

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

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

COMMENTS OF QUALCOMM INCORPORATED

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TABLE OF CONTENTS

I. Introduction1

II. A PSAP-By-PSAP Requirement Would Be Inherently Arbitrary, Would Cause Misleading Results, and Cannot Be Met with Current Technology4

III. The Commission Should Engage All Stakeholders to Develop Measurable, Attainable Metrics to Improve E911 Accuracy 7

IV. Conclusion8

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COMMENTS OF QUALCOMM INCORPORATED

QUALCOMM Incorporated (“QUALCOMM”), by its attorneys and pursuant to the Commission’s Notice of Proposed Rule Making (“NPRM”) in the above-captioned proceedings, FCC 07-108, released June 1, 2007, hereby submits its comments on Section III.A of the NPRM, wherein the FCC tentatively concludes that it should change Section 20.18 (h) to require that carriers must meet the Phase II E911 accuracy requirements at the PSAP service level. See NPRM at para. 5.

I. Introduction

QUALCOMM is, and has been for many years, deeply committed to the highest degree of E911 accuracy and developing the technology to enable wireless callers to be located as quickly and accurately as possible when they call 911. QUALCOMM is the pioneer of the Assisted GPS (“AGPS”) wireless position location technology. AGPS is the world’s most accurate wireless position location solution. Assisted GPS, as it has been implemented by many

U.S. wireless carriers and OEMs, produces highly accurate results that are consistent with the Commission's E911 mandate, as it has existed and been interpreted for many years, when the results are gathered by considering calls made across the range of environments, including dense urban, urban, suburban, and rural, in accordance with the distribution of emergency calls across these areas typically experienced by the carriers. Moreover, QUALCOMM is, and has been for many years, aggressively engaged on a continuous basis in developing enhancements and improvements to AGPS to improve its accuracy to the greatest extent possible. QUALCOMM has a deep commitment to enabling the most accurate, robust, and precise wireless E911 technology to assist our nation's police, fire, first aid, and other emergency rescue and first responder personnel to carry out their important duties in protecting the public. QUALCOMM intends to continue working with its carrier partners, its infrastructure and handset vendor partners, and the public safety community to improve and enhance E911 accuracy as much and as soon as possible.

With respect to the particular topic addressed in Section III.A in the NPRM, QUALCOMM has previously submitted its views to the Commission on the topic. On December 23, 2005, QUALCOMM submitted an ex parte letter on the question of whether the Commission's rules should be changed to require that carriers meet the Phase II E911 accuracy requirements on a PSAP-by-PSAP basis.¹ In that letter, a copy of which is being filed herewith, QUALCOMM stated that a PSAP-by-PSAP requirement would fail to recognize the capabilities of, and limitations inherent in, the currently deployed position location technology. This failure could lead to misleading conclusions about a carrier's compliance with the E911 mandate based on performance within any one of the nation's over 6,000 PSAPs, which could be an area of any

¹ QUALCOMM Ex Parte Letter (dated December 23, 2005).

particular size and one that is not representative of the environment in which the vast majority of E911 calls are placed and/or one that is especially challenging for a given location technology.² In particular, as QUALCOMM pointed out in its previous filing, a particular PSAP could be an entire state, a large county, a small county, a city, or a small town, representing a variety of technical challenges.

QUALCOMM further pointed out that changing the requirements that the position location technology has been designed to meet so that the accuracy requirements would have to be met on a PSAP-by-PSAP basis would be inherently arbitrary because of the inconsistency in the boundaries of PSAPs, the extremely small size of some PSAPs (such as those which encompass just one town), and the varied environments in the PSAPs.³ As a result, rather than adopting a new rule which current technology will not enable the carriers to meet, QUALCOMM urged the Commission to continue working with all affected stakeholders—technology vendors, wireless carriers, public safety organizations, and others to improve wireless E911 services.⁴

QUALCOMM's position has not changed since then. QUALCOMM continues to work on and implement enhancements and improvements to its AGPS technology to enable carriers to deliver greater accuracy.⁵ However, today and for the foreseeable future, current technology will not enable the carriers who use AGPS technology to meet the Phase II E911 accuracy rules on a PSAP-by-PSAP basis. QUALCOMM strongly believes, nevertheless, that enhancements and

² Id. at Pages 1-2.

