



Saving Lives and Property Through Improved Interoperability

***Wireless Data Networking
Standards Support Report***

SUMMARY REPORT (2)

Final

January 2003

1. INTRODUCTION

As an adjunct to existing voice radio systems that are used for routine communications, public safety agencies are continuing to deploy new and innovative wireless data (i.e., non-voice) communications systems. Wireless data communications offer an additional form of communications to support the varied mission requirements of public safety organizations. Further, wireless data communications offers another avenue to interoperability benefits that extend beyond the internal unit-to-unit transfer of information within agencies. In fact, depending on the application, several wireless data technologies may provide multiple agencies, using disparate systems, with the ability to communicate vital information pertaining to a multi-agency response in real time. The Public Safety Wireless Network (PSWN) Program continues to explore advancements in wireless data communications that are capable of providing seamless, integrated public safety communications.

This report focuses on those efforts that are either currently being implemented or are being considered by public safety agencies across the globe. The *Wireless Data Networking Standards Support Report* is composed of the following sections:

- **Section 1—Introduction.** This section provides an overview of the report.
- **Section 2—Technology Reports.** This section includes two “white papers” describing advancements in wireless data technologies and standards.
- **Section 3—Capital Wireless Integrated Network (CapWIN).** This section contains an up-to-date description of the CapWIN project.

2. TECHNOLOGY REPORTS

During this reporting period, the PSWN Program conducted research and developed two “white papers” discussing emerging data technologies and developing wireless data standards respectively, both of which may have significant impact on the public safety community. The information presented includes—

- **Intelligent Transportation Systems (ITS).** ITS is a United States Department of Transportation initiative that represents the next step in the evolution of the Nation’s transportation system. This report highlights the ITS initiative, programs developed and deployed with ITS capabilities, and technology overviews, as well as public safety applications.
- **Biometrics Technologies.** The term “biometrics” has been coined to refer to the emerging field of technology devoted to the identification of individuals using biological traits. This report gives an overview of biometric technologies and applications, how biometrics can be leveraged using wireless technology, and how the public safety community can benefit from biometrics.

3. CapWIN PROJECT

The CapWIN project mission is “to ensure a coordinated response to any transportation, natural disaster, or public safety incident in the Washington, DC, region.” Through the partnership efforts of the states of Maryland (MD) and Virginia (VA), and the District of Columbia (DC), the CapWIN Project is developing a standards-based, integrated transportation and criminal justice information wireless data network. Used by the regions’ public safety and transportation organizations, this network will integrate data communications through an interconnection of the participating agencies’ existing wireless data systems.

Using a phased approach, the CapWIN Project will be completed over the course of several years. During the start-up phase, CapWIN staff completed numerous planning tasks in conjunction with a data-gathering effort and a user requirements analysis. Currently in Phase 1, the CapWIN Project has gained forward momentum with a contract award to IBM in August 2002. IBM has completed a buildout of the preliminary beta network at IBM facilities and will be transitioning this equipment to a CapWIN Project facility. With the preliminary network design complete, the CapWIN staff is presently conducting a critical design review. Specific Phase 1 deliverables, which are segregated into tasks 1–3, include—

- Task 1—Access to criminal justice databases in DC, MD, and VA. The databases include Washington Area Law Enforcement System (WALES), Maryland Interagency Law Enforcement System (MILES), and the Virginia Criminal Information Network (VCIN), respectively. This task will likely be completed in April 2003. The time delay can, in some cases, be attributed to lengthy state and district efforts to bring state databases online that are compatible with current National Crime Information Center (NCIC) protocols.
- Task 2—Access to traffic management centers in DC, MD, and VA and hazardous materials information through the CHEMTREC Center. With a kickoff meeting complete, the project staff expects to develop an applications program interface to support real-time communications for CapWIN mobile clients. The ability to access traffic management centers will be arranged once the interface is developed.
- Task 3—Connection of disparate mobile data systems. Discrete efforts associated with this task are being completed in parallel with technical system developments. Specifically, the CapWIN connector (i.e., interface for existing systems) will support mobile communications for agencies with existing mobile data capabilities.

In conjunction with technical system developments, the CapWIN staff is focusing on the recruitment of personnel and the relocation into a new facility. The new off-campus location is approximately 8,000 square feet, allowing for a full complement of staff as well as an engineering laboratory in one location.

