Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the matter of	)	
	)	
Public Safety, Homeland Security,	)	GN Docket No. 09-47
and Cybersecurity Elements of National	)	GN Docket No. 09-51
Broadband Plan	)	GN Docket No. 09-137

COMMENTS OF MOTOROLA, INC. – NBP PUBLIC NOTICE #8

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Motorola, Inc. ("Motorola") respectfully submits these comments in response to the above-captioned Public Notice issued by the Federal Communications Commission ("Commission") that seeks further comments on the public safety, homeland security, and cybersecurity aspects of the National Broadband Plan.[1] These comments add to information filed previously by Motorola in other phases of the Commission's broadband proceedings and should be considered in conjunction with those earlier filings.[2]

[1] Additional Comments Sought on Public Safety, Homeland Security, and Cybersecurity Elements of National Broadband Plan, DA 09-2133, released September 28, 2009 ("Public Safety Broadband Public Notice").

[2] *See e.g.*, Comments of Motorola, GN Docket No. 09-51, submitted October 23, 2009 ("Motorola's Broadband Spectrum Comments"); Comments of Motorola, GN Docket No. 09-51, submitted June 8, 2009 ("Motorola's Broadband Plan Comments"). *See also*, Comments of Motorola, GN Docket No. 09-47, GN Docket No. 09-137, submitted October 2, 2009 ("Motorola's Smart Grid Comments) *and* Comments of Motorola, GN Docket No. 09-157, GN Docket No. 09-51, submitted September 30, 2009 ("Motorola's Innovation Comments).

Summary:

The record in this proceeding has established a clear need for public safety to have access to broadband communications. As the Commission notes, such capabilities will provide access to video and data that will enhance the ability of first responders to respond as effectively and efficiently as possible.[3]

Today, public safety only has access to commercial networks and unlicensed operations to perform wireless broadband operations. While commercial services provide high quality broadband access under normal usage conditions, the cost, coverage, and control of the systems are unlikely to meet the complete set of public safety requirements. While commercial services will continue to accommodate some public safety broadband needs, the Commission must take steps to ensure that public safety has sufficient spectrum and operational control to meet its unique requirements, especially under critical usage conditions.

In Motorola's view, this will require the reallocation of the Upper 700 MHz D Block to public safety. Motorola fully recognizes the benefits of public safety partnering with commercial carriers to deploy and operate shared networks. Reallocation of the D Block, however, will provide public safety the ability to pursue a multiplicity of deployment scenarios and private/public partnership arrangements that allow agencies to take regional public safety needs into account. The decision of public safety interests to identify Long Term Evolution ("LTE") as the broadband interoperability Radio Access Network ("RAN") technology for use at 700 MHz will permit these types of flexible

[3] Public Safety Broadband Public Notice at 1.

approaches to be implemented on a regional basis without negating nationwide interoperability.

In looking at the requirements for deploying a public safety broadband network, the Commission must take into consideration the data rate at the edge of coverage. Incidents can happen anywhere and for broadband networks to support mission critical data applications, it must provide a sufficient data rate to users throughout the coverage area. However, data rates can vary widely throughout the coverage area and ensuring that an adequate rate is available at the cell edge will impact coverage, bandwidth needed, and cost. Providing public safety with the additional D Block spectrum will allow the system to achieve a minimum cell edge data rate with fewer base station sites, which will reduce the deployment costs of public safety broadband networks.

Public safety entities will need to deploy unique devices and applications that are different than consumer models despite operating on the same technology platform. Ensuring public safety control of the broadband networks means that the use of specialized devices or applications will be determined by public safety entities and not a third party. Motorola agrees with the position of the International Association of Chiefs of Police that broadband networks will not be a viable option for mission critical voice applications for at least 10-15 years as solutions to several significant technical challenges need to be defined and standardized before commercial broadband technology can provide the same level of functionality offered by current public safety technologies.[4] Until that happens, existing Land Mobile Radio ("LMR") systems used for mission

[4] *See* Letter from Harlin R. McEwen, Chairman, IACP Communications and Technology Committee to the Honorable Julius Genachowski, Chairman, Federal Communications Commission, PS Docket No. 06-229, submitted Oct. 12, 2009.

critical voice and new broadband systems will complement one another and provide public safety a full range of operational capabilities and redundancy.

