Memorandum

MIAMI-DADE COUNTY

Date: December 4, 2007

Agenda Item No. 3(O)(18)(A)

To: Honorable Chairman Bruno A. Barreiro
and Members, Board of County Commissioners

From: George M. Burgess
County Manager

Subject: Resolution Ratifying Application for Public Safety Interoperable Communications Program Grant Funds

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Recommendation
It is recommended that the Board ratify the attached resolution authorizing the County Manager's action in applying for, receiving, and expending grant funds in the amount of $3,735,000 million from the State of Florida Public Safety Interoperable Communications (PSIC) Program to support the Miami-Dade Police Department (MDPD). The grant covers a three year period from October 1, 2007 through September 30, 2010.

Scope
The grant will provide countywide services.

Fiscal Impact/Funding Source
This grant will provide $3.735 million in federal funds to implement the proposed project. The funding source is the National Telecommunications and Information Administration (NTIA) in consultation with the U.S. Department of Homeland Security passed through to the Florida Division of Emergency Management. The grant does not require a match.

Track Record/Monitor
The grant will be monitored by the Miami-Dade Police Department.

Background
Ratification of this application is necessary because the final reference guide for proposal requirements was released on September 2nd, and the proposal was due on October 2, 2007. This funding would provide resources for the additional equipment necessary for improved inter-agency communications, such as a new Internet Protocol (IP) platform for voice/data interoperability; five P25 700 MHz Radio transmit sites to increase capacity for radio users on the new IP voice data platform; increased coverage of State of Florida via State required 800 MHz mutual aid channels; back up radio transmission equipment for emergency deployment as first responders in critical situations.

MDPD has worked closely as the lead with other agencies including Miami-Dade Fire Rescue, Enterprise Technology Services Department and the Department of Emergency Management & Homeland Security; municipal police departments, Miccosukee Tribal Police, municipal fire departments along with state and federal agencies, and extending across our region, Region VII of the Florida Domestic Security Task Force, to Region VI, Collier County. Funding will support the interoperable model described in the proposal, linking first responder agencies in Miami-Dade County and the region, providing short and long term solutions for interoperability. The proposal provides an all-inclusive approach in conjunction with the National Incident Management System (NIMS) integration model for interoperability and the SAFECOM Interoperability Continuum Model.

First responders face numerous difficulties trying to communicate with other agencies and with each other when responding to high-profile incidents such as hurricanes, man-made terrorist events, plan crashes, and day to day "common" events. To protect life and property, public safety personnel must be able to communicate with each other across agency and jurisdiction boundaries and the lack of interoperable communications makes it difficult to mount well-coordinate responses. The goal of this coordinated effort is to ensure that all acquisitions for interoperable voice/data communications are carefully planned and integrated at a regional/state level to best benefit the first responder community.

Assistant County Manager

MEMORANDUM
(Revised)

TO: Honorable Chairman Bruno A. Barreiro and Members, Board of County Commissioners

DATE: December 4, 2007

FROM: R. A. Cuevas, Jr. County Attorney

SUBJECT: Agenda Item No. 3(O)(18)(A)

Please note any items checked.

_____ **"4-Day Rule" ("3-Day Rule" for committees) applicable if raised**

_____ **6 weeks required between first reading and public hearing**

_____ **4 weeks notification to municipal officials required prior to public hearing**

_____ **Decreases revenues or increases expenditures without balancing budget**

_____ **Budget required**

_____ **Statement of fiscal impact required**

_____ **Bid waiver requiring County Manager's written recommendation**

_____ **Ordinance creating a new board requires detailed County Manager's report for public hearing**

_____ **Housekeeping item (no policy decision required)**

✓ **No committee review**

Approved _____ Mayor

Veto _____

Override _____

Agenda Item No. 3(O)(18)(A)

12-04-07

RESOLUTION NO. _____

RESOLUTION RATIFYING THE COUNTY MAYOR'S ACTION IN APPLYING FOR FEDERAL FUNDS FROM THE FLORIDA PUBLIC SAFETY INTEROPERABLE COMMUNICATIONS (PSIC) PROGRAM FROM THE FLORIDA DIVISION OF EMERGENCY MANAGEMENT AND US DEPARTMENT OF HOMELAND SECURITY, TO SUPPORT THE MIAMI-DADE POLICE DEPARTMENT; AND FURTHER AUTHORIZING THE COUNTY MAYOR TO RECEIVE AND EXPEND FUNDS AND EXECUTE SUCH CONTRACTS AND AMENDMENTS AS REQUIRED IF AWARDED

WHEREAS, this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF DADE COUNTY, FLORIDA, that this Board ratifies the County Mayor's action to apply for, receive, and expend $3,735,000 from the Florida Division of Emergency Management, in substantially the grant application attached hereto and made a part hereof; and authorizes the County Mayor or his designee to receive and expend grant funds, execute such contracts and agreements as required by grant guidelines or to further the purposes described in the funding request; following approval by the County Attorney's Office; to expend any and all monies received for the purposes described in the funding request; to apply for, receive and expend future additional funds should they become available through this grant program; to file and execute any necessary amendments to the application for and on behalf of Miami-Dade County, Florida; and to exercise amendments, modifications, renewals, cancellation and termination clauses of any contracts and agreements on behalf of Miami-Dade County, Florida.

The foregoing resolution was offered by Commissioner , who moved its adoption. The motion was seconded by Commissioner and upon being put to a vote, the vote was as follows:

Bruno A. Barreiro, Chairman
Barbara J. Jordan, Vice-Chairwoman

Jose "Pepe" Diaz	Audrey M. Edmonson
Carlos A. Gimenez	Sally A. Heyman
Joe A. Martinez	Dennis C. Moss
Dorrin D. Rolle	Natacha Seijas
Katy Sorenson	Rebeca Sosa
Sen. Javier D. Souto	

The Chairperson thereupon declared the resolution duly passed and adopted this 4th day of December, 2007. This resolution shall become effective ten (10) days after the date of its adoption unless vetoed by the Mayor, and if vetoed, shall become effective only upon an override by this Board.

MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF COUNTY
COMMISSIONERS

HARVEY RUVIN, CLERK

Approved by County Attorney as
to form and legal sufficiency. KBD

By:_____
Deputy Clerk

Kenneth B. Drucker

PROJECT TITLE

MIAMI-DADE COUNTY, MICCOSUKEE TRIBE OF INDIANS, MULTI-REGIONAL (VI & VII) MUNICIPAL, MILITARY, FEDERAL, AND STATE OF FLORIDA INTEROPERABILITY PROGRAM

EXECUTIVE SUMMARY

Miami-Dade County submits this multi-agency/discipline proposal for interoperable voice/data communication for municipal police departments, Miami-Dade County Police, Miccosukee Tribal Police, and fire departments along with state and federal agencies and extending across our region, Region VII to Region VI, Collier County. The funding requested will support the interoperable model described in the proposal, linking first responder agencies in Miami-Dade County and the region, providing short and long term solutions for interoperability. We have support from executive leadership for the primary agencies. The County has project management and technical support staff capable of successfully implementing, managing and completing the project on time. The County has a consistent history of implementing large, complex IT projects and a proven track record of coordinating with local and regional stakeholders to ensure the best possible solutions. The proposal provides an all-inclusive approach in conjunction with the National Incident Management System (NIMS) integration model for interoperability and the SAFECOM Interoperability Continuum Model.

