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November 12, 2009

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Additional Comment Sought on Public Safety, Homeland Security, and Cybersecurity Elements of National Broadband Plan	)	GN Docket No. 09-47
	)	GN Docket No. 09-51
	)	GN Docket No. 09-137
NBP Public Notice # 8	)	

COMMENTS OF THE NATIONAL ASSOCIATION OF STATE EMERGENCY MEDICAL SERVICES OFFICIALS ON NBP PUBLIC NOTICE #8

The National Association of State Emergency Medical Services Officials (NASEMSO) submits these comments in response to the Commission's request seeking additional comment on public safety, homeland security, and cybersecurity elements of the future National Broadband Plan (NBP Public Notice # 8).

Our Association is an active member in the FCC's selected Public Safety Broadband Licensee (PSBL), the Public Safety Spectrum Trust (PSST). We have therefore participated in the formulation and approval of the comments in response to NBP Public Notice #8 that the PSST has submitted. Nothing in this filing diminishes the importance of the more detailed considerations that constitute the comments submitted by the PSST. We are elaborating upon some concepts important to the emergency medical services (EMS) community in this nation and, consistent with the NASEMSO presentation at the Commission's field hearing on November 12th, 2009 on public safety broadband needs, are encouraging the Commission's consideration of two specific documents in its development of the National Broadband plan..

EMS communication's future is broadband. To save time in life-threatening situations, it will become essential to use

technologies now in development to send data in addition to voice communications. In this way, life-threatened patients will come more quickly to the attention of the EMS system, and responders will be better informed and more quickly able to make decisions about appropriate emergency treatment and transportation. The aging VHF, UHF and trunked systems used by EMS for the past 35 years will not support these data communications. While EMS providers in urban areas may be able to take advantage of 4.9 GHz public safety broadband systems, the rest of the national EMS community will be unable to support their patients' needs this way. Commercial wireless and unlicensed municipal systems may serve some limited roles in these communications; however the ability of a medic in the field to transmit life-critical data to a physician director in an emergency room cannot afford the delay that any system failure or transmission rate slowdown could cause. Being able to utilize the combined capabilities of 4.9 GHz and a new 700 MHz national broadband network, in combination with existing and new telemedicine and other fiber networks, will assure the EMS community the broadband transmission capabilities that it needs in both urban and rural settings to provide advanced emergency care and to assist community health systems fill other gaps.

NBP Public Notice #8 seeks comment on four separate sections of specific questions: Public Safety Mobile Wireless Broadband Networks, Next Generation 911 (NG911), Cyber security, and Alerting. Our Association will focus its comments on the first section. . For expert NG911 input, NASEMSO encourages the Commission to consult colleague associations the National Emergency Number Association (NENA) and the Association of Public-Safety Communications Officials-International (APCO), as well as the NG911 program of the USDOT's National Highway Traffic Safety Administration (NHTSA). In the cyber security realm, NASEMSO only encourages the Commission to act in cognizance of the security provisions of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) with which EMS and emergency hospital providers must comply.

1. **Public Safety Mobile Wireless Broadband Networks.**

    a. **How are public safety agencies making use of broadband networks today?**

    In recent years, ambulance services and EMS systems have piloted the use of wireless systems to enable emergency physicians to help assess patients at scenes of emergencies and in the back of the ambulance. Systems in Texas, Arizona, and Louisiana have implemented this capability, while it has been piloted in many more communities. Specialty care center sponsored emergency telemedicine systems to assist in the care of trauma and cardiac patients in smaller hospitals are on the increase, and wireless versions for EMS care,

particularly in rural settings are the aim of systems that have been developed. A number of these systems utilize unlicensed 2.4 GHz municipal systems. NASEMSO has discouraged the use of mission critical applications on these and commercial wireless networks because of the lack of reliability, security, and priority for EMS users.

Many EMS agencies nationwide are adopting electronic medical record systems, and are using commercial wireless air cards and other devices to transmit patient data back to their bases for processing. It is not known the degree to which services are attempting to use such systems for real-time patient record transmission to hospital, but the vendor which recently established the Baton Rouge, Louisiana video and data system for EMS has ambulance/hospital communications packages around the country which use broadband for transmitting a variety of real-time patient video, electrocardiogram data, and other information from the ambulance to the hospital.

