

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

In the Matter of)	
)	
Wireless E911 Location Accuracy Requirements)	PS Docket No. 07-114
)	
Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems)	CC Docket No. 94-102
)	
Association of Public-Safety Communications Officials-International, Inc. Request for Declaratory Ruling)	
)	
911 Requirements for IP-Enabled Service Providers)	WC Docket No. 05-196

COMMENTS OF NOKIA INC. AND NOKIA SIEMENS NETWORKS

Nokia Inc. and Nokia Siemens Networks (“Nokia”) respectfully submits these comments in response to Part B of the Commission’s recent Notice of Proposed Rulemaking in the above-captioned proceeding (“NPRM”).¹ Nokia applauds the Commission for its continued commitment to improving E911 location accuracy. However, given the complexity of the issues raised by the NPRM, Nokia believes that the best way to meet the Commission’s goal of improving E911 location accuracy is the establishment of a working group that would include all interested parties and would consider all of the issues raised in the NPRM and the variety of current and future technologies that could be used to improve E911 location accuracy. An evaluation of the technical and commercial feasibility of all available solutions by such a forum

¹ *Wireless E911 Location Accuracy Requirements*, Notice of Proposed Rulemaking, FCC 07-108 (June 1, 2007) (“NPRM”).

is critical to ensure that solutions are adopted that can ultimately meet the new requirements. One of the most critical issues that this forum would evaluate is the feasibility of moving to a single location accuracy standard for all technologies. Nokia believes that providing location information that meets a single standard for all technologies will be enormously complex and will require a high level of investment from all stakeholders. Such a requirement should only be implemented after all parties have been given adequate time to develop appropriate technologies and to implement such technologies in a commercially reasonable manner. To the extent the Commission does adopt a new location accuracy requirement, including one that would require PSAP level testing, the Commission must provide adequate time for the wireless industry to implement and deploy technology necessary to meet it.²

I. THE COMMISSION SHOULD INITIATE AN INDUSTRY WORKING GROUP TO CONSIDER NEW TECHNOLOGIES THAT CAN BE DEVELOPED AND DEPLOYED TO IMPROVE LOCATION ACCURACY.

There is no universal “silver bullet” that will resolve all the problems associated with providing accurate location information. As detailed below, today’s current location technologies have several limitations. In addition, there are a wide number of technologies that are currently in development that could be used to provide more accurate location information.³ None of these technologies, however, have been adopted by the industry as the ultimate solution for all technologies in all environments. Thus, the Commission should initiate an industry working group to consider the various technologies that are being developed to improve location accuracy and their limitations.

² See Comments of Motorola, Inc. and Nokia Inc., PS Docket No. 07-114 (filed July 5, 2007); Reply Comments of Motorola, Inc. and Nokia Inc., PS Docket No. 07-114 (filed July 11, 2007).

³ See NPRM at ¶ 11.

Examples of technologies that this group should study include: Wi-Fi positioning, which could be used to improve indoor and urban area location accuracy; improvements of the Global Navigation Satellite System (“GNSS”) satellite systems, which could enhance location accuracy for GPS-based location solutions; and the development of “Location Aware” phones that are always trying to identify their specific location.

These technologies are only a few of the potential solutions that could improve location accuracy. Obviously, there are many others although no single solution is likely to solve all problems and each of them has significant challenges in terms of cost, impact to device design and performance. The working group, however, should consider each in turn to determine whether they would be effective in improving location accuracy and in what situations. Only after the full consideration of all possible solutions will the working group and the Commission be able to determine what location accuracy standard will be achievable in the long term.

The working group also should consider the time frame within which any new requirement, including measuring accuracy at a PSAP level, should become effective.⁴ As described herein, the proposals in the NPRM raise complex technical, commercial and operational issues. While aspirational goals are useful to ensure continued progress, the history of this issue demonstrates that setting realistic, commercially achievable requirements represents the best way to ensure that E911 services are improved in the most effective and efficient manner possible. All relevant stakeholders should expeditiously consider the issues raised in a collaborative process and deliver consensus-based recommendations to the Commission.

II. THE COMMISSION SHOULD NOT ESTABLISH A SINGLE LOCATION ACCURACY STANDARD IN THE NEAR TERM.

A single location accuracy standard for all technologies will be extremely difficult to

⁴ See *id.* at ¶ 13.

meet and will require enormous economic and technical investments by all stakeholders. Such a requirement should only be adopted after a thorough evaluation by the industry forum described above and in a timeframe that takes into account the massive network and technology investments made by carriers based on the current rules. Finally, wireless VoIP services have only recently been deployed commercially and any E911 requirements should not be placed on these new services prematurely.