We are aggressively pursuing funding for five investments in our interoperability program: Network Interoperability IP SWITCH, Increased Connectivity and Coverage to the Miccosukee Tribal Land, Build-out of Mutual Aid channels, Implementation of P25 700 MHz data/voice, and the Build-out of the Mobile Communications Tower with both P25 700 and 800 MHz capabilities.

PROJECT DESCRIPTION

BACKGROUND:

Given its geographical location, Miami-Dade County remains the North American gateway to Latin America and the Caribbean. The County is represented by more than 2.5 million residents and continues to stand as the meeting ground for numerous multinational businesses and banks. Miami-Dade County has local targets that are concerns based on assessed vulnerability. While Miami-Dade County enjoys more than 20 miles of sandy white beaches and spans in excess of 2,000 square miles of which 645 miles of our boundary is comprised of tidal coastline; one of the largest open borders (by sea) in the nation.

As a result of Miami-Dade County's size and unique qualities, it remains a high-risk threat area for terrorism. In addition to producing mass casualties, an attack on the County can damage critical infrastructure, disrupt essential services, and cause severe nationwide economic loss. Miami-Dade stands at the intersection of the Americas and the world, and serves as a regional headquarters and operations base for more than 1,250 multinational businesses including Apple, Oracle Corp., IBM, Clorox, Burger King, and Porsche. Fifty-four percent of all U.S. trade with Central America flows through Miami. With the third highest international passenger traffic in the United States, Miami International Airport (MIA) is the "Hub of the Americas," serving as a vital gateway between the United States and Latin America. MIA ranks first among U.S. airports for international freight and third for international cargo. More than 100 airlines flew more than 30 million passengers last year. South Florida, specifically Miami-Dade County, continues to have a major concentration of several high profile infrastructure targets such as Turkey Point Nuclear Power Plant, Dolphin Stadium, American Airlines Arena, the National Hurricane Center, Miami-Dade County Water and Sewer Treatment Plant, Port of Miami, and Miami International Airport.

Miami-Dade County's unique quality places it in a state of high-risk to natural disasters (i.e. hurricanes) and man-made threats such as terrorism. Miami-Dade County along with neighboring public safety agencies require effective command, control, coordination, communication, and sharing of information with numerous criminal justice and public safety agencies, as well as public utilities, transportation agencies, and private industry.

NEED FOR FUNDING ASSISTANCE

In June 2007, the Florida legislature set forth a mandate to lower property taxes statewide. The result is approximately $226 million (9%) reduction in the countywide budget for Miami-Dade County. On June 20, the County Manager issued a memorandum to the County Mayor advising of the impending budgetary shortfall. He advised that there will be an immediate hiring freeze for non-essential personnel and that all services will be under review; with some necessary service reductions. Additionally, funding has been reduced on many projects including interoperability.

The mission of all first responder agencies throughout the South Florida region is to ensure the safety and quality of life for all citizens through coordination, communication, and sharing of vital information. However, the current financial stability of Miami-Dade County poses a major obstacle. The need for voice and data interoperability is critical. The strategy for the implementation and integration has been identified and is supported by the local, regional, tribal, and federal partners as illustrated in their letters of support attached in this proposal. All involved recognize that this is the only effective way to address security and disaster threats in the 21st century. The county is not able to develop or implement this project for the region without funding assistance.

INVESTMENT I

Interoperability Problem:

Miami-Dade County has been a leader in providing interoperable communications to law enforcement, fire and emergency services personnel, (as already described in our scorecard from the Department of Homeland Security) coordinating and working closely with other local, state, tribal, and federal agencies in order to respond to catastrophic, civil, and eventful situations. Presently, there are 73 local, state, and tribal agencies, 12 federal agencies, nine private companies and three branches of the military that interoperate with the County's radio system with many more agencies wanting to join our interoperable plan (See Attachment A – Radio System Users). In addition, all Mutual Aid state frequencies are supported on the system. Currently there are two primary disparate radio systems in Miami-Dade County. The County system is M/A-Com 800 MHz and the City of Miami is Motorola 800 MHz, while the County Fire Department operates on a Motorola 450 MHz system. The state of Florida's Statewide Law Enforcement Radio System (SLERS) is M/A-Com 800 MHz. Additionally, there

are a few law enforcement agencies operating on VHF and UHF frequencies. As illustrated by these disparate radio systems operating within the confines of Miami-Dade County, a mechanism that can provide seamless interoperability is greatly needed (See Attachment B - Radio System Map). Currently, there is a limited degree of interoperability via a system patch between the Motorola system and the M/A-Com system; however this is very limited in scope, can only be used for a single resource, and must be initiated by a dispatcher at each communications center. This is a difficult procedure at best and does not lend itself to a major event with a multi-agency scalable response.

Proposed Solution:

Interoperable IP (Internet Protocol) Network "Switch to Switch" System

Miami-Dade County is proposing a Radio Network Solution for critical and public safety communications. It represents a new approach to critical communications, unifying all disparate communications systems and equipment onto a single direct "switch to switch" network solution. This allows us to select the system capabilities that best meet our requirements of functionality and geography depending on the scope of the event or emergency. Through the power of Internet Protocol (IP) architecture, the network enables access to a combination of voice and data functionality, interoperability and network security with the flexibility to cost-effectively build and easily upgrade critical communications systems now and as we more forward in the future. Additionally, the proposed solution will be fully redundant to ensure a mission critical operating environment.

The "switch to switch" radio network system will provide the necessary connectivity with The State of Florida and its agencies. Besides being connected to the Miami-Dade County switch, this network provides the opportunity to directly connect to the State of Florida Law Enforcement Radio System (SLERS). As users of the State of Florida Interoperable Network (FIN) these new connections can be accessed across the state by FIN users, providing access to other agencies outside the surrounding area. The solution augments the benefits already provided by the FIN network.

