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VIA FEDERAL EXPRESS

Secretary
Federal Communications Commission
445 - 12th Street S.W. TW-A325
Washington, D.C. 20554

Re: CC Docket 94-102

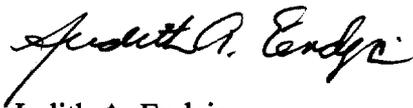
Dear Secretary:

Enclosed please find for filing and original and 4 copies of the Comments of United States Cellular Corporation on Phase I E911 Implementation Issues Pursuant to DA 00-1875. We are enclosing an additional copy and self-addressed, stamped envelope. We would appreciate it if you would return this copy to us with an indication the document has been filed.

Please contact me at (206) 233-2998 if you have any questions or comments. Thank you.

Very truly yours,

WILLIAMS, KASTNER & GIBBS PLLC



Judith A. Endejan

END:ks
Enclosures

cc: E. Wendy Austrie, FCC (w/encl.)
Mary Davis, U.S. Cellular (w/encl.)
Jim Young, Sidley & Austin (w/encl.)

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BEFORE THE FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of:

Revision of the Commission Rules to Ensure
Compatibility With Enhanced 911 Emergency
Calling Systems

CC DOCKET 94-102

COMMENTS OF UNITED STATES
CELLULAR CORPORATION ON PHASE I
E911 IMPLEMENTATION ISSUES
PURSUANT TO DA 00-1875

I. INTRODUCTION

On August 16, 2000 in DA 00-1875 the Wireless Telecommunications Bureau of the Federal Communications Commission ("FCC") requested public comment on a request filed by the King County Washington E911 program office in order to resolve a conflict related to the implementation of Wireless Phase I enhanced 911 ("E911") service in the State of Washington. At issue is whether wireless carriers such as United States Cellular Corporation ("USCC") must bear the cost of the network link and network interface between the mobile phone switching center ("MSC") and the E911 selective router paid for by Public Safety Answering Points ("PSAPs"). The Commission in its Second Memorandum Opinion and Order in this docket, released on December 8, 1999¹ did not answer that question, when it concluded that a wireless carrier's obligation to provide E911 service would only be contingent upon receipt of a valid request from a PSAP that "is capable of receiving and utilizing the data elements associated with the service." (Par. 6). In the Second Memorandum Opinion and Order the FCC eliminated the prior prerequisite that a cost recovery mechanism be in place before a wireless carrier would be

¹ Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems. CC Docket No. 94-102, 14 FCC Rcd. 20850 (1999).

obligated to provide E911 service. USCC strongly opposed, and continues to oppose² this elimination.

The questions raised by the King County request could be anticipated from the Commission's decision to eliminate the carrier cost recovery requirement, while retaining the PSAP cost recovery requirement. What would not have been an issue in the period when the full cost recovery requirement was in place has now become one. It is now necessary to determine with specificity those costs which must be borne by wireless carriers because in many jurisdictions, like Washington, no state carrier cost recovery mechanism is in place.

Wireless carriers need to insure that their customers will pay only those E911 costs necessary to the inclusion of wireless E911 calls in the existing E911 system. This means that a wireless carrier need only provide, at its cost, the necessary data from a wireless E911 caller to its mobile switching center ("MSC") for hand-off to the local exchange company ("LEC") network purchase. This does not mean that a wireless carrier should absorb the network costs associated with transporting the wireless E911 data to a PSAP.

USCC welcomes the Commission's assistance in resolving the narrow issue raised by King County. In USCC's view, the Commission in the Second Memorandum Opinion and Order intended to evenly divide the cost responsibility for implementing wireless E911, or it would not have retained the PSAP cost recovery requirement. The Commission appropriately placed cost responsibility on PSAPs for the LEC-related network, which PSAPs have always paid for. Accordingly, PSAPs should pay for the network links and network interface which transports the wireless E911 call from the point of demarcation at the MSC to the E911 selective router. In order "to receive and utilize" the wireless E911 data elements, PSAPs must have in place the necessary trunks to transport wireless E911 calls from the carrier switch to the E911 selective router and ultimately to the PSAP. As discussed below, requiring PSAPs to pay for

² See United States Cellular Corporation v. Federal Communications Commission (Docket No. 00-1072 D.C. Circuit) (matter currently held in abeyance).

these costs would be consistent with the Second Memorandum and Order, and with wireline precedent.

