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

AUG 31 2001

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In The Matter Of)

Revision of the Commission's)
Rules to Ensure Compatibility with)
Enhanced 911 Emergency Calling Systems)

CC Docket No. 94-102

**REPLY COMMENTS OF QUALCOMM INCORPORATED IN SUPPORT OF
REQUEST OF VERIZON WIRELESS FOR LIMITED WAIVER**

QUALCOMM Incorporated ("QUALCOMM") hereby replies in support of the request of Verizon Wireless for a limited waiver of the deadlines for deployment of Phase II E9-1-1 service so that it can deploy a network-assisted Global Positioning System/Advanced Forward Link Trilateration ("AGPS/AFLT") solution on a schedule based upon the availability of switch and cell software releases from its infrastructure vendors and of compliant handsets from its handset vendors. In particular, QUALCOMM responds herein to the comments filed by APCO, NENA, and NASNA regarding Verizon's request for a limited waiver.

I. Verizon Should Not Be Faulted for Its Choice of Technology Because Verizon Will Meet the Commission's Accuracy Rules for Handset Solutions and the Technology Chosen By Verizon Uses Handset and Network Components

The APCO/NENA/NASNA Comments fail even to mention that Verizon, unlike carriers such as AT&T and Cingular, has not sought any waiver of the Commission's accuracy rules. This omission is remarkable. Verizon, the nation's largest wireless carrier, is committed to implementing a location technology which will produce the highest levels of accuracy possible, a solution which will give the police and other public safety officials the degree of accuracy they can use to save lives. That has been the goal of the Commission and the public safety

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community for many years. It is thus surprising, unfair, and downright wrong that the APCO/NENA/NASNA Comments criticize Verizon's choice of technology and ask the Commission to seek additional information on this point. See APCO/NENA/NASNA Comments at Pg. 3. Verizon deserves praise, not criticism, from the public safety community for choosing a technology that complies with, and indeed exceeds, the Commission's accuracy rules for handset solutions, rules which are significantly more stringent than those for network solutions.

In fact, APCO, NENA, and NASNA say that they are "disappointed" that Verizon has decided not to deploy a network solution in all but three markets without even noting that Verizon has instead decided to deploy a more accurate and reliable hybrid solution. APCO/NENA/NASNA Comments at Pg. 3. It is unclear why public safety organizations would be disappointed by this decision or ask the Commission to scrutinize it. Verizon has opted for a solution that will enable the police to get much more accurate information to locate wireless 911 callers than they would have received from the pure network solution Verizon originally chose. There is no basis whatsoever for the Commission to question or second guess Verizon's choice of a more accurate technology; this choice will substantially enhance public safety.

The "disappointment" expressed by APCO, NENA, and NASNA apparently stems from an unfortunate misunderstanding of the technology chosen by Verizon. In their Comments, APCO, NENA, and NASNA fault Verizon's technology choice because they "would prefer that carriers have multiple options available for meeting the Phase II requirements, including both network and handset-based technologies." APCO/NENA/NASNA Comments at Pg. 3. However, the AGPS/AFLT technology which Verizon has chosen, and which QUALCOMM developed, depends on ranging measurements taken by the handset both from the network

(AFLT) and the GPS satellites (AGPS). Thus, there is a network component to the AGPS/AFLT hybrid technology which Verizon will deploy. To locate a wireless caller using QUALCOMM's AGPS/AFLT technology, these ranging measurements taken by the handset from both the network and the GPS satellites, where possible, are synthesized to determine the caller's precise location. This technique is manifestly more accurate and produces greater integrity than simply relying only on the measurements from the network or the GPS satellites alone. However, if the GPS satellite signal is unavailable for any reason, the caller's location will still be determined through the network component, although unlike pure network solutions, the measurement is taken in the handset not the network.

Thus, Verizon has opted for a hybrid solution which combines network and GPS satellite technologies and which meets or exceeds the Commission's accuracy requirements for handset solutions. Accordingly, it is simply mistaken to fault Verizon for not implementing "a more substantial mix of technologies" or to express concern over a carrier's "limited options" when opting for AGPS/AFLT.¹ But see APCO/NENA/NASNA Comments at Pg. 3. The hybrid

¹The statement in AT&T's Comments that "there is a direct relationship between accuracy performance, channel width, and the air interface in question, *i.e.*, more accurate results can be obtained on a CDMA system with 1,200 kilohertz channels than on systems using narrower channels like TDMA (20 kilohertz)" is misleading. AT&T Comments at Pg. 1. Higher bandwidth (channel size) has nothing to do with the accuracy of assisted GPS; AT&T could deploy assisted GPS using technology developed by QUALCOMM and achieve results which would be much more accurate than produced by MNLS. Higher bandwidth can produce greater resolution, but not greater accuracy. The testing by QUALCOMM and its SnapTrack subsidiary has proven that assisted GPS works on the PDC air interface at levels of accuracy which meet the FCC's mandate and far exceed the levels produced by MNLS, even though PDC, like TDMA, has narrow channels. Ironically, this testing, and the later deployment of assisted GPS on PDC, occurred over the PDC cellular system operated by DoCoMo, AT&T's major equity investor and strategic partner. The Commission should reject AT&T's request for a waiver of the accuracy rules to deploy deficient technologies rather than assisted GPS or some other compliant technology, as opposed to Verizon which is complying with the accuracy rules.