This radio network offers numerous benefits over traditional radio-based solutions, including:

- Fully integrated voice and data services and interoperability with legacy systems

- One unified communications network, easily and quickly expandable across a state, region or nationwide
- Option to deploy different grades of service throughout different areas, depending on specific requirements, without having to invest in unnecessary functionality
- Ability to selectively add capacity, coverage and additional features as specific needs arise
- Support of multiple air interfaces, allowing each system to operate independently while maintaining network compatibility
- Support of simultaneous multiple frequency bands to maximize/optimize spectrum efficiency and usage
- Ready for future developments to enhance communications systems without obsolescence
- Inter Sub-System Interface (ISSI), which allows the radio network to be interfaced into other standards-based networks, regardless of frequency band. This is especially vital for interoperability between Federal, State, and local agencies.

The radio network uses Voice-over-IP (VoIP) and IP-based digital packet switched technology to convert audio and data signals into digital packets. Using the same technologies that support the Internet, the packets are then securely transferred, based on Digital Encryption Standards (DES) and the Advanced Encryption Standard (AES), to designated devices on the network.

Emerging air interface standards as well as IP-based applications from other manufacturers are supported by the radio network, allowing for unprecedented connectivity and access to voice, data services and interoperability. The radio network has a Unified Network Architecture (UNA) which will allow future systems and applications to be supported on the network, providing more flexibility and choice while ensuring maximization on the investment.

This platform will support radio frequencies ranging from 800 MHz, 700 MHz, 450 MHz (UHF), 150 MHz (VHF), 4.9 GHz, and connect system-to-system multi vendor platforms. Furthermore, the system will provide the capability to port across systems radio features such as Emergencies, Priority Option, and LIDs which is presently impossible with existing technology.

The IP Network Switch has been designated by the US Department of Homeland Security a "Qualified Anti-Terrorism Technology" under the Support Anti-terrorism by Fostering Effective Technologies Act of 2002. As part of its solution an innovative network level interoperability technology solution to achieve the objectives of the project.

The system will utilize standard network protocols and an open architecture, operating in a client/server environment, to address the voice and data communications needs of public safety radio users needing to connect with each other during special events, tactical missions, as well as natural or man-made disasters.

Operational Concept

At the core, the network will link together multiple radio types in multiple frequency bands by converting the radio audio packet data that can then easily be transported over a wide area network that uses Internet Protocol. A software switch that runs on an industry standard work station will control the routing of calls among the different communicating agencies. Each audio node in the packet-switched network will have an IP address known by the switch, making it easy to segregate or combine callers into interoperability talk groups and identify the caller as well as the system the call was made from. This network will have a minimum capacity of 50,000 connection capacity in order to handle multi-agency traffic across the region in both conventional and trunked versions.

The network can also be seen as extending the enterprise WAN to remote locations using the licensed, contention-free 4.9 GHz public safety band. Common applications include remote surveillance video (streaming), mobile broadband access to vehicles via "Hot Spots," backhaul of IP-based LMR traffic, connection of remote precincts to the enterprise and/or radio network, network connectivity to mobile command vehicles, and other high-speed data applications.

REQUESTED INVESTMENT I FUNDING: $1,100,000

INVESTMENT II

Interoperability Problem:

The Miccosukee Tribal Police has authorized Miami-Dade County to submit, on their behalf, their gap in service needs. The Miccosukee Tribal Police is serviced by the Miami-Dade County radio system and is a long standing partner with the Miami-Dade Police Department. Due to the fact that the Tribal Lands extend into more than one Florida county, a radio coverage issue exists. This not only poses a day-to-day officer safety issue, but limits the effectiveness and efficiency of a multi-agency response in the Miccosukee Tribal lands. Additionally, the Tribal Police are in desperate need of new terminal units to take advantage of the new emerging technologies to further enhance their delivery of service and effectively participate in multi-agency responses to both natural and manmade disasters.

Proposed Solution

In order to enhance the radio coverage and communication for the Miccosukee Tribal Police the proposal is for three part solutions. The first part creates a partnership with Collier County inter-connecting the MDC and the Collier County radio infrastructures. This will be accomplished by utilizing the IP Network Switch as define in Investment I.

The second part of the solution is to add a new P25 700/800 MHz radio multi-site that would provide additional coverage and capacity for both data and voice. The P25 system will be linked to the existing MDC 800 MHz system utilizing the same IP Network Switch referred to in Investment I, resulting in a seamless transition to the existing radio infrastructure. In addition, by implementing a P25 system defined by Project 25 TSB-102A Systems and Standards Definitions and adds additional enhancements it provides the capability to communicate across vendor equipment. With the P25 design, interoperability is achieved at all three communications levels:

- At the network level through the radio network switch and Digital Voice systems for legacy systems
- At the radio level with conventional analog mode and/or in the digital mode using the P25 CAI (Common Air Interface)
- At the dispatch level through our existing consoles for all the users on the P25 network

The P25 Interoperability is designed to be:

- Highly reliable and effective
- Transparent to the users
- Simple to use

Interoperability, the key to successful interagency operations, needs to be accessible on an instantaneous and reliable basis. Many incidents simply cannot wait for equipment to arrive, be programmed and tested. With P25 systems and components, instantaneous interoperability with other users is implemented in the following manner:

- Fielded Project 25 radios using the conventional or trunked P25 CAI

- Installed legacy analog and digital (P25) conventional or trunked systems using the radio network infrastructure. Using the radio network, instantaneous IP-based network interoperability can be established between agencies operating with disparate radio systems, technologies, and radio frequencies. The use of the radio network digital voice gateways allows talk-groups on any system to become accessible and interoperable with any or all of the users on the P25 network.

The third part of the solution is acquiring mobile and desktop radios for the Miccosukee Tribal Police that will work on both the existing 800 MHz radio systems and the new 700 MHz environment. The mobile and desk top radios trunk seamlessly between the 800 MHz frequency band and the newly available 700 MHz frequency band. The mobile employs the latest digital radio architecture with state-of-the-art digital signal processing techniques that can be easily programmed over the air for increased efficiency of operation. Added security and safety can be provided through an integrated Global Positioning System (GPS) and data encryption.

REQUESTED INVESTMENT II FUNDING: $585,000

INVESTMENT III

Interoperability Problems

On September 13, 2007, in a very recent tragic incident, four Police Officers from the Miami-Dade Police Department were shot by a subject with a military grade assault rifle and one lost his life after stopping the subject's suspicious vehicle. The multi-agency/multi-county response to this tragedy was massive in scale. The subsequent man-hunt, one of the largest in Florida's history, spanned several counties. This event utilized the total capacity of the Mutual Aid talk groups within the MDC radio system and demonstrated the need for further build-out of our mutual aid capabilities.

Proposed Solutions

In order to enhance the Mutual Aid coverage the solution proposed is to extend the coverage of one of the Mutual Aid talk groups from its single site capacity to a full simulcast solution with 9 sites providing additional coverage. In addition, we propose to upgrade and modernize the equipment of the current Mutual Aid channel that is simulcast within the coverage area.