II. COMMENTS

A. The Appropriate Demarcation Point for Cost Division is the MSC.

To comply with its Phase I E911 obligations, USCC has contracted with a national vendor, XYPOINT Corporation, to extract necessary data elements from a wireless E911 call, which is then sent back to the MSC which originated the call. Thus, USCC delivers the necessary E911 data to the demarcation point located at the servicing MSC.

This point serves as the appropriate cost separation point, after which PSAPs should absorb network-related costs. PSAPs should bear the responsibility for the LEC trunking and other costs PSAPs pay to LECs to then deliver the data elements to the PSAP point of interconnection.

Placing post-demarcation cost responsibility on PSAPs is consistent with both the E911 First Report and Order³ and the Second Memorandum Opinion and Order. In the First Report and Order, the Commission was concerned about removing the technical problems associated with wireless E911 calls, which was essentially a database problem. Existing E911 systems could access fixed location data in ALI systems for wireline calls but could not extract call-back or location information for wireless E911 calls. As a result of the First Report and Order, wireless carriers implemented technological solutions to fix this database problem. They can now make available the data to the existing E911 network to handle wireless E911 calls with call-back and certain location information.

Under the Second Memorandum Opinion and Order, wireless carriers must pay for the costs associated with extracting the data elements and providing the data to the existing LEC

³ Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, RM-8143, Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 18676 (1996), adopting amendments to Section 20.3 and new Section 20.18 in the Commission's Rules, 47 C.F.R. § § 20.3, 20.18 (*E911 First Report and Order and E911 Second NPRM*).

network. Thereafter, they should not have to pay for transporting the data to the PSAP for several reasons.

First, the trunks, or transport facilities are LEC-provided, for which LECs charge pursuant to tariff or special contract.⁴ These are not wireless facilities. Wireless providers should not have to pay wireline LEC providers for E911 services for which wireless providers cannot be compensated.

Second, as discussed in Section II. B, the solution proposed by USCC, and most of the wireless industry, can be used in conjunction with the existing 911 LEC network. This is not a situation where a USCC technological choice would require new and expensive adaptations to the existing LEC network. Rather, the addition of wireless E911 calls would no more require changes to the network than increased wireline E911 calls. If PSAPs pay for additional trunking to handle wireline call increases, they should do so to handle wireless calls as well.

Third, PSAPs receive cost recovery for purchasing network services from LECs and wireless carriers do not. This fact should be considered by the Commission⁵ when allocating cost responsibility.

The FCC did not delete the cost recovery rule entirely in the Second Memorandum Opinion and Order and squarely placed financial responsibility for new, additional costs associated with receiving wireless E911 calls upon PSAPs, including additional network services. The FCC expects states to fund their PSAPs to cover any additional PSAP requirements. The FCC stated at Par. 66 of the Order:

Without adequate funding, PSAPs may not be able to finance expenditures required to upgrade their hardware or software capabilities to review and use Phase I and Phase II information, as well to finance recurring costs that may be associated with the additional network services. (Emphasis supplied).

⁴ In some jurisdictions with cost recovery, wireless carriers may have reached an understanding with PSAPs whereby the carriers ordered the LEC trunks, but would be reimbursed from state funding. This does not mean that the wireless industry agrees that these costs are properly assigned to them. Where cost recovery exists such assignment is not dispositive.

⁵ See Par. 7, Second Memorandum Opinion and Order.

This is particularly true if a more expensive technological solution is chosen, as discussed in Section II. B. The trunks and selective routers required for wireless E911 may, or may need to be updated, depending upon the choice of a technological solution. In any event, the Order anticipated that if such costs were to be incurred, then PSAPs would have to pay them. This conclusion comports with how PSAPs have historically paid for 911 services. It also represents a reasonable and responsible division of cost responsibility between wireless carriers and PSAPs, particularly when the solution chosen by USCC (NCAS) can be used without changing the protocol of the existing LEC network.

B. The Technological Choice Should Not Change the PSAPs Cost Responsibility for the Network.

Attachment A demonstrates how a traditional wireline 911 call travels. Calls are routed to a PSAPs selective router⁶ from a LECs end office or access tandem. Typically these calls are transported over a CAMA trunk.⁷ CAMA trunks can only transport eight digits through the network which is a combination of the wireline caller's seven digit phone number with one digit added at the beginning of the phone number to indicate area code. Unless upgraded, selective routing equipment in the E911 network will only support CAMA signaling.