³ Id. at Page 2.

⁴ Id.

⁵ Unfortunately, the recent decision of the U.S. International Trade Commission (“ITC”) will prevent many carriers from being able to sell new EV-DO or WCDMA phone models containing innovations in location technology. For this reason, QUALCOMM and various carriers and manufacturers have appealed the ITC’s decision, and, together with the nation’s public safety organizations, have asked that the President veto the decision.

improvements to AGPS and other technologies to improve E911 accuracy as much as possible and as quickly as possible should continue to be developed and deployed as broadly as possible. To impose a requirement which cannot be met and which cannot be legitimately enforced will not improve E911 accuracy. Rather, QUALCOMM urges the Commission to make engage all affected stakeholders—vendors, carriers, public safety organizations, and others—in a consensual process, under tight time frames, to develop measurable, achievable metrics, with deadlines that can be reached, to improve E911 accuracy as much as possible, as broadly as possible, and as quickly as possible. All of those groups can and should work together to improve E911 accuracy.

II. A PSAP-By-PSAP Requirement Would Be Inherently Arbitrary, Would Cause Misleading Results, and Cannot Be Met with Current Technology

As QUALCOMM explained in its December 23, 2005 ex parte letter, AGPS is the world's most accurate position location solution, and it produces highly accurate results that are consistent with the FCC's E911 mandate as it has existed for many years, when considering the range of environments and the distribution of emergency calls across those environments typically experienced by the carriers. Nevertheless, AGPS cannot today, nor in the foreseeable future, meet the E911 Phase II accuracy requirements in each and every PSAP on a PSAP-by-PSAP basis. QUALCOMM remains concerned that a PSAP-by-PSAP requirement could lead to misleading conclusions about a carrier's compliance with the E911 mandate based on performance within a particular PSAP. Since a particular PSAP could be an area of any size and have an environment that is far different from most of the country, where most wireless calls to 911 are placed, a failure to meet the requirements in such a PSAP would not be indicative of a carrier's performance in meeting the mandate generally across the country, in environments in which the vast majority of wireless calls to 911 are placed.

There can be no debate that it is vitally important that every person who requires assistance be located as quickly as possible, regardless of where they are when such assistance is required. E911 service must be as accurate as possible throughout the entire country. But, in deciding whether a given carrier is meeting the Commission's rules, QUALCOMM believes that evaluating performance within a particular PSAP, which may well pose extraordinary challenges to the technology, would not be indicative of the carrier's overall performance in delivering Phase II E911 service. Indeed, the Commission's rules recognize that position location technology does not guarantee a precise location for all callers in all locations 100 percent of the time. For the same reason, the Commission's rules have recognized that position location technology does not guarantee a precise location for all callers in all locations within the nation's 6,000 PSAPs, which include areas with such a large degree of variation in size and environment.

QUALCOMM is, and has been, aggressively working on developing enhancements and improvements to AGPS in order to meet the ultimate goal of determining the location of every wireless caller to 911 with a high degree of accuracy, regardless of environment, but none of the enhancements currently in the pipeline will make the dramatic changes that would be necessary to guarantee that the Phase II requirements will be met in each and every one of the 6,000 PSAPs, with their arbitrarily defined boundaries. Even within a given PSAP, there can be extreme variation of the environment. For example, a PSAP may encompass only one rural town, but metal or tin construction may be prevalent within the town. A caller who calls 911 within such a PSAP, which may be served by a single cell, from inside a warehouse, shed, or the like, may well be very difficult to locate even with AGPS technology, which, by and large, works extremely well in rural areas in more typical environments. There should be no dispute that the goal of the E911 mandate has been and should remain attaining the greatest degree of

E911 accuracy, but it must be tempered with the fact that E911 performance is going to vary based on the environment from which a call to 911 is placed. For that reason, the Commission's focus should be on driving the overall highest degree of accuracy across the range of environments and based on the typical distribution of emergency calls, rather than on requiring consistent performance across PSAPs, which are inconsistently defined in a manner that results in such a wide variation in size and environment.