Simulcast conventional mutual aid system to improve the current Northside channel, comprising:

- 7 sites, 1 channel 800 MHz 100 watt repeaters
- 2 sites 1 channel 800 MHz receivers
- 9 sites voting
- Master oscillators for all TX sites
- Centralized delay/equalization equipment
- Additional channel to update existing equipment

REQUESTED INVESTMENT III FUNDING: $600,000

INVESTMENT IV

Interoperability Problem:

The respective law enforcement agencies within Miami-Dade County support a fleet of Mobile Data Computers to deliver call for service data to police and fire first responders. The practice of voiceless dispatch for non-emergency calls for service greatly reduces the "push to talk" load on the radio system. The current data network is provided and supported by a private wireless

carrier. During past hurricane seasons, this private carrier was unable to sustain operations during the prolonged power outages. This loss of functionality to deliver non-emergency call data wirelessly, coupled with an increased deployment of personnel to the field caused the radio system to reach maximum capacity resulting in denied access to the system by user. Voice and data capacities, built to mission critical standards, are needed to support the emergency responder network within MDC. Additionally, there are no available 800 MHz frequencies within South Florida. MDC is in need of additional frequencies to effectively respond to the growing emergency responder demands and to be prepared for any potential mass casualty event or natural disaster. MDC has applied for licensing for frequencies within the 700 MHZ block and are awaiting availability and approval from the FCC.

Proposed Solutions

To enhance the voice and data capacities the solution is to create 3 Multi-Site 5-Channel P25 700 MHz Radio infrastructure system. Since there is insufficient 800 MHz spectrum in this geographical area, this proposal is to utilize the newly available 700 MHz band to add capacity. In addition, by implementing a P25 system defined by Project 25 TSB-102A Systems and Standards Definitions and adds additional enhancements, additional capability to communicate across vendor equipment will be provided. With the P25 design, interoperability is achieved at all three communications levels:

- At the network level through the radio network switch and Digital Voice systems for legacy systems

- At the radio level with conventional analog mode and/or in the digital mode using the P25 CAI (Common Air Interface)

- At the dispatch level through our existing consoles for all the users on the P25 network

Interoperability, the key to successful interagency operations, needs to be accessible on an instantaneous and reliable basis. Many incidents simply cannot wait for equipment to arrive, be programmed and tested. With P25 systems and components, instantaneous interoperability with other users will be implemented in the following manner:

• Fielded Project 25 radios using the conventional or trunked P25 CAI

• Legacy analog and digital (P25) conventional or trunked systems using the radio network infrastructure will be supported. By utilizing this radio network, instantaneous IP-based network interoperability can be established between agencies operating with disparate radio systems, technologies, and radio frequencies. The use of the radio network digital voice gateways will allow talk-groups on any system to become accessible and interoperable with any or all of the users on the P25 network.

REQUESTED INVESTMENT IV FUNDING: $800,000

INVESTMENT V

Interoperability Problems

Miami-Dade County has purchased two mobile radio towers to be utilized to support special operations or temporary failures. One of the towers has been completely built-out to support the current 800 MHz radio infrastructure. Due to the earlier discussed budgetary crisis, funding was curtailed to build-out the second mobile tower. Based upon the size of Miami-Dade County, the strategic proximity to support adjoining counties and the number of federal, state and municipal first responders supported by the MDC radio infrastructure, a second fully functional mobile tower is essential.

Proposed Solution:

MDC has already purchased the mobile radio tower. In order to utilize this resource to support emergency first responders in a natural or manmade disaster or regional emergency the radio infrastructure must be developed. The investment in this portion of the interoperability program will be used to purchase and implement one 800 MHz 10 Channel Site and one 700 P25 5 Channel Site to be placed in the mobile vehicle to move as required to support the County, Municipal, Tribal, State, Federal, and Regional areas. This multi-platform resource will further enhance south Florida's interoperability capacity and fill an identified need.

REQUESTED INVESTMENT V FUNDING: $650,000

SUMMARY

In concert with the enhancement and development of the radio infrastructure with emerging technologies and replacement of end of life equipment, the governance of the MDC Interoperability Program will be ongoing. The advent of linking disparate radio systems into a unified communications environment will require standard nomenclature and universally accepted procedures to effectively manage any response. NIMS and ICS models are critical for an effective multi-agency response. These planning functions will be an extremely important part of the development of this program and will be supported by all participating agencies.

PSIC GAP ANALYSIS

The Miami-Dade County Interoperability Program has been developed to address the needs identified in the Public Safety Interoperable Communications GAP Analysis. As identified with the technology arena. Following is a listing of the gaps identified that are directly addressed by our request for funding proposal:

1. Promote a shift in public safety philosophy from the single agency owned and operated stand-alone type systems, further down the SAFECOM Continuum with an increase in the participation in shared P25 compliant voice systems, video or data communications, utilizing all public safety frequency resources.

Investment I of the proposal addresses this very concern. A unified IP Network Switch combines all available resources in a shared environment that support P25 standards.

2. The majority of Florida's Interoperable communications solutions fall under the Gateway category on the SAFECOM Continuum. There is a need to enhance survivability of Florida's fixed networks and transportable radio systems.

Investments II, III, IV, and V address this issue. By replacing end of life equipment, increasing mutual aid capacity, providing for additional frequency availability through 700 MHz and completing a full build-out of the mobile radio tower, these concerns are addressed.

3. Many jurisdictions have radio systems and equipment that has either exceeded their expected physical or technological life spans. Due to various barriers, including fiscal; these jurisdictions are limited in their ability to move further along the SAFECOM Continuum toward implantation of the P25 suite of standards.

Investments I, II, IV, address this concern. The IP Network Switch is an item that must be secured via grant funding due to the current fiscal condition of MDC. Additionally, the Miccosukee Tribal Police will receive an additional transmit site and terminal units capable of operating in the P25 700/800 MHz. bands. MDC will also move further along the continuum by implementing P25 700 MHz channels.

4. Enhance existing data, video and voice emergency medical communications between Florida's trauma centers, hospitals, EMS telemedicine, and transport providers (air and ground).

Investment I and IV provides a mechanism to address this concern. The IP Network Switch has the capacity to link 700 MHz, 800 MHz, 450 MHz, UHF, VHF bands along with 4,9 GHz into a unified communications platform for voice and data. This platform would be available for the hospital and trauma facilities to utilize if they desired. As MDC implements the infrastructure for the 700 MHz band, in anticipation of available spectrum, MDC will be positioned to utilize this emerging spectrum for data and voice transmissions. The same spectrum utilization would also be available for the hospital and trauma facilities.

5. First Responder specialty teams need the ability to communicate between state, local and federal teams, incident command, etc. to ensure better coordination in the prevention, protection, response and recovery from catastrophic incidents.

