
Agency Name: Miami-Dade Police Department
Technology Program Name: MDPD/TSA COMMUNICATIONS INTEROPERABILITY SOLUTION
Competitive Category: Excellence in Communications and Interoperability
Agency Size: Large
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Executive Summary:

The lack of voice interoperability between federal, state, and local first responder agencies is a critical gap in the safety and security of the United States. Miami-Dade Police Department has connected disparate land mobile radio (LMR) systems to its radio system by using conventional interfaces. All local, state and federal public safety partners in the Region 7 have access to our communications center. MDPD currently has 12 conventional interfaces plus 22 municipalities that directly use our system. Our communication center can connect any public safety partner to one another. This nomination is for the successful implementation of wireless-based technology that improves mission-critical voice communications and interoperability by linking the disparate LMR systems of MDPD - Airport District and the Transportation Security Administration. MDPD has primary jurisdiction for law enforcement at the airport. There are two or three incidents every week where MDPD either makes an arrest or the incident is a large-scale situation. TSA personnel are the first to report many of these incidents.

The proof-of-concept solution enables disparate radio systems to communicate with previously disconnected radio and voice infrastructures through data network versus conventional interfaces alone. Now, links can be established in seconds to ensure critical on-demand communication. As a result, the County and TSA can now speak directly with each other over their own LMR networks. In addition, they can conference via a simple web-based interface - further reducing time and effort in coordinating an effective emergency response.

Previously, as in most jurisdictions in the United States, these agencies would have had to rely on mutual aid channels or the non-secure public switched telephone network to communicate. These solutions would not provide the necessary levels of redundancy, security, or reliability appropriate for an emergency.

Program Narrative:

PROBLEM STATEMENT

All of the federal, state, and local law enforcement, as well as first responder agencies, have unique sets of jurisdictional and mission requirements. Most of the time, these requirements do not interfere or warrant any special kind of consideration. However, there are critical times when incompatible communications infrastructures can be a detriment to public safety. This was clearly defined as a problem area by the recent 911 Commission. Though identified as a critical component in achieving a higher state of homeland security, communications interoperability today is not easy to achieve. There are several reasons:

- Many different protocols
- Many configurations, e.g., Narrowband and Wideband; different software revisions, conventional and trunked
- Many different radio vendors with incompatible equipment
- Inconsistent command and control/operational processes and procedures vary from jurisdiction to jurisdiction

For example, at many of the airports in the United States, the TSA relies on local police or sheriffs for law enforcement responsibility and authority. In the Miami International Airport (MIA) this falls upon the Miami-Dade Police Department's Airport District. In the event of a crisis in the airport, the TSA could not use their Motorola P25 radio system to communicate with the MDPD's M/A-COM EDACS (Enhanced Digital Access Communications System). As a result, MDPD could not speak to TSA personnel via their land mobile radios. Instead, they relied on telephone ring down circuits between the various gates and the MDPD work desk at the airport substation, or the TSA agent had to request their dispatch center to call MDPD via the telephone. The interoperability issue also impacted how quickly other agencies could assist in response.

In most major metropolitan areas, the primary law enforcement agency handles the first response. TSA is now able to reach the Miami-Dade Police Airport District immediately for routine or emergency situations. Radio interoperability and efficient LMR traffic distribution is a critical requirement. Other than the limited capability of basic Mutual Aid channels, few satisfactory solutions have been found. Since the various departments' radio systems are of different manufacture, model, and frequency, a cost effective and non-proprietary solution to link these systems was needed.

SOLUTION APPROACH

This project was first implemented at Miami International Airport in September 2004, and resulted in the linking of the disparate LMR systems of MDPD and TSA airport staff using a solution called Intelligent Mobile Radio. With this approach, radio-to-radio interoperability was established between TSA and MDPD systems using an open-standard IP interface. In addition, communications were established between the public switched telephone network (PSTN) and these radio systems. The solution was designed to use standard mobile data and cellular telephony to transmit and receive voice communications between and among the interoperating land mobile radio systems. The objectives of the project were to significantly increase both the speed and the ease with which participating agencies could communicate with one another. Target metrics were established, including:

- Reduce voice five seconds delay to less than ~ second through the use of the Team Unisys Intelligent Mobile Radio VoIP approach
- Reduce Emergency Personnel response time by 25 percent by using the Team Unisys Intelligent Mobile Radio approach
- Reduce citizen response time complaints by 20 percent
- Significantly reduce the anxiety level of emergency response personnel
- Increase communications and cooperation between TSA and MDPD

SOLUTION BENEFITS

Unisys Intelligent Mobile Radio VoIP solution's key benefits are its compatibility, scalability, and affordability.

- **Compatibility:** The IP infrastructure deployed as part of the proof of concept is based on open standards currently available in the market. Additionally, because the new equipment can be easily connected to the existing radio infrastructure and an existing data network, this system was

implemented with very minimal impact on current radio operations. The deployment caused no down time for the participating agencies.

- Scalability: This solution is IP-based and therefore can shift to hundreds of channels and sites, allowing for routine, as well as large-scale usage. A side benefit of this approach is demonstrating the speed with which an interoperability solution can be implemented; the core infrastructure for the proof-concept was deployed in 10 days.
- Affordability: A key objective of this solution was to maximize the value of existing voice communications infrastructure already in place and leverage the investment that agencies have in their data systems. This solution allows users to continue to use and deploy the systems that they have already acquired, without the need for a "forklift" overhaul with expensive new technology.

PROJECT ORGANIZATION

The successful implementation of this project required the creation of a unique multi-jurisdictional governance structure involving federal, and county. Leadership included:

Miami-Dade County

Major Ruben Galindo - MDPD Airport District

Captain John Alongi - MDPD Airport District

Lieutenant George Perera - MDPD Communications Bureau

Mr. Jose R. Perez - Miami-Dade County Enterprise Technology Services Department

Transportation Security Administration

Mr. Rick Thomas - Federal Security Director

Mr. Dave Newberry - Aviation Operations Customer Relations Manager

In addition to the government partners, this project required the commitment of a private sector partner team led by Unisys Corporation and included Cisco, EMC, ARINC, and Sprint Communications. Thomas Frederick of Unisys served as overall private sector team coordinator.

SUMMARY

As is usually the case with technology projects, this solution presents opportunities for streamlining the "business processes" for handling emergencies, and demonstrates how interoperability can be used to improve the overall effectiveness of emergency response. This approach sets the stage for true integrated justice information and data sharing.