Moreover, there is no hybrid position location technology that will ensure compliance with a PSAP-by-PSAP requirement . As the Commission noted, many CDMA carriers have already deployed advanced forward link triangulation (“AFLT”) in concert with AGPS. See NPRM at para. 11, n.18. Indeed, for many years now, QUALCOMM has supported numerous complementary location technologies in its product offerings. While these hybrid approaches can be highly beneficial to maximize yield, even employing currently available hybrid solutions will not guarantee that the Phase II accuracy requirements can be met in each and every PSAP not only because of the differences in size among the PSAPs, but also because within PSAPs, there are some challenging environments in which performance can be below the norm.⁶

Hybrid solutions are not a panacea. Some are no better than the non-GPS type solutions that have been used for years in concert with AGPS. Others have major barriers and even critical flaws that will limit their overall usefulness and the speed of their deployment. In sum, while there are some hybrid approaches that can improve performance, including those already

⁶ It should be noted that the Commission has separate accuracy requirements for handset-based and network-based solutions, but the requirements do not take account of the possibility that a consumer owns a phone with AGPS, which is deemed a handset-based solution, but calls 911 in a location in which a GPS fix is not available, so the hybrid solution, which is actually network-based, is employed to locate the caller. A call to 911 placed in that circumstance is judged under the accuracy requirements for handset-based solutions even though the position location solution that is actually used is network-based.

being used, it would be inaccurate to say that the accuracy requirements can be met on a PSAP-by-PSAP basis merely by the deployment of hybrid solutions.

Indeed, while the Commission has asked for comments on Section III.A of the NPRM first, it is difficult to separate the geographic area over which compliance is measured from the other issues raised in the NPRM, including: whether the Commission should adopt testing requirements; if so, what testing requirements the Commission should adopt; and, whether the Commission should adopt a single location accuracy standard. These issues are all inter-related and need to be addressed by the Commission in a comprehensive fashion.

For example, the Commission is seeking comment on whether to require that the carriers perform a certain level of indoor testing. Network-based position location solutions achieve approximately the same level of performance indoors as does AGPS, when used together with other technologies in hybrid mode. However, under current Commission rules, the accuracy requirements for network-based solutions are more lenient than those for handset-based solutions (such as AGPS). It would be highly unfair to declare that a network-based solution complies with the mandate in a given PSAP, but a handset-based solution does not, on the basis of indoor test results that are actually about the same. The Commission should not adopt either unattainable or unfair requirements.

III. The Commission Should Engage All Stakeholders to Develop Measurable, Attainable Metrics to Improve E911 Accuracy

As stated supra, rather than adopt a new PSAP-by-PSAP requirement that cannot be met now or for the foreseeable future, QUALCOMM believes that the Commission should engage all stakeholders (vendors, carriers, public safety organizations, and others) in a consensual process to develop measurable, attainable metrics to improve E911 accuracy as much as possible, as broadly as possible, and as quickly as possible. This process should be one last good faith effort,

on a quick timetable and with active involvement of the Commission, before the Commission decides how to resolve the instant proceeding. QUALCOMM is well aware of past efforts, under the auspices of ESIF and NRIC, but the stakes are too high not to try again. The best solutions to improve E911 accuracy, by far, will be those that are developed by the affected parties themselves.

Indeed, E911 accuracy will not be improved if the Commission simply adopts a requirement that cannot be met and defers enforcing the requirement. Rather, it would be far better for the public for the Commission to adopt a set of benchmarks for the improvement of E911 accuracy that can be and will be met. The American public deserves no less.

IV. Conclusion

Wherefore, QUALCOMM respectfully requests that rather than changing its rules to require that the Phase II E911 rules be met on a PSAP-by-PSAP basis, the Commission convene a consensual process among all stakeholders involved in wireless E911 (vendors, carriers, public safety organizations, and others) to develop a series of measurable, attainable benchmarks to improve E911 accuracy.

Respectfully submitted,

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