While standards for Next Generation 911 (NG911) are being developed and are slated to be completed in 2010, Motorola notes that several being developed by public safety interests will need to be incorporated into commercial device and network standards maintained by commercial standards bodies. This will take additional investment and time. Once standards are finalized, funds will be needed to upgrade 911 facilities and networks in order to receive and decipher non-voice services delivered over a variety of platforms. Fees generated for 911/E911 purposes should fund these upgrades and the Commission should work with Congress and the States to ensure that these monies are not being used to fund projects unrelated to E911 upgrades.

Motorola provides the following answers to the questions raised in the Public Safety Broadband Public Notice in the same order as they are presented. Questions that are not answered are omitted.

Public Safety Mobile Broadband Networks:

1) One of the issues raised in the Broadband Plan NOI is how to best meet the needs of the public safety community for mobile wireless networks.

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

As the Commission is well aware, public safety lacks the spectrum and, in many cases, the funding to deploy broadband networks that meet the minimum requirements for mission critical applications. Therefore, public safety's use of broadband networks today is limited. Nonetheless, the following applications are being conducted by some jurisdictions over unlicensed frequencies and commercial broadband networks:

- Video / Picture delivery to mobile police cars and other vehicles
- Video sharing from mobile police cars and other vehicles
- Download of in-car video capture
- Mobile office applications – writing tickets, reports, database lookup
- Incident scene/event management – video and data network based coordination
- Automatic Vehicle Location/Computer Aided Dispatch (AVL/CAD)
- Automatic license plate reader updates

When wireless broadband networks designed to public safety specifications are deployed, more applications will be developed and used as existing options fall short of meeting the minimum requirements for public safety. In the unlicensed bands, the risk of interference between unlicensed devices does not typically provide the reliability required for public safety services. Commercial networks have limited quality of service and coverage areas that results in sub-optimal performance for public safety applications. At this time, such issues create disincentives for nationwide utilization of broadband services by public safety.

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.

Given the nascent stage of development and the lack of field experience with public safety broadband applications, it is difficult to provide specific data on traffic and

capacity requirements.[5] However, in areas where public safety organizations are deploying higher data rate systems, they are witnessing significant increases in data usage – as much as 50 times increase in data – as individual users become more familiar with the capabilities of the technology. Also, public safety agencies are under increased pressure to achieve greater productivity, crime prevention and reduction with existing force sizes. The budget realities facing many states and jurisdictions will likely drive adoption of data rich applications. Video surveillance and AVL/CAD are examples of applications that provide virtual response to incidents, increase productivity, and consume significant bandwidth. In time, it is expected that the demand for mobile broadband services by public safety users will mimic, and likely exceed, the surge in demand seen for commercial broadband services. It is therefore critical for the Commission to ensure that adequate capacity will exist in the future for public safety broadband networks based on the expectation that public safety's demands for wireless broadband capacity will increase tremendously once applications become available. Motorola therefore supports the reallocation of the Upper 700 MHz D Block spectrum to public safety so that a minimum of 20 MHz is available for public safety grade broadband networks in all regions.[6]

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[5] *See e.g.*, Letter from Harlin McEwen, Chairman, Public Safety Spectrum Trust ("PSST"), to Jennifer A. Manner, Deputy Chief, Public Safety and Homeland Security Bureau, FCC, GN Docket No. 09-51 (filed Oct. 1, 2009) ("PSST Letter"). ("This is a difficult question to answer at this stage because the aggregate data rate requirements depend on many factors, including the number of simultaneous users in a given cell, the frequency of use, etc. These factors are not yet totally known because there are currently no broadband services available to public safety for wide area use and many applications are still in early development stages.")