Patient vital signs monitoring equipment is becoming more and more sophisticated and diagnostic imaging in portable form (computerized tomography or "CT", and portable ultrasound as examples) are now in routine use in hospital emergency rooms. An expert panel process sponsored by the National Public Safety Telecommunications Council, our Association, and the National Association of EMS Physicians, has recommended that EMS plan to secure the bandwidth necessary to support transmission of such imaging from the field for analysis by hospital ER medical directors in real-time. A system for monitoring multiple patients at a mass casualty incident was developed in recent years by a group led by the Johns Hopkins Applied Physics Laboratory (http://www.jhuapl.edu/AID-N/). Efforts at marketing the system, which requires greater than narrowband capability, are underway.

The first system to allow EMS personnel to receive patient records in real-time in the field from electronic medical record repositories began this year in Indianapolis (http://www.wishard.edu/396.html).

b. We seek specific details on both current and anticipated needs of the public safety community for mobile wireless broadband networks and applications. Specifically, we seek comment on:

i. the amount of anticipated peak, average, and cell edge broadband traffic and capacity requirements that public safety broadband use is generating and is expected to generate, and the number of current and anticipated public safety users

We cannot estimate these at this time.

ii. the type of traffic or users' patterns and usages anticipated for broadband services associated with critical, medium and low demand theater operations

We can project only that the likely most consistent use of real-time video and multi-viral signs data transmission will be in more rural settings where transport times are greater as is the likely need for direct care oversight by medical direction physicians. It is also in these areas that EMS primary care activities to fill health system gaps will be the greatest, likely requiring wireless telemedicine links and the broadband capability to support them. The possibility of wireless broadband links to "nodes" on telemedicine and other fiber networks might provide solutions for enhancing transmission to distant facilities. Urban areas, with more high-level field practitioners, large call volumes, and short transport times are less likely to use broadband for video, but may use it to burst update multi-vital signs and patient condition text data to facilities to which they are transporting and to receive patient record information from medical records repositories. In disaster situations, the use of wireless video may decrease dramatically as EMS providers are caring for and tracking larger numbers of patients and spending less time on individual patients. On the other hand, systems designed to monitor the vital signs of multiple patients may utilize much bandwidth locally.

iii. applications support requirements and associated data rates for both the down link and uplink operations and associated Quality of Service requirements

Multi-vital signs transmission experience with the Johns Hopkins Applied Physics Lab mass casualty incident project showed a requirement of 76 kbps per patient device, with as many as 20 patient devices monitored by one PDA-type monitoring unit. We are still researching medical quality video and imaging transmission requirements for field use.

iv. current and anticipated public safety device and applications needs

We anticipate the need for regular and medical quality video, multi-vital signs transmission, real-time monitoring of resource status (e.g. medevac helicopter, hospital and specialty center), secure reception of patient records from electronic medical record repositories, reception and retransmission to responding units of advanced automatic crash notification data, multi-vital signs monitoring of multiple firefighters and other responders in structure fires and other hazardous settings, monitoring and status transmission to portable and/or on-board devices of emergency vehicle systems, equipment and supplies status (particularly for ambulances). We would like to enter into the Commission's consideration in this regard, the US Department of Homeland Security's SafeCom Statement of Requirements for Public Safety Interoperable Communications (Volume 1, Version 1.2; found at: http://www.safecomprogram.gov/NR/rdonlyres/986E1584-1670-4BFE-9F0B-FA990C886D90/0/SoR1_v12_03122008.pdf). We especially reference the EMS scenario on pages 7 through 9, though all of the scenarios give a view of what expert panels of practitioners have projected for communications needs, a significant portion of which require broadband capability.

Further, we would also like to ask for the Commission's consideration of the content and recommendations of the FCC/NTIA report of the Joint Advisory Committee on Communications Capabilities of Emergency Medical and Public Health Care Facilities (February, 2008; found at: http://energycommerce.house.gov/Press_110/JAC.Report_FINAL%20Jan.3.2008.pdf).

v. **the corresponding extent of broadband infrastructure and backhaul that would be required to support public safety applications, and what technologies and solutions do public safety use or anticipate using to meet these requirements**

In addition to existing mission critical, narrowband voice capabilities, we envision that EMS' needs could be met through a combination of 4.9 GHz, new 700 MHz national public safety broadband (including its planned terrestrial and satellite components), and an innovative link to existing and new telemedicine and other fiber networks. The latter could allow an EMS crew in a rural area to wirelessly transmit data by 4.9 GHz hotspot or 700 MHz broadband to a reception node on a local

fiber run and have that data be received dozens or hundreds of miles away as need be.

The remaining questions that follow in this section:

Our Association has no further comments to offer beyond those which have been offered in the Public Safety Spectrum Trust submission

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