Investments I, II, III, IV, and V address this issue completely. The unified approach to our proposal layers existing and emerging technologies to accomplish this goal. The IP Network Switch allows for existing disparate systems to inter-connect providing seamless communication from emergency responders on a federal, stare, tribal and local level. The replacement of aging system components and transmit site increase coverage and supports recovery missions. The build out of P25 700 MHz creates greater capacity

to address large multi-agency responses, while mobile radio systems can supplement increased and specialized missions.

6. Develop consistent statewide implementation of the NPSTC nomenclature for radio programming and for verbal reference when assigning or referring to Mutual Aid channel use.

As stated in the summary portion of the project description, the implementation of standardized nomenclature and clear speech is essential to multi-agency responses. As MDC deploys the equipment to support the new communications platform, we will ensure that standardized naming is accomplished. The development of these standards will be an ongoing mandate as we replaced end of life equipment.

7. Long term sustainment/replacement plan of interoperable of Resources, to include technology refresh to maintain compatibility with local systems. (System Life Cycle).

Investments I, II, III, IV, and V address this issue completely. The unified approach to our proposal layers existing and emerging technologies to accomplish this goal. These investments are refreshing out technology and the IP Network Switch allows for existing disparate systems to inter-connect providing seamless communication from emergency responders on a federal, stare, tribal and local level. The replacement of aging system components and an additional transmit site increase coverage and supports recovery missions. The build out of P25 700 MHz creates greater capacity to address large multi-agency responses, while mobile radio systems can supplement increased and specialized missions.

MDC is committed to provide the needed funding to sustain our mission critical the radio infrastructure. MDC employees an in-house profession staff with 24/7 responsibilities to support our critical radio infrastructure. MDC will support through vendor maintenance agreements, employee training and re-certification that the requested improvements with our proposal are maintained at all times on a going forward basis.

IMPLEMENTATION STEPS

Project management for the proposed interoperable model will involve specific implementation steps for each Investment. We have provided a project timeline. This timeline documents the project (all five investments) over the grant performance period (See Attachment C – Funding Timeline).

We shall document and share the successes of how the purchased equipment is used, when it is used and how the first responders benefit from the system purchase or enhancement. This information will be disseminated through the State of Florida Regional Domestic Security Task Force (RDSTF), Communications Sub-Committee, the International Association of Chief's of Police, and in accordance with PSIC grant reporting rules.

Each Investment will have a project team and a project manager. In some cases, members of one project team will be the same team in other projects. Miami-Dade County has a highly trained staff of factory certified technicians and telecommunications engineers capable of performing the complex work associated with these projects. Contractor (vendor) personnel and resources will also be utilized to complete these projects in a timely manner. Miami-Dade procurement polices will ensure that only certified personnel are utilized to perform complex tasks.

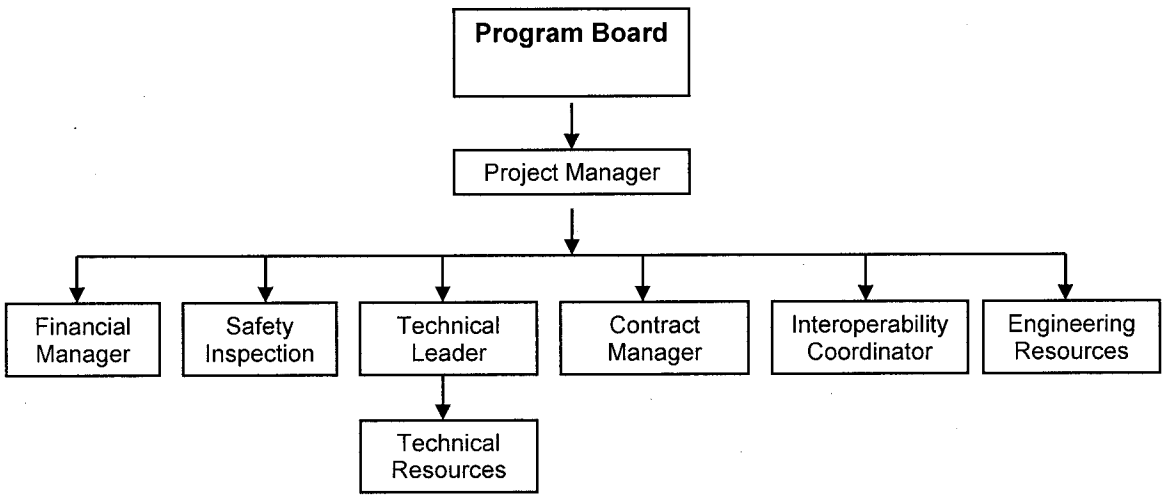
A Program Board will govern the direction of the projects. This Board is made up of senior management personnel, technical experts, and finance manager who will monitor the project to ensure to ensure compliance with local, state, and federal regulations. The Program Board is comprised of senior Public Safety professionals from law enforcement, fire/rescue, corrections, and IT professionals as well. The Program Board will be responsible for the following:

- Establish program requirements
- Interface with upper management
- Establish program policies
- Authorize program schedule
- Authorize program budget
- Authorize program scope
- Approves program technical requirements
- Review and approve program plans

The Project Manager may be responsible for one or more of the following at the discretion of the Program Board:

- Develop project plan
- Direct project resources
- Manage project schedule
- Manage project budget
- Estimate project resources
- Communicate project status
- Track project status
- Define, assess and mitigate project risks
- Ensure project meets technical requirements

In some cases the same Project Manager and some of the project team members may be the same. This will be necessary when projects are of the same nature or when activities are the same or overlap at a work site (See Attachment E – Table of Organization for detail).



The following depicts the timelines and milestones associated with the investments

PSIC FUNDING TIMELINE											
IMPLEMENTATION STEPS STEP DESCRIPTION	STEP 1 Acquisition / Design / Installation		STEP 2 State Coordination & MOU Execution		STEP 3 System Testing & Acceptance		STEP 4 System Training		STEP 5 System Exercise		Live Deployment
INVESTMENTS	Start	End	Start	End	Start	End	Start	End	Start	End	Start
I. IP Interoperable Platform & LMR	11/07	03/08	N/A	N/A	03/08	06/08	05/08	06/08	09/08	10/08	12/08
II. Improve Miccosukee Radio Coverage Single P25 700 MHz Site & LMR	03/08	10/08	10/07	12/07	01/09	04/09	02/09	05/09	06/09	08/09	10/09
III. Enhance MA Channel Coverage	12/07	04/08	11/07	01/08	05/08	07/08	08/08	10/08	11/08	12/08	01/09
IV. Acquire P25 700 MHz Platform 3 Multi-site	03/08	11/08	N/A	N/A	01/09	04/09	02/09	05/09	06/09	08/09	10/09
V. Aquire 10 Ch. 800 MHz / 5 Ch. P25 700 MHz for Transportable Site	04/08	10/08	N/A	N/A	10/08	12/08	12/08	01/09	02/09	03/09	04/09

Miami-Dade County is responsible for the management and support of a complex radio communications network. Our responsibilities include management, design, operations, and maintenance & repair of the following configuration:

- Miami-Dade County operates five (5) internal radio systems that are affected by 800 MHz rebanding. All systems are manufactured by M/A-COM. Four systems are networked together and carry voice traffic. The remaining system is dedicated to wireless data service.