[6] *See e.g.*, Motorola's Broadband Spectrum Comments at 5.

Public safety networks are designed to provide service across an entire jurisdiction. Because incidents can happen anywhere, capacity requirements are therefore calculated at the edge of the service area where available data rates can be significantly reduced compared to locations within close proximity to the base station infrastructure.[7] For example, an LTE-based system having access to 20 MHz of spectrum (two 10 MHz blocks of paired spectrum) typically provides data rates of approximately 17 Mbps on the downlink and 8 Mbps on the uplink throughout a sector. At the fringe edge of a typical sector, total throughput can be reduced to approximate rates in the range of 1 Mbps. The total available uplink capacity for an entire sector can be easily consumed by only a few video users responding to an incident at the cell edge of the sector leaving no broadband capacity for officers at other locations in the cell sector.[8]

Motorola emphasizes that data rates are dependent on many factors and therefore can only be determined as part of an entire system design. However, it is clear that 10+10 MHz of spectrum will provide the option for faster rates than those available with only 5+5 MHz of spectrum. As addressed in Motorola's opening remarks during the Commission's field hearing on public safety spectrum, reallocating the D Block to public safety to provide a 10+10 MHz block also positively impacts coverage.[9] The additional

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[7] In addition to distance from the base station transmitter, available data rates are also dependent on the number of simultaneous users within a cell sector.

[8] High uplink data rates are important for public safety users. For public safety purposes, usable video can be achieved at speeds of approximately 250 kbps per camera. Higher data rates – as high as 1 Mbps per camera – is often desired for evidentiary purposes.

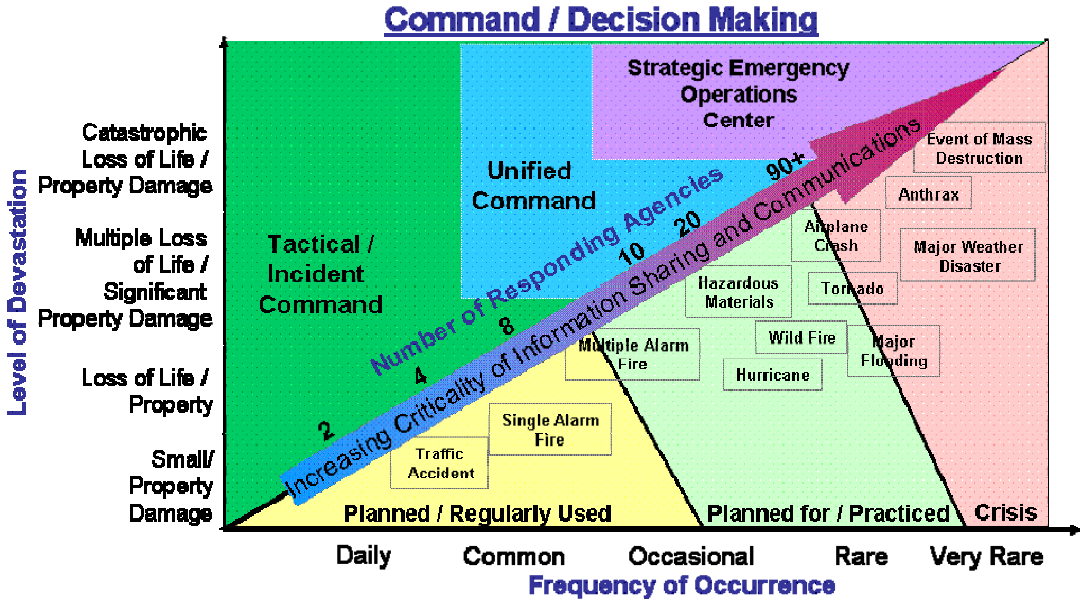
[9] Opening remarks of Bob Epsom, Motorola, FCC Broadband Field Hearing held at Georgetown University, November 12, 2009.

spectrum results in less self-interference within a system and allows frequency diversity gains, both of which help increase cost-effective coverage.