AGPS/AFLT solution will allow Verizon to attain the highest degrees of accuracy and reliability, a result which is only possible by combining the best features of both network and GPS satellite technologies in a handset. Verizon is implementing a substantial mix of technologies, and Verizon will not have limited options to obtain location information.

Moreover, the Commission should not scrutinize Verizon's waiver request based upon a totally unsubstantiated fear that AGPS/AFLT technology "will fail to meet (anyone's) stated goals and expectations." Id. The record of this proceeding establishes that QUALCOMM's AGPS/AFLT technology has been thoroughly tested in the United States and around the world over the past several years and consistently produces accuracy in excess of the Commission's rules. See, e.g., QUALCOMM Ex Parte Filing of August 13, 2001. The technology has already been deployed quite successfully in Japan since April 2001 over KDDI's cellular network. Id. See also QUALCOMM's Ex Parte Filing of April 25, 2001. In short, the record demonstrates that this technology is reliable and will work well to improve the public's safety by a large measure. The Commission should not deny, or delay a grant of, Verizon's waiver request because of its choice of this highly beneficial technology.

II. There Is No Valid Reason to Deny Verizon's Waiver Request

There is no valid reason to deny Verizon's limited waiver request. APCO, NENA, and NASNA ask in their Comments whether the delivery dates provided to Verizon by handset and switch vendors can be accelerated. APCO/NENA/NASNA Comments at Pg. 4. However, Motorola's Comments establish that if Verizon selects a SignalSoft Mobile Positioning Center ("MPC") and a SnapTrack Position Determining Entity ("PDE"), the date for deployment with general availability of a complete release of switch software will be in the Second Quarter of

2002, rather than November 2002 as stated in Verizon's limited waiver request. Compare Motorola Comments at Pgs. 4-5 with Verizon Limited Waiver Request at Pg. 15.

The SnapTrack PDE and SignalSoft MPC will work well over Verizon's network, and should Verizon deploy them, the resulting acceleration of the deployment schedule should enable Verizon to complete national deployment in Motorola markets well in advance of the 3/1/03 date in Verizon's limited waiver request. Verizon Limited Waiver Request at Pg. 15. Accordingly, the concern expressed in the APCO/NENA/NASNA Comments about the delay in completing deployment in Motorola markets and any heightened need for an interim solution in those markets can be substantially ameliorated. See APCO/NENA/NASNA Comments at Pgs. 2, 5.

Similarly, APCO, NENA, and NASNA demand that Verizon deploy "a reliable and accurate" interim solution until December 31, 2003, when it will no longer sell non-location capable phones. APCO/NENA/NASNA Comments at Pg. 6. The Commission's rules do not require any such interim solution, and since any such solution would have accuracy that would be substantially inferior to that produced by the AGPS/AFLT solution chosen by Verizon, it is apparent that the public would benefit more if Verizon devoted its resources to working with its vendors to accomplish the deployment of AFLT/AGPS as quickly as possible. Nevertheless, Verizon has committed to deploying an interim solution (EFLT) if testing proves to be successful where such a solution is available to serve millions of people. It is laudable that Verizon would make such a commitment, and this is surely no ground for denial of its waiver request.

Finally, Verizon said in its waiver request that it would deploy network upgrades in all of its markets "irrespective of receiving a PSAP's request" and it "is committing to deployment of Phase II technology in its network in advance of many PSAPs' own capability to do so." Verizon Waiver Request at Pg. 5. On the one hand, APCO, NENA, and NASNA seek

clarification on this point. APCO/NENA/NASNA Comments at Pg. 6. On the other hand, they say that this approach “may have considerable merit.” Id. Yet, they go on to say that other carriers “should consider similar approaches in their Phase II deployment, whether or not they receive waivers from the Commission.” Id. It is not clear what clarification is needed.

Verizon’s approach will mean that there will not be any disputes over whether a PSAP’s request is valid and will only speed the deployment of Phase II service. This approach does have considerable merit and, together with all of the other facts and circumstances, supports grant of Verizon’s limited waiver request.

QUALCOMM has no interest in any delay in the deployment of its AGPS/AFLT technology and will certainly take all steps at its disposal to speed such deployment. Verizon is on a clear path to deploy this highly worthwhile technology. The Commission should grant Verizon’s modest, limited waiver, which is necessary due to circumstances beyond Verizon’s control, so that Verizon can focus all of its resources on bringing this valuable new safety service to the public as quickly as possible.

III. Conclusion

Wherefore, for the foregoing reasons, QUALCOMM respectfully requests that the Commission grant Verizon's request for a limited waiver.

Respectfully submitted,

By:  _____

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Dated: August 31, 2001

CERTIFICATE OF SERVICE

I, Dean R. Brenner, do hereby certify that a true and correct copy of the foregoing "Reply Comments of QUALCOMM Incorporated in Support of Verizon Wireless' Request for Limited Waiver" was served by mail this 31st day of August 2001 to:

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