- Two of the County's systems (System A and System B) are each comprised of twenty (20) NPSPAC channels operating in EDACS trunked simulcast configurations at seven (7) sites. The systems are overlaid on top of each other as capacity cells in order to achieve the ultimate system capacity required accommodating more than 27,000 users. Even so, these systems are heavily loaded and nearing the limit of available logical IDs (LIDs). The seven (7) simulcast sites together with two (2) auxiliary receiver sites provide coverage to the population areas of the County.

- System C is a single-site, 5-channel trunked EDACS multi-site system. Located on the Miccosukee Tribal Reservation, System C operates on NPSPAC channels, primarily as a coverage cell in western Dade County for County users who normally use either System A or System B. Additionally, System C provides localized coverage for the Miccosukee Tribal Police Department who depends on it for primary communications.

- System D is also a single-site, 5-channel trunked EDACS multi-site system. It also interoperates on NPSPAC channels, primarily as a capacity cell within a portion of the

area served by the System A and System B simulcast systems. System D operates on non-NPSPAC channels.

- Systems A through D comprise an integrated trunked voice communications network. These systems are networked together such that calls may be routed across systems to achieve wide-area coverage and capacity. Networking is accomplished through the use of two network switches, which are EDACS Integrated Multi-site Controllers (IMC's). The configuration is such that Systems A and D are attached as multi-site systems to IMC A, while Systems B and C are associated with IMC B. IMC's A and B are then networked to each other through Conventional Interfaces thereby selectively passing traffic among all four systems.

- The fifth system is 3-site, 3-channel data system serving Miami-Dade Transit. Channels are distributed among sites to achieve coverage and capacity for the County's various transit routes. Base stations are installed in a redundant configuration to assure high availability for this critical public safety application. The Transit system serves 1,500 buses and 30 people movers.

PROJECT CHALLENGES

Project Challenges:

The project challenge is the overall coordination of 97 agencies to develop the governance and standardized procedures within the established grant timeline.

Mitigation Strategy:

MDC has developed a mitigation strategy to address this project challenge. MDC has a well established and published County Interoperability Plan that is supported by the leaders of the emergency responders within Miami-Dade County. MDC employees a full time professional technical staff that is highly trained and experienced with successfully implementing large complex technology projects. MDC believes that every project has its challenges but we have the personnel, technical expertise and commitment to accomplish the goal.

The strategy planned to address this challenge includes:

- First, MDC will continue working through our local interoperability groups, within law enforcement community, Public Safety Answering Points, Fire and EMS. By utilizing the network of established groups, input is received from every discipline to be included in the overall governance plan. This information can then be refined through the Region Communications workgroups providing for consistency throughout the region and the entire state.

- Second, after procedures are established and agreed upon, the educational element must commence. Polices and procedures must be relayed to all potential participants within the interoperable plan.

- Third, practice exercises must be conducted to reaffirm the governance and procedures on a scheduled basis.

PROJECT RESULTS

Success indicators for the project (all five Investments) and the enhancement of Florida's capabilities at the end of the grant performance period are provided below:

INVESTMENT I

Miami-Dade County expects to enhance our interoperable capacity far beyond the current console patch, agency to agency connection that exists today. By utilizing the Interoperable IP Network Switch, multi-agency communications on a scalable level will be obtained. Additionally, the ability for first responders to initiate interoperable communication across disparate radio systems without the assistance or intervention of dispatch personnel will become a reality. Miami-Dade County further believes that the Interoperable IP Network Switch will enhance connectivity and functionality to the end users providing for and effective and efficient use of available spectrum.

A similar technology was utilized during the hosting of Super Bowl XLI as a pilot project and received great reviews from our federal, state and local partners. This proven technology was the cornerstone of the interoperable communications plan for the entire security event. MDC

was fortunate to coordinate a live demonstration of this technology for the time period surrounding the event (See Attachment D – Super Bowl Chart).

The IP Network switch will be an available resource to all agencies operating within and adjacent to Miami-Dade County (See Attachment A – Radio System Users).

INVESTMENT II

Miami-Dade County in partnership with and in support of the Miccosukee Tribal Police expects to greatly enhance connectivity, coverage and interoperable communications within the Miccosukee Tribal Lands. Miami-Dade will implement an additional transmit site and all radio support equipment, within Tribal Lands. Additionally, terminal units will be added, to take advantage of the emerging technologies in voice and data communications within the 700 MHz band which shall improve the state of interoperability within the Tribal Police Department. Furthermore, in partnership with Region VI, the Miami-Dade radio system will be connected to the Collier County radio infrastructure ensuring increased coverage and interoperability for the Tribal Police Department, due to the Tribal jurisdiction crossing county boundaries.

Again all subscribers to the Miami-Dade and Collier County radios systems and any emergency responders assisting the Miccosukee Tribal community will benefit from this interoperable partnership (See Attachment A).

INVESTMENT III

Miami-Dade County expects to improve coverage and increase capacity of the Mutual Aid talk groups. The expected increase in capacity will provide the necessary radio environment to support a large response by emergency responders from outside Miami-Dade County similar to the tragic events surrounding the recent shooting of the four Miami-Dade Police officers.

This enhancement will benefit all emergency responders working within Region VII on a daily basis or on a temporary assignment in support of a unified mission.

INVESTMENT IV

Miami-Dade County expects to utilize the emerging P25 700 MHz band to support additional voice and data applications. In conjunction with the IP Network Switch, the increased availability of the 700 MHz band will not only provide additional talk groups to support daily first

responder missions but also an operational platform for major coordinated responses from the federal, state, tribal and local responders. Additionally, the data transmission capabilities will be utilized to support our mobile data terminals, enhancing our service delivery and data sharing ability.

INVESTMENT V

Miami-Dade County expects to fully develop the mobile tower vehicle with both P25 700 MHz and 800 MHz communications platforms. The mobile tower will function as a regional and inter-regional resource to support of emergency responder partners. The multi-use of this communication platform translates into an economical and efficient use of grant funding to develop and position mobile resource in a centralized geographical region. Miami-Dade County expects to share this resource with Region VI and any other emergency responder entity on an as needed basis through the establishment of mutual aid user agreements.

SUSTAINABILITY

The long-term approach to sustaining/maintaining the capabilities developed through this regional inter-agency interoperable model, will involve:

- Annual review and analysis,
- Regional collaboration for quarterly exercises,
- Annual full-scale deployment exercises, and
- After-action reports on all exercises for performance improvement.