In the real world, maximizing throughput and coverage must be balanced with deployment costs. This is another reason favoring the reallocation of the Upper 700 MHz D Block spectrum to public safety. The additional costs associated with deploying a single cell site using 20 MHz over 10 MHz is minimal but the resultant additional throughput available in each cell will allow designers to meet a minimum cell edge data rate with fewer base stations across a jurisdiction.

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

The following chart, which is based on Motorola's experiences with large scale incidents such as Hurricane Katrina and the attacks of September 11th as well as countless other incidents over the years, depicts the number of agencies that can be expected to respond to various types of emergencies. As shown in the chart, 90 agencies (even more in some cases) can be expected in response to catastrophic events. Going forward, the response to such incidents will require broadband communications to augment existing voice networks and support additional operational capabilities for all responders.



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

Public safety's requirements are unique in that they typically need higher uplink data rates than consumers because emergency responders send large amounts of data from incident scenes back to command centers. Real time video will likely be the highest data rate application. As stated earlier, for public safety purposes, usable video can be transmitted at uplink speeds of approximately 250 kbps per camera but 1 Mbps per camera is desirable for providing higher quality video, which is often required for evidentiary purposes. Multiple cameras are also desired to provide a 360 degree immersive view of an emerging situation.

iv. current and anticipated public safety device and applications needs.

Public safety's specialized requirements influence device design. Mission critical applications require ruggedized devices with extended battery life and higher operating

powers than consumer devices. However, not all public safety applications will be mission critical. It is necessary to ensure that multiple types of devices are available to users and that public safety users maintain the right to choose and deploy any interoperable device needed to meet their operational requirements.[10]

These unique characteristics also require that public safety users be able to determine the types of applications and devices that they can deploy onto broadband networks. Another benefit of placing the 700 MHz D Block spectrum under public safety control is that commercial considerations will not drive the decision on whether certain devices or applications designed for public safety can be placed on the deployed broadband network.

vi. specific network features and anticipated architecture that will allow the broadband network to operate seamlessly with disaster recovery capabilities nationwide, and the kind of connectivity needed with legacy and other commercial networks

Having a common broadband radio access network ("RAN") technology is a key step in providing roaming capabilities for both day-to-day operations and disaster recovery. APCO International, the National Emergency Numbering Association ("NENA"), the Public Safety Spectrum Trust ("PSST"), and the National Public Safety Telecommunications Council ("NPSTC") – have all endorsed LTE as the 700 MHz

[10] Motorola urges the Commission to review the San Francisco Bay Area Request for Information (RFI) for a Regional 700 MHz Wireless Mobile Broadband Network. A review of this document will provide the Commission additional insight into the many requirements that need to be considered in designing a broadband network to meet public safety's needs. Sections K and L of the document specifically address device requirements and applications/use cases, respectively. The document is available at http://mission.sfgov.org/OCA_BID_ATTACHMENTS/FA10628.pdf.

broadband interoperability technology.[11] In addition, a number of the pending waiver requests to deploy regional public safety broadband networks on 700 MHz frequencies affirmatively state that the applicant intends to use LTE for its regional network.[12]

The roll out of public safety broadband networks is likely to vary in schedule somewhat from area to area. Concurrently, some commercial operators are expected to roll out 700 MHz broadband services and those deployments will also vary in schedule from area to area. Therefore, gateways enabling devices to operate across both public safety and at least some commercial broadband networks would help provide basic broadband functionality in the most areas in the shortest amount of time. However, this need must be balanced with practical technology limits on the frequency span that can be accomplished by available 700 MHz band chipsets. Rather than specific Commission requirements in this area, Motorola recommends that the PSST (in its role as the public safety broadband licensee) the manufacturing community and public safety agencies who are authorized to deploy regional broadband systems work together to maximize seamless connectivity as soon as realistically feasible.

