BEFORE THE

Federal Communications Commission

WASHINGTON, D.C.

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In the Matter of	)	
	)	
IP-Enabled Services	)	WC Docket No. 04-36
	)	

COMMENTS IN SUPPORT OF PETITION FOR RECONSIDERATION/CLARIFICATION AND/OR WAIVER BY COMPTEL

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COMMENTS IN SUPPORT OF PETITION FOR RECONSIDERATION/CLARIFICATION AND/OR WAIVER BY COMPTEL

Time Warner Telecom, Inc. ("Time Warner") hereby files these comments in support of CompTel's Petition for Reconsideration/Clarification and/or Waiver of the Commission's Rules ("CompTel Petition") imposing E911 requirements on interconnected VoIP services providers as set forth in 47 C.F.R. § 9.5 and the recent *VoIP E911 Order*.[1]

I. INTRODUCTION

The customer notification and warning requirements set forth in § 9.5(e) of the Commission's Rules should not apply to VoIP T1-based business services where the risk of E911 failure is indistinguishable for such IP-based services and similar circuit-switched services. CompTel Petition, at 1. Moreover, the reasons that justify exempting VoIP T1-based business service from the customer notification and warning requirements lead ineluctably to the conclusion that no other aspect of the rules established in the *VoIP E911 Order* should apply to these services.

[1] *IP-Enabled Services, E911 Requirements for IP-Enabled Service Providers*, First Report & Order and Notice of Proposed Rulemaking, 20 FCC Rcd 10245 (2005) ("*VoIP E911 Order*").

II. DISCUSSION

In defining the category of VoIP service providers to which the *VoIP E911 Order* requirements apply, the Commission, apparently unintentionally, cast its net too broadly and included among the services that are arguably subject to the new E911 rules the VoIP services provided to business subscribers provided over T1 transmission facilities. These services compete with and offer functionalities similar to circuit-switched T1-based business voice services. More importantly, these services offer customers the same access to E911 