This approach will ensure that this model remains robust, technologically current, and fully addresses advancement on the SAFECOM Interoperability Continuum. MDC is committed to sustaining the Interoperability Program as part of the emergency contingency of the county. On a yearly basis, general fund revenues are budgeted for communications infrastructure support. This support includes personnel and personnel training, equipment warranty agreements, and life cycle replacement schedules. Additionally, the investments within this proposal are long term solution to the communications needs of the south Florida emergency responder community. The proposed Interoperability Program is intended to be utilized on a daily basis to deliver service to the community. Additionally, the overall Interoperable plan is the cornerstone of our readiness plan in the event of a natural or manmade disaster. The governance, standardized operating procedures, and program re-evaluation will be an ongoing practice with the MDC operating plan.

List of Attachments

Attachment A – Radio System Users

Attachment B – Radio System Map

Attachment C – Funding Timeline

Attachment D – Super Bowl Chart

Attachment E – Table of Organization

Attachment A

MIAMI-DADE COUNTY **MDC Radio System Users**

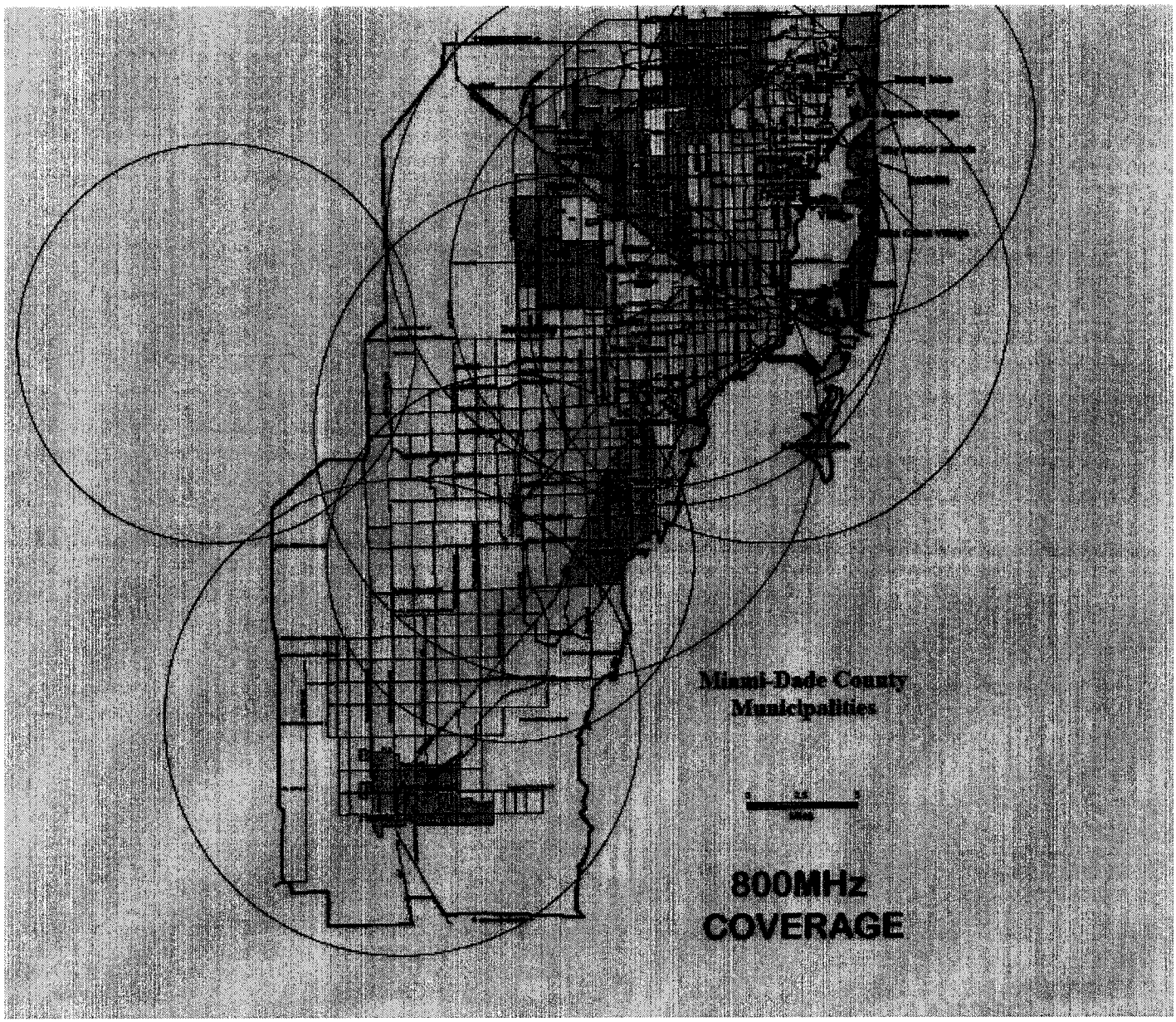
Federal Agencies
Alcohol, Tobacco, Firearms, & Explosives (ATF)
Biscayne National Park
Environmental Protective Agency
Everglades National Park
Federal Bureau Investigations (FBI)
Federal Protective Services Police
Federal Reserve
Immigration and Customs Enforcement (ICE)
Immigration and Naturalization Services (INS)
Secret Service
US Customs & Border Protection
US Marshals
Miami-Dade County Departments
Administrative Offices of the Courthouse
Animal Services Department
Aviation Department
Building Code Compliance Department
Building Department
Clerk of Court
Communications
Community Action Agency
Community Relations Board
Consumer Services
Corrections & Rehabilitation Department
Department of Environmental Resource Management
Department of Human Services
Enterprise Technology Department
Fire Department

General Services Department
Housing Agency
Library Department
Medical Examiner's Office
Office of Emergency Management
Parks & Recreation Department
Planning & Zoning Department
Police Department
Port of Miami Department (Seaport)
Public Works Department
School Board
School Board Police
Solid Waste Department
Team Metro Department
Transit Authority
Vizcaya Museum and Gardens
Water & Sewer Department
Military Agencies
National Guard
Southern Command
US Coast Guard
Municipality Agencies
Aventura P.D.
Bal Harbour P.D.
Bay Harbor Island P.D.
Biscayne Park P.D.
Coral Gables P.D.
Cutler Bay P.D.
Doral P.D.
El Portal P.D.
Florida City P.D.
Golden Beach P.D.
Hialeah Gardens P.D.
Hialeah P.D.
Homestead P.D.

