INFORMATION PAPER BUSINESS ADMINISTRATION COMMITTEE

UPGRADES TO 800 MHZ TRUNK RADIO SYSTEM TECHNOLOGY

December 2013



To provide information on the completed analysis for a phased technology upgrade implementation of the Airport Authority's Public Safety Radio Communications System.

Background

- The Airports Authority operates a 5-site, 11-channel Motorola 800MHz Trunked Radio System purchased in 1997 that provides mission critical communications for Reagan National Airport, Dulles International Airport, and the Dulles Toll Road.
- Recent strategic investments have been made in the system.
 - 2003 : The core of the system was replaced
 - 2005/2006 : Public Safety Radios were replaced to maintain interoperability with mutual aid agencies
 - 2009/2010 Two additional Radio Frequency (RF) Antenna Towers were constructed for coverage at Dulles International Airport

Radio System Assessment

Staff recently concluded a consultant review of the Airports Authority radio system which notes or recommends the following:

I - END OF LIFE COMPONENTS

System reliability and interoperability with the Airports Authority's partners is at risk due to end of life components within the existing radio system.

II - DE FACTO STANDARD FOR RADIO SYSTEMS

A de facto standard for radio systems in this geographic area necessitates that future systems be procured from Motorola. To deviate from that standard could create public safety risk of reliable interoperability.

III - COST RISK FOR NON-STANDARD RADIO SYSTEM

In addition to interoperability risk, there is significant cost risk to moving away from the standard – i.e., programming, equipment re-use, subscriber installations, and facilities construction.

IV - PHASED IMPLEMENTATION

Phased implementation minimizes operational risk.

V - PREVIOUSLY COMPETED CONTRACTING VEHICLES

There are previously competed government contracting vehicles for the Airports Authority to access in pursuing a Motorola System Refresh.

End of Life Components

System reliability and interoperability with the Airports Authority's partners is at risk due to end of life Motorola components within the existing radio system.

COMPONENT	END OF SUPPORT
Digital Spectra Consolette	NO LONGER SUPPORTED
Spectra Mobile Radios	NO LONGER SUPPORTED
Maxtrac	NO LONGER SUPPORTED
RCH3000 Radios	NO LONGER SUPPORTED
XTS3000 Portable Radios	NO LONGER SUPPORTED
Alarm Monitoring and Reporting System	4/30/2015
Zone Controller and Network Manager	12/31/2015
Encryption Key Loader	9/30/2016
Prime Site Controller	3/31/2017
Astro 25 Consolettes	10/1/2017
Remote Site Controllers	3/31/2018
Digital Signal Voting Comparators	12/31/2018
Console - Operation Positions and Digital Audio Switches	12/31/2018
Digital Interface Unit and Encryption Modules	12/31/2018
Radio Base Station / Repeaters	12/31/2020

Note – Components that are highlighted in red are high risk in terms of impacting reliability and interoperability with Airports Authority partners

Motorola – De Facto Standard across National Capital Region (NCR)

Motorola has become the de facto standard across the NCR. The operations need ongoing direct and interoperable communications with NCR agencies. Several aspects of this requirement can only be met by a Motorola-supplied system. Prime examples are Failsoft Operation* and Interoperable Communications in Encrypted Mode. To deviate from this standard would jeopardize reliable interoperability.

Jurisdiction	Technology Platform	Date
Alexandria	Motorola ASTRO-25	2010
Arlington County	Motorola ASTRO-25	2005
DC	Motorola ASTRO-25	2010
Fairfax County	Motorola ASTRO-25	2010
Frederick County	Motorola ASTRO-25	2010
Loudon County	Motorola ASTRO-25	2008
Prince George's County	Motorola ASTRO-25	2006
Prince William County	Motorola ASTRO-25	2011

*Failsoft is a feature that supports the ability to communicate in the event of trunk failure or malfunction.

Cost Risk for Non-Standard Radio Systems

- In addition to interoperability risk there is significant cost risk in deviating from the de facto radio system standard in the NCR Region that includes development and customization costs.
- Cost Savings can be realized through
 - "Smart-X" Technology (facilitates integration of the new core with older components)
 - Reduced programming costs through over-the-air programming to new and existing subscribers
 - Re-use of existing trunked equipment
 - Simplified mobile radio installations
 - Facility/Civil construction savings
- Together these savings are expected to total approximately \$1.2 million. If the existing \$800,000 subscriber cost is also considered, the cost savings would total approximately \$2 million.

Phased Implementation

Under a phased implementation approach, the new radio equipment will be interfaced into the existing Airports Authority radio system over time. This paced integration will allow a smoother, safer transition and lowers operational risks. Benefits of a phased implementation include:





Phased Implementation (Continued)



This is a logical approach to refresh and enhance the radio system technology platform. It extends Motorola 's support of the radio system and enhances interoperability with the NCR.

Previously Competed Government Contracting Vehicles

The Airports Authority can procure the necessary public safety radio system technology refresh under a phased process utilizing a contract competitively procured by other governmental units.

Jurisdiction	Procurement Method	Date	Comment
Alexandria	Negotiated as Upgrade to existing Motorola System	2010	Negotiated migration from Smartzone to Astro 25
Arlington County	Negotiated as Upgrade to existing Motorola System	2005	Negotiated migration from Smartnet to Astro 25
DC	Cooperative Purchase Houston-Galveston Area Council (HGAC) Contract	2010	Negotiated migration from Smartzone to Astro 25
Fairfax County	Negotiated as Upgrade to existing Motorola System	2010	Negotiated migration from Smartzone to Astro 25
Frederick County	Negotiated off of Stafford County Contract	2010	Negotiated migration from Smartzone to Astro 25
Loudon County	Negotiated off of Stafford County Contract	2008	Negotiated migration from Smartzone to Astro 25
Prince George's County	RFQ Qualification Process	2006	Motorola deemed only qualified response
Prince William County	RFP	2011	Motorola only qualified response

Next Steps

December 2013

Develop and Review Contracting Strategy

January/ February 2014

Business Administration Committee Consideration and Recommendation to Board

2014 - 2015 Phase 1 Implementation **2016 - 2019** Completion of phased system enhancements

Summary

Staff recently concluded a consultant review of the Airports Authority radio system which noted or recommended the following:

- System reliability and interoperability with our partners is at risk due to end of life components within the existing radio system.
- A de facto standard for radio systems in this geographic area necessitates that future systems be procured from Motorola. To deviate from that standard could create public safety risk of reliable interoperability.
- In addition to interoperability risk there is significant cost risk to deviating from the standard development and customization costs.
- Phased implementation minimizes operational risk.
- There are previously competed contracting vehicles for the Airports Authority to access in pursuing a Motorola System Refresh.

Next Steps -

Timeline	Milestone
December 2013	Develop and Review Contracting Strategy
January/ February 2014	Business Administration Committee Consideration and Recommendation to Board
2014 – 2015	Phase 1 Implementation
2016 – 2019	Completion of phased system enhancements