CAMA trunks can be used for wireless E911 purposes, depending upon the technology chosen by the vendor. Two basic options exist. The first one, non-call path associated signaling ("NCAS") allows for use of CAMA trunks, and is the solution chosen by USCC. An NCAS solution has become the de facto standard for wireless E911, as it is chosen by most wireless carriers. It is illustrated on Attachment 2, which diagrams a wireless E911 call using NCAS technology, provided in this case by USCC's vendor, XYPOINT Corporation.

⁶ A selective router is a feature offered by a LEC that permits a 911 call to be routed to the designated primary PSAP based upon the identified telephone number of the calling party for wireline calls, or based upon a number assigned by a wireless provider's E911 vendor which identifies cell sites or sectors of a cell site to allow the 911 call routing process to have a telephone number and a "location to route" in order to use the wireline telephone 911 network when processing and routing wireless 911 calls.

⁷ CAMA is a particular LEC trunk originally used for cost and message accounting call information but now used extensively for 911 purposes.

With a NCAS solution the voice and data from a wireless E911 call are split at the MSC. The MSC forwards the caller's phone number and a ten-digit cell sector number through a signaling system 7 ("SS7") network to a sophisticated computer called the service control point ("SCP"). The SCP assigns an eight-digit number to the call which serves as a routing device to deliver the call to the most appropriate PSAP. The routing digits are then sent from the SCP back to the MSC where they are joined with the caller's voice and forwarded to the PSAP through the existing E911 wireline network. The digits used for routing have been pre-provisioned to facilitate routing through the existing selective router. Meanwhile, the SCP updates the E911 database with the caller's phone number, and cell site/sector location information. When the voice and the routing digits reach the PSAP, the E911 equipment queries the E911 database. The caller's information is retrieved from the E911 database by matching the routing digits. The voice, the caller's phone number and cell sector location then arrives at the PSAP.

Attachment 2 illustrates two things. First it identifies the additional E911 facilities which USCC will provide to obtain the data needed for Phase I wireless E911, for which no cost recovery exists in Washington. Second, it shows that the wireless E911 call travels to the selective router from the wireless switch just like wireline E911 calls travel from a wireline switch to the selective router.

The second technological option is call associated signaling ("CAS"). CAS differs from NCAS in that a wireless E911 call is not split into voice and data at the MSC. With CAS technology, the voice, the caller's phone number, and the cell sector identifier arrives simultaneously at the PSAP. A CAS solution must be provided or supported by a LEC because CAS transfers 20 digits (the caller's phone number and the 10 digit cell sector number) over a special trunk line from the MSC to the existing LEC E911 network. Choice of a CAS solution means that CAMA trunks cannot be used, but other types capable of transmitting 20 digits must be used (i.e. FGD). In addition, CAS requires LECs to upgrade existing selective routers or to

add special equipment to the selective router to convert 20 digits to 8 digits. A CAS solution would also require upgrades to the PSAP equipment and to the signaling from the selective router to the PSAP.

PSAPs should absorb the cost of the network whether - CAMA or FGD - which connects the MSC to the selective router. The technology at issue (NCAS vs. CAS) does not change this cost responsibility because trunking from the MSC to the selective router is a necessary and fundamental facility for PSAPs to "receive" information from E911 calls. Certainly, where NCAS is used, and no alteration to the existing LEC E911 network is required, PSAPs must continue to pay for this E911 network.

C. PSAPs Have Always Paid LECs For the Wireline Facilities Used For Wireline 911.

In the Public Notice the Commission asked if the implementation of the wireline E911 network provided any rationale or precedent for the division of costs among carriers and PSAPs in the implementation of wireless Phase I technologies. The precedent set for wireline E911 is that PSAPs pay LECs for the costs of providing that service. These costs include necessary trunk or transport costs. The Second Memorandum Opinion and Order recognizes this precedent. (Par. 94). Typically, PSAPs purchase E911 service from LECs tariffs, or through special contracts. (See i.e. Qwest Corporation Washington State 911 Tariff, WN U-40. Exchange and Network Services, Section 9.1 "Emergency Reporting Service" available at <http://tariffs.USWEST.com>.)