The vast array of mission critical LMR networks would also provide connectivity that is complementary to nascent broadband service provided over LTE networks. Bridging LMR and broadband systems, where possible, will enhance the functionality of LTE networks but interoperability across networks would need to consider authentication

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[11] *See e.g.*, Comments of Motorola, Inc., PS Docket No. 06-229, at 4-5 (filed Oct. 16, 2009) at 4.

[12] Comments of Motorola, Inc., PS Docket No. 06-229, at 4-5 (filed Oct. 16, 2009) at 5.

of devices/users on non-home networks and variability of rights (*i.e.*, quality of service or "QOS") depending on the user and the network.

Providing public safety users with nationwide LTE broadband coverage can be achieved in one of 3 ways: 1) a nationwide LTE network with little differentiated control of QOS and access by local agencies, 2) peer-to-peer LTE networks enabled by a Network to Network Interface, which yields moderate differentiation and control of QOS and access by local agencies, or 3) individual networks bridged to discreetly allow interoperability and roaming, which would provide maximum differentiation and control of QOS and access by local agencies. Today's mission critical public safety systems rely on the capability of system managers to discreetly control QOS and access in order to optimize communication during various types of incidents. LTE networks should allow QOS to be modified at the agency, incident scene, or authorized user level during incidents. This approach helps optimize communications and operations as the priority for various responding functions may vary during the duration of the incident.

Furthermore, it is critical to allow public safety incident managers or their designated communications personnel the flexibility to execute various levels of prioritization and QOS. Any rule that requires the same level of seamless roaming and common QOS for all users would be contrary to this operational requirement. Incident scene management for first responders at the incident should always take the highest priority.

vii. definition and quantification of both mission critical voice and mission critical data

Mission critical voice is the primary link to other first responders and dispatchers who can provide support when life is on the line. Mission critical voice requires fast access with call set-up times typically in the 100-200 milliseconds range for LMR systems and extensive coverage. Public safety agency's typical design criterion is coverage over 97 percent of an agency's jurisdiction with significant in-building penetration.

Redundancy or link diversity is also a key feature for mission critical voice systems. There must be a high degree of certainty that communications can be completed when individual base sites or the entire network is not available. Mission critical voice systems are designed with a series of alternative solutions in case of outages. In addition to redundant master sites, links, and base stations, communications can be achieved if a site is isolated from the rest of the system ("failsoft"), and continue to support wide area coverage even if redundant links and/or master sites are unavailable. Finally, direct unit-to-unit communications can take place when needed with no intervening infrastructure providing basic communication when all other options are down. Portable units operating with 3 to 5 watts and proper antennas can provide unit-to-unit communications separated by up to 2-5 miles.

These multiple levels of support are fundamental in today's mission critical systems and are not yet available in broadband networks. Reproducing this level of operational redundancy is one of the more significant hurdles for broadband technologies to address before they can be relied upon to function as fully mission critical networks.

viii. specific requirements for hardening of cell sites and other network facilities, and for other requirements of network survivability and disaster recovery

Public safety systems typically provide hardened base sites to ensure survivability during emergencies. At the cell site, this includes backup generator power, lightening suppression, redundant site links, and secure facilities with controlled access. Typically, these capabilities are provided at all public safety base sites, while not all sites in typical commercial networks are similarly provisioned.[13] At the network operations center, hardening entails backup power, fault tolerant computing platforms, separate backup locations with automatic failover, and secure facilities with controlled access.

Maintaining operability during natural disasters or other outage conditions is the primary reason why first responders maintain their own communications systems and do not rely on commercial networks for mission critical applications.

c) We also seek concrete, itemized data on costs and resources necessary to satisfy public safety broadband needs for mobile wireless services.

The cost for building public safety broadband networks is dependent on a number of factors. Once the Commission makes spectrum available, regions will likely specify the operational requirements for broadband systems. The required coverage requirements, in-building performance and cell edge data rates for a given region, as well as the amount of spectrum available, all impact the cost of deployment. One fact is certain – the final costs will be significantly higher than what would be expected for a

[13] The larger coverage area provided by typical LMR design (*i.e.*, high power, high antenna site) means that fewer base sites are needed to cover a wide geographic area than are needed for broadband technologies deployed in a cellular architecture. This makes the task of maintaining and fueling back-up generators during blackouts or power outages more manageable than it is for commercial cellular networks that have anywhere from 4 to 10 times more base sites.

purely commercial network because of the need to cover rural areas not normally covered by commercial providers and because of hardening requirements as described above.

g) What actions must the Commission or other entities take to ensure interoperability among public safety broadband systems?