Indian Creek Village P.D.
Medley P.D.
Miami Beach P.D.
Miami Gardens P.D.
Miami P.D.
Miami Shores P.D.
Miami Springs P.D.
Miccossukee P.D.
North Bay Village P.D.
North Miami Beach P.D.
North Miami P.D.
Opa Locka P.D.
South Miami P.D.
Sunny Isles Beach P.D.
Surf Side P.D.
Sweetwater P.D.
Town of Miami Lakes P.D.
Village Of Key Biscayne P.D.
Village of Palmetto Bay P.D.
Village of Pinecrest P.D.
Virginia Gardens P.D.
West Miami P.D.
Private Companies
American Ambulance
American Medical Response
FIU Police
Florida East Coast Railway Police
FPL
Humane Society
M/A-Com
Media (WTVJ)
Miami-Dade Ambulance
State Agencies
Florida Department of Law Enforcement (FDLE)
Florida Dept of Corrections

Florida Fish and Wildlife (FWC)
Florida Highway Patrol (FHP)
State Attorney's Office
State of Florida Department of Health

Attachment B – Radio System Map



Attachment C - PSIC Funding Timeline

PSIC FUNDING TIMELINE											
IMPLEMENTATION STEPS	**STEP 1**		**STEP 2**		**STEP 3**		**STEP 4**		**STEP 5**		**Live Deployment**
STEP DESCRIPTION	Acquisition / Design / Installation		State Coordination & MOU Execution		System Testing & Acceptance		System Training		System Exercise		
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Attachment D – Superbowl Chart

SUPER BOWL XLI

Communications Frequency Assignments

COMMAND*
TASK 1A
MDPD
BSO
Miramar PD
Ft Lauderdale PD
Pembroke Pines PD
MDFR/Hazmat
FBI
ATF
ICE
US Secret Service
FDLE

NFC TEAM***
TASK 2A
MDPD

DIG ESCORTS***
TASK 3A
MDPD

K9/EOC**
TASK 4A
MDPD
FBI
ATF
Miami PD
BSO
Ft Lauderdale PD
Miramar PD
Boca Raton PD
West Palm Beach PD
Coral Gables PD
Palm Beach PD

AVIATION*
TASK 5A
MDPD
MDFR
BSO
State
FBI #1
FBI #2
ICE

SRT/SWAT**
TASK 7A
MDPD
FBI
ATF
FDLE
Miami PD
BSO

INVESTIGATIONS***
TASK 8A
MDPD

INTELLIGENCE****
TASK 9A
MDPD
FDLE
Federal

NFL EXPERIENCE/ STADIUM SECURITY***
SPEVT 1A
MDPD

TRAFFIC*
SPEVT 2A
MDPD
FHP
Miramar PD

MOTORS***
SPEVT 3A
MDPD

MARINE**
POLTAC 5
MDPD
FWC
Miami Beach PD
Miami PD
Coral Gables PD

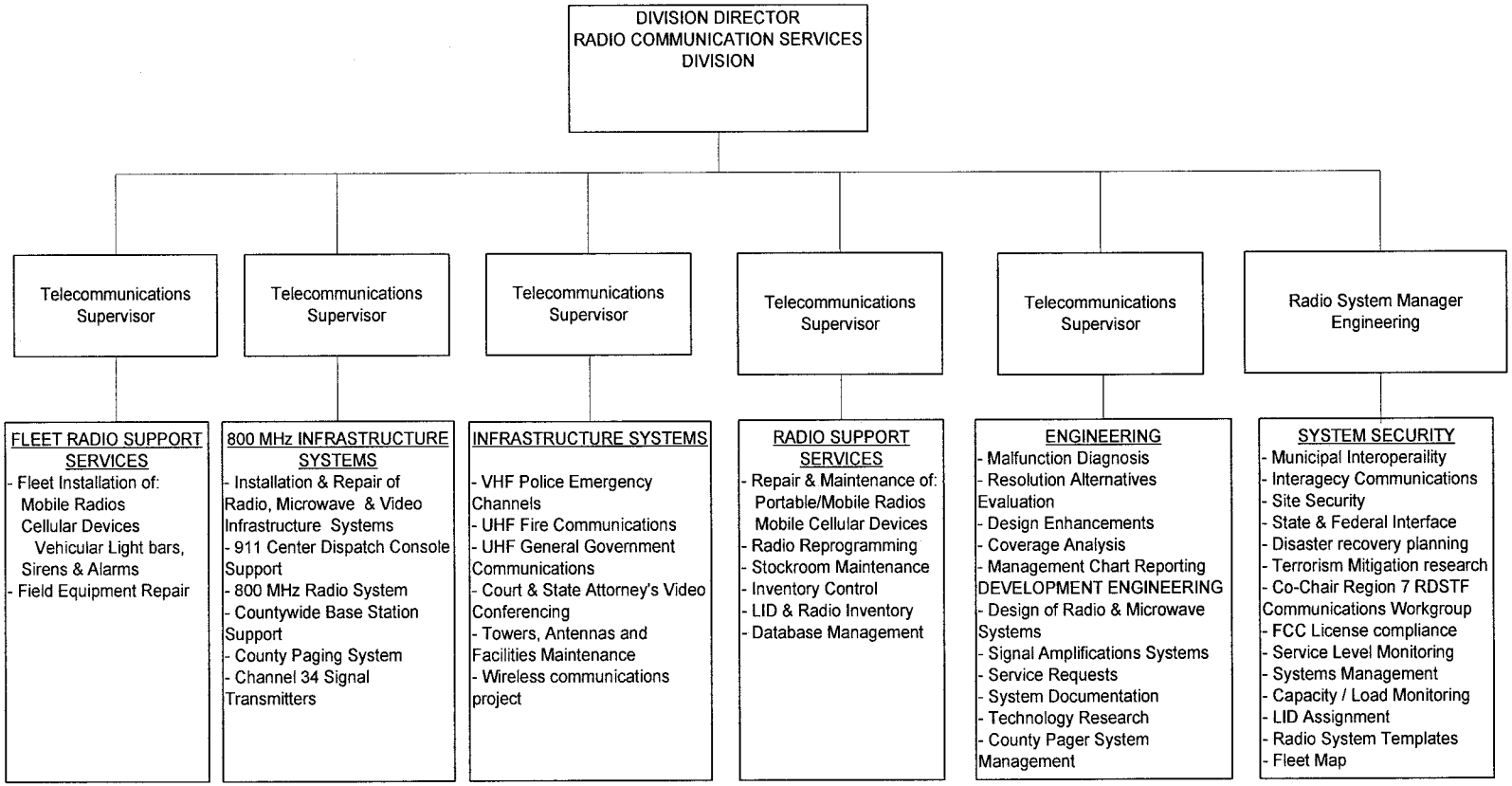
US Coast Guard

Note: Agencies patched by the Network gateway.

* VIDA Patched Frequencies
** Cache Radios
*** MDPD Only
**** Multi-Agency Teams

08/16/2006

Attachment E – Personnel Resource Table of Organization

MIAMI-DADE COUNTY

Enterprise Technology Services Department
Radio Communication Services Division