Thus, if anything, past wireline precedent imposes E911 network costs upon PSAPs who pay with revenues derived from E911 taxes, surcharges or general tax revenues.⁸

⁸ In Washington, PSAPs receive funding for wireline E911 from three sources. Counties may assess wireline subscribers up to a fifty cent county E911 tax. RCW 82.14B.030(1). In addition, wireline subscribers are assessed a twenty cent state tax under RCW 82.14B.030(3). A significant portion of these funds is used to pay LECs for the E911 service, including the trunk costs associated with transporting wireline E911 calls from a wireline switch to the PSAP. According to a December 1998 report submitted to the Washington Legislature by the Washington Department of Revenue ("DOR"), PSAPs pay "the wireline industry approximately twenty-four cents out of the fifty cents assessed by counties for an E911 tax." DOR Report, p.I-5. This report was directed by the 1998 Washington

If anything, wireline precedent forces the conclusion that PSAPs must, at the very least, pay the network costs associated with transporting the E911 call from the wireless switch to the selective router through to the PSAP. No reason exists to assign these LEC network costs to wireless carriers now as part of their Phase I obligations. PSAPs, such as in King County, Washington PSAPs, have a cost recovery mechanism available to them for this purpose.⁹ Nothing in the King County request indicates that its current funding would not cover the network-related costs of transporting the wireless E911 data from the MSC to the PSAP.

In sum, network-related wireless E911 implementation costs, should be borne by the PSAPs, who should receive funding from taxes or fees imposed on a competitively neutral basis. Neither LECs nor wireless carriers should be forced to shoulder the network costs associated with the implementation of wireless E911. The Second Memorandum Opinion and Order envisioned that PSAPs would also incur additional costs to implement wireless E911 and created a legislative incentive to fund PSAP needs by establishing the PSAP cost recovery requirement.

The goal of this docket is to promote the rapid deployment of wireless E911 to achieve desired public safety benefits. USCC supports this goal and its position does not inhibit it. USCC stands ready to deliver the required E911 data to the PSAP to move forward with E911 implementation. It will not, however, voluntarily assume payments to wireline providers for the network and network-related interface.

Wireline providers and their customers do not bear these costs. Wireless providers and their customers should not either.

III. CONCLUSION

The King County request seeks clarification of PSAP cost responsibility under the Second Memorandum Opinion and Order. In jurisdictions where both wireline and wireless

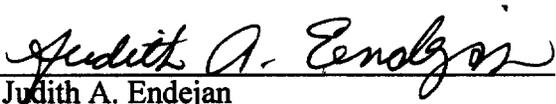
Legislature which charged the DOR with the task of studying how to fund wireless E911. This DOR report recommended a new tax as the most stable funding mechanism for wireless E911.

⁹ Wireless customers in Washington pay twenty five cents per month, which is used to defray PSAP costs. See RCW 82.14B.030(2).

providers are compensated for providing E911 this issue is not as pressing as in states, like Washington, where no cost recovery is allowed. USCC urges the Commission to clarify this Order to require PSAPs to pay for the network costs incurred to transport the E911 call from a demarcation point at a wireless carrier's switch, including the path to, and through, the selective router. PSAPs pay such costs today for wireline E911. Fairness requires them to pay these costs for wireless E911.

DATED this 15th day of September, 2000.

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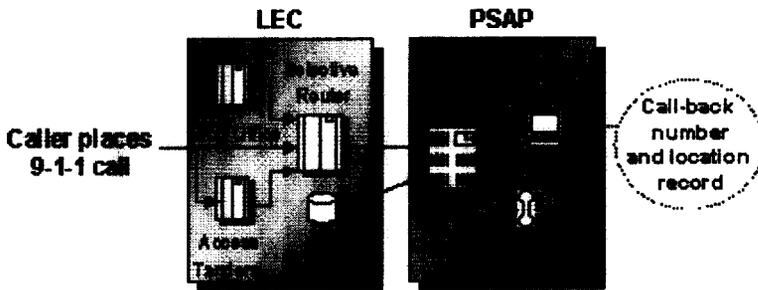


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How Traditional 9-1-1 Works

To see how the XYPOINT LENS architecture works for W E9-1-1, we will first look at the traditional wireline environment and how calls flow without XYPOINT involvement.