The public safety community, with the substantial assistance of equipment manufacturers and commercial wireless broadband carriers, has devoted significant resources for defining broadband interoperability.[14] NPSTC's Broadband Task Force has developed a sound set of recommendations that does well to balance the need for ensuring roaming and interoperability while providing the regional systems flexibility to design and specify the technical parameters of their systems to meet local needs.

Notwithstanding the exceptional work done by the committee, Motorola does not believe that the Commission should condition any public safety broadband waiver grants on strict adherence to the recommendations of the Broadband Task Force. At this nascent stage of public safety broadband system development, the description of network elements needed to ensure interoperability and roaming access is an evolving process. The recommendations of the Broadband Task Force, which were completed in a very short time period, will likely be refined based on actual deployment experiences.

[14] At the request of the PSST, NPSTC formed a 700 MHz Broadband Task Force ("Broadband Task Force") in June of 2009 to develop the minimum recommendations necessary to ensure roaming and interoperability among localities and regions that have submitted waivers to build out 700 MHz broadband networks ahead of a nationwide network. Completed in September of 2009, the recommendations of the Broadband Task Force are now available on NPSTC's web site. *See* NPSTC 700 MHz Broadband Task Force Report and Recommendations, September 4, 2009, *available at* http://www.npstc.org/documents/700_MHz_BBTF_Final_Report_0090904_v1_1.pdf ("Broadband Task Force Report").

To this end, Motorola strongly supports one key recommendation of the Broadband Task Force that an Advisory Group made up of representatives of the regional system operators and the PSST be established to continue follow-on work and to provide advice to the PSST Board.[15] This advisory committee will help ensure that future network development will benefit from the best practices learned by the early adopters. The Commission should monitor and promote these further discussions.

h) We also seek comment on whether public safety users anticipate using a single network for mobile broadband data and voice services in the short or long term, on the obstacles to such convergence, and on how the Commission could help to address these problems or otherwise support efforts at convergence.

The IACP recently wrote Chairman Genachowski to explain that it will be 10-15 years before public safety agencies would be in a position to consider whether broadband networks could supplant existing LMR narrowband networks for mission critical voice applications.[16] Motorola agrees with the IACP as the standards, procurement and buildout processes principally dictate this reality.

There are non-trivial technical issues associated with designing LTE systems and devices to replicate existing features of LMR networks, such as one-to-many calls, site failsoft, and unit-to-unit communications that will need to be resolved, tested and confirmed. In order for broadband technologies that are optimized for commercial users to match the functionality of today's public safety systems, many integrated issues would need to be addressed. Some of these issues include significant technical hurdles for which solutions still need to be invented. Afterwards, interoperability and operational

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15 Broadband Task Force Report at 5.

16 *See* n. 4 *supra* at Attachment, p. 5.

standards will need to be developed and adopted before the numerous public safety specific features can be developed. These solutions do not yet address the coverage, interference, and interoperability differences between the two types of systems.

Broadband data, which is extremely valuable and in some cases critical, is not relied upon in emergencies the same as voice.[17] As discussed earlier, during life and death communications, officers must have their hands and eyes free to monitor the situation. Voice communications provide this capability and existing voice networks have been designed to enable such communications with a very high degree of certainty. Deploying broadband data networks to replicate the existing coverage and reliability of voice networks may be prohibitively expensive.