A. **CMRS Location Standards Should Be Addressed In A Reasonable, Achievable Fashion.**

The NPRM seeks comment on how to best ensure that PSAPs receive location information that is as accurate as possible for all wireless E911 calls.⁵ As part of this, the Commission tentatively concludes that it would be in the best interest of the public to have a single location accuracy requirement rather than the current separate accuracy requirements for network and handset-based technologies.⁶

Wireless carriers have deployed various location technologies, as deemed acceptable by the Commission in its past E911 decisions. The NPRM seeks comment on the capabilities and limitations of these technologies.⁷ CDMA carriers historically have deployed a hybrid approach in which they use both network location technologies and A-GPS. In contrast, GSM carriers have primarily deployed network-based solutions. Even with the deployment of hybrid technologies by both CDMA and GSM providers, however, carriers will still face significant challenges meeting a single standard under all conditions, especially if a PSAP level compliance requirement is adopted. Both types of technology continue to have limitations. For example, A-

⁵ *Id.*

⁶ *Id.*

⁷ *Id.* at ¶ 11.

GPS performs well in rural areas but does not perform as well in urban areas and other areas where satellites may be blocked from view. In contrast, network technologies provide high levels of accuracy in urban and suburban areas where there are multiple cell sites within close proximity but do not perform as well in rural areas where there are fewer cell sites. Neither technology performs as well deep inside buildings, homes, tunnels, subways, and other structures. Thus, under a hybrid approach, carriers will choose to utilize the technology that provides the most accurate location information in each situation.

Nokia believes that a future uniform accuracy standard should take into account both the technology employed by the carrier and the environment of a given location. As noted above, various location technologies have certain advantages and limitations, depending on the geography and topography of a given environment. Accordingly, a tiered approach that takes into account the realistic challenges presented by different technologies and environments would help ensure that location accuracy improvements can be realized in an achievable manner. If the Commission ultimately does adopt a uniform standard, it should do so only after an appropriate standard is recommended by the industry forum described above and pursuant to a timeframe that allows carriers to implement technologies to meet it in a commercially reasonable manner.

B. The Commission Should Show Care In Applying E911 Location Requirements On Wireless VoIP Services.

The Commission also seeks comment on whether and to what extent providers of interconnected VoIP services should be required to provide E911 location data and whether they should be subject to the same standards as CMRS providers.⁸ The Commission tentatively concludes that to the extent that an interconnected VoIP service may be used in more than one location, providers must employ an automatic location technology that meets the same accuracy

⁸ See *id.* at ¶ 18.

standards that apply to CMRS.⁹

Nokia notes that interconnected VoIP services, especially over wireless, are in a nascent stage of development and believes the Commission should take care not to impose unachievable regulatory obligations on these services that may hinder their development and the great promise they show for U.S. consumers. Specifically, Nokia believes that these services should not be subject to the Commission's CMRS E911 location requirements without ensuring that time is taken to study location technologies that can be used when a wireless 911 call is made using VoIP, standards are developed for delivering location technology over the Internet when a wireless VoIP 911 call is made, and technologies to be utilized for location are tested and finally deployed. While Nokia is supportive of efforts by the Commission to initiate analysis of wireless VoIP E911 location requirements, Nokia strongly believes that there are significant public benefits from the availability of such novel products, especially in-building or within a residential environment where a CMRS signal may not be present. In such circumstances, these new wireless VoIP products may be the only way a consumer could make a 911 call at all. Accordingly, Nokia recommends that the Commission not adopt any location requirements for wireless VoIP products until the industry working group discussed above, after consultation with relevant industry standards bodies, can make reasoned recommendations on the technology path for these systems.

III. CONCLUSION.

In sum, Nokia urges the Commission to defer revising its E911 location accuracy requirements for CMRS and VoIP providers until an industry working group has had adequate time to study and evaluate current and future technologies that could be used to improve location

⁹ *Id.*

accuracy as well as their limitations. Only after this working group has fully evaluated the various technologies and their ability to provide location information should the Commission adopt more stringent E911 location accuracy requirements. Even then, however, the Commission must ensure that the standards it adopts (as well as the time frame within which the standards become effective) are achievable.

Respectfully submitted,

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