At the request of the CapWIN Program, PSWN Program staff compiled a table that lists the descriptive details of the public safety land mobile radio (LMR) systems in the DC metropolitan region. More specifically, the table lists the function, radio frequency, system

manufacturer, and architecture for many of the public safety agencies in the DC metropolitan region. The list was compiled from various PSWN Program resources; it provides a “snapshot” of the region's LMR systems, however, it is not exhaustive. As the CapWIN Project moves into Phase II, a comprehensive survey effort will likely be required to obtain an inclusive list of possible participants and their current LMR assets.

**Table 3-1
DC Metropolitan Area LMR Systems**

Function	Agency	Frequency Band (Megahertz [MHz])	System Mfg.	Architecture
Fire	Arlington County, Virginia, Fire Department	800	Motorola	trunking
	City of Alexandria, Virginia, Fire Department	800	Motorola	trunking
	City of Fairfax, Virginia, Fire & Rescue Services	800	Motorola	trunking
	City of Falls Church, Virginia, Volunteer Fire Department	800		trunking
	District of Columbia Fire and Emergency Medical Services Department	800	Motorola	trunking
	Fairfax County, Virginia, Fire & Rescue Department	800	Motorola	trunking
	Loudoun County, Virginia, Fire & Rescue Services	800	Motorola	trunking
	Metropolitan Washington Airports Authority Fire Department	800	Motorola	trunking
	Montgomery County, Maryland, Fire & Rescue Services	138–174 (transitioning to 800)	Motorola	
	Prince George's County, Maryland, Fire Department	490–512		
	Prince William County, Virginia, Fire & Rescue Services	800	Motorola	trunking
	Police	Arlington County, Virginia, Police Department	800	Motorola
Arlington County, Virginia, Sheriff's Department		800	Motorola	trunking
City of Alexandria, Virginia, Police Department		800	Motorola	trunking
City of Alexandria, Virginia, Sheriffs Department		800	Motorola	trunking
City of Fairfax, Virginia, Police Department		800	Motorola	trunking
City of Falls Church, Virginia, Police Department		800	Motorola	trunking
Fairfax County, Virginia, Police Department		800	Motorola	trunking
Fairfax County, Virginia, Sheriff's Department		800	Motorola	trunking
George Mason University Police Department		800		
Greenbelt, Maryland, Police Department		450		
Loudoun County, Virginia, Sheriff's Office		800	Motorola	trunking
METRO Transit Police		VHF Hi-band (moving to UHF-T Band 490-512)		
Metropolitan Police–Washington, DC		UHF (450-470 MHz)		
Metropolitan Washington Airports Authority Police Department		800	Motorola	trunking
Montgomery County, Maryland, Police Department		138–174 (transitioning to 800)	Motorola	
Prince William County, Virginia, Police Department		800	Motorola	trunking
Prince George's County, Maryland, Police Department		490–512		
Virginia State Police	138–174			
Federal Law Enforcement Agencies	Federal Bureau of Investigation	138–174		
	United States Capitol Police	138–174		
	United States Marshals Service	138–174		
	United States Park Police	138–174		
	United States Secret Service	138–174		
	United States Park Police/Aviation Division	UHF		
	Federal Emergency Management Agency (FEMA)	406–420		
	FEMA Urban Search and Rescue Teams	406–420		
	Bureau of Alcohol Tobacco and Firearms	138–174		
	Defense Protective Service	406–420		conventional

Function	Agency	Frequency Band (Megahertz [MHz])	System Mfg.	Architecture
Department of Defense	Ft. Belvoir, Virginia, Fire Department	On Post 406-420 Mutual Aid 800		
	Ft. Myer, Virginia, Fire Department (Provides service to the Pentagon)	On Post 406-420 Mutual Aid 800		
Other	Virginia Department of Transportation	138-174		

The CapWIN Project has the support of numerous organizations including the Maryland State Highway Administration; Virginia Department of Transportation; U.S. Department of Transportation; National Institute of Justice, Office of Science and Technology; and the PSWN Program. When combined, these organizations provide the forward-thinking leadership necessary to build and sustain a regional network spanning public safety and transportation domains as well as jurisdictional boundaries. For additional information regarding the CapWIN Project, log on to www.capwinproject.com.