Motorola believes that broadband communications will be a very useful supplement to mission critical voice networks. Continuing support for narrowband voice networks will provide additional redundancy for public safety agencies as there is great risk in carrying all public safety data, secondary voice (*e.g.,* telephony) and mission critical voice on the same network. Existing voice systems are designed with a very high degree of survivability during emergencies and retain functionality even in the most extreme circumstances due to features such as isolated site operation, unit-to-unit communications without any infrastructure, high sites with full hardening and generator support, and limited backhaul needs that allow for redundant backhaul feeds (*e.g.,* cable and microwave). Replicating this level of service and functionality over broadband networks would significantly increase the costs for network operations.

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[17] *See e.g.,* n. 5. *supra* at 1, 2.

Next Generation 911 (NG911):

2) The Broadband Plan NOI has also been exploring whether the American public could use broadband technologies to better communicate with emergency responders when they make 9-1-1 calls.

Motorola provides these general comments to the Commission's questions on the broadband requirements of NG911. There is no doubt that multimedia, including real-time text, pictures and video will play an important role in improving emergency response to people contacting 911.[18] To make full use of these advanced applications, 911 Public Safety Answering Points ("PSAPS") will require broadband access. Likewise, as referenced above, sufficient bandwidth for public safety broadband deployment will be needed for responder networks to utilize and support NG911 related broadband applications/information that will be delivered to responders in the field. Such information will improve awareness and potentially enable more informed decision making of responders as they approach or perform their duties at the emergency scene.

Implementation of NG911 requires standards. NENA has been leading standards development for PSAP network architectures and data requirements. While NENA anticipates that the majority of standards work will be completed in 2010, this does not account for further standards work on the commercial side. Several of NENA's standards documents will need to be incorporated into commercial device and network standards maintained by commercial standards bodies. This will take additional investment and time, similar to the commercial mobile alerting effort.[19]

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[18] Short Messaging Service ("SMS") is not a real time service and may not provide optimal emergency services in all cases.

[19] In 2007, the Commercial Mobile Service Alert Advisory Committee ("CMSAAC") submitted recommendations to the Commission indicating the time needed for commercial providers to implement commercial mobile alert service ("CMAS") after

Once standards are finalized, PSAPs will require funds for upgrading facilities and networks to be able to receive and decipher non-voice services. Fees generated for 911/E911 purposes should fund these upgrades. The Commission should work with Congress and the States to ensure that these monies are not used to fund projects unrelated to E911 upgrades.

Finally, the FCC should ensure that Federal regulations do not impose unintended barriers to the implementation of NG911, and they should help coordinate efforts at the Federal level to ensure that various State regulations do not impose these barriers. Rules should be drafted that reference standardized interfaces and allow vendor agnostic solutions that support NG911 services to be developed and deployed. This will prevent, for example, bias against real-time text messages to 911 PSAPs as opposed to calls that arrive through the public switched telephone network.

Alerting:

4b. How can broadband technologies improve the effectiveness of emergency alerts for all Americans, including people with disabilities, people living in rural areas and people who do not speak English? Comments should include information on improvements to message content, geographic targeting, system security, and speed of message transmission from the alert initiating government agency to the public.

The advancement of broadband networks – both wired and wireless – will greatly expand the opportunities and means of distributing emergency information. Motorola was an active participant in the development of recommendations for the implementation of the Commercial Mobile Alert System ("CMAS") and supports the industries' continuing efforts to implement technologies consistent with the Commission's final

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specifications were developed. *See* The Commercial Mobile Alert System, *First Report and Order,* PS Docket No. 07-287, FCC 08-99 (rel. April 9, 2008) at ¶ 92.

rules. When implemented, CMAS will help ensure that all Americans will have the capability to receive timely and accurate alerts, irrespective of what communications technologies they use. As the process continues to evolve, the Commission should continue to reject any proposals to mandate specific, limited technologies into wireless handsets.

Conclusion:

Ensuring that public safety officials have the communications tools necessary to protect people and property is the highest purpose of the Federal Communications Commission. Motorola urges the Commission to act accordingly so that emergency responders can augment existing mission critical voice capabilities with advanced data and video applications as soon as possible.

Respectfully submitted,

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