authority to oversee all aspects of the execution of the TACNET program. The ESC also created the charter for the DHS Joint Wireless Program Management Office (JWPMO), which was finalized on April 6, 2012.

Under the new charter, the JWPMO is authorized to deliver the joint next generation tactical communications capabilities and resources to the operators across the Department. Specifically, the JWPMO plans, develops, and implements the DHS enterprise-level next generation tactical wireless communications solutions that deliver voice, data, video, and mobile broadband applications to mission-critical users. The JWPMO is led by an Executive Director who reports directly to the DHS CIO and has delegated responsibility and accountability for the execution of JWPMO programs, projects, and enterprise services. Its membership is composed of dedicated resources and representatives from across DHS and, as appropriate, representatives from other federal agencies. The stakeholder organizations contribute resources in accordance with an organizationally specific



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Memorandum of Agreement (MOA). Although all the Component MOAs have not been prepared, the requisite structure has been established with the authority to execute DHS's wireless communications solutions.

The draft report contained two recommendations. The Department non-concurs with the first and concurs with the second. Specifically, OIG recommended that the Under Secretary for Management (USM):

Recommendation 1: Create a structure with the necessary authority to ensure that the components achieve interoperability.

DHS Response: Non-concur. DHS believes that it has already established a structure with the necessary authority to ensure that the Components achieve interoperability. DHS agrees to finalize and more effectively leverage the existing structure by completing the MOAs from each stakeholder and working through the JWPMO membership to implement and enforce the standardized policies and procedures for taking advantage of interoperability opportunities.

Recommendation 2: Develop and disseminate policies and procedures to standardize Department-wide radio activities, including program settings such as naming conventions to ensure interoperability.

DHS Response: Concur. The USM agrees with the ongoing need for development and dissemination of policies and procedures to drive and standardize Department-wide communications interoperability activities. The USM has directed the One DHS EC and the JWPMO to develop the departmental interoperability plan. Additionally, the One DHS EC and the JWPMO will develop and disseminate policies and procedures to standardize Department-wide radio activities, including program settings, such as naming conventions to ensure interoperability.

Again, thank you for the opportunity to review and comment on this draft report. Technical comments were previously provided under separate cover. Please feel free to contact me if you have any questions. We look forward to working with you in the future.



Appendix C

Major Contributors to This Report

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Appendix D

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Should you be unable to access our website, you may submit your complaint in writing to: DHS Office of Inspector General, Attention: Office of Investigations Hotline, 245 Murray Drive, SW, Building 410/Mail Stop 2600, Washington, DC, 20528; or you may call 1 (800) 323-8603; or fax it directly to us at (202) 254-4297.

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