The wireline network can easily provide a call-back number and address to a 9-1-1 operator, because wireline numbers are tied to a fixed location and data can easily be stored and accessed in telecommunications databases. The following figure shows this call flow:



Traditional Wireline 9-1-1

[See animation!](#)

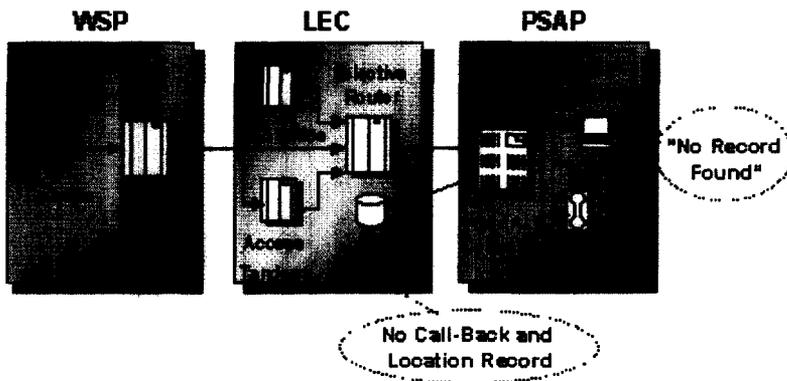
1. The caller places a wireline 9-1-1 call.
2. The LEC receives it and routes it via an end office, access tandem and/or selective router to the PSAP.
3. The PSAP receives the call and queries the LEC's Automatic Location Identification (ALI) database for the call-back number and location information.
4. The LEC receives the query and delivers the appropriate data.



- The data appears on the PSAP operator's screen.

The Wireless Challenge...

With wireless networks, however, there are no fixed locations in the traditional sense, therefore, no call-back and location records residing in the ALI databases. When a PSAP launches a query on a wireless call, the ALI database will return a "No Record Found" message.



Wireless 9-1-1 in Traditional Environment

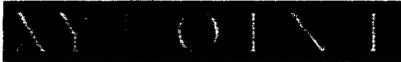
[See animation!](#)



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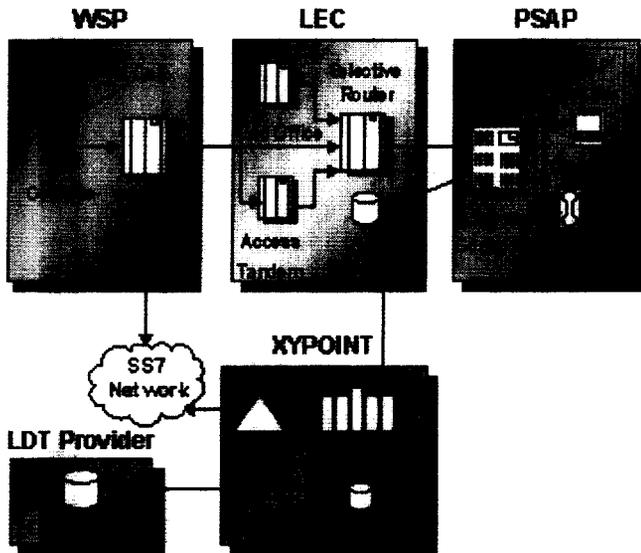


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How XYPOINT Precise Location Services Work

For future W E9-1-1 requirements, XYPOINT will support an additional interface within its LENS architecture. This interface will connect to Location Determination Technology (LDT) providers, to retrieve precise coordinates for the caller's location.

The following figure shows the Precise Location Services call flow:



Precise Location Services Call Flow

[See Animation!](#)

1. The caller places an emergency call.
2. The WSP receives it and launches a query to XYPOINT for call routing information.



3. XYPOINT extracts the call-back number and cell site location from the query.
4. XYPOINT launches a query to the LDT provider for corresponding location coordinates.
5. The LDT provider returns the coordinates.
6. XYPOINT converts the coordinates to a street address (or range of street addresses, such as the 200th block of Main) and stages the call-back and location record.
7. XYPOINT formats and sends call routing information to the WSP.
8. The call completes as normal, routing through the LEC to the PSAP, which launches the query for call-back and location information, and ultimately sees the record on the operator's screen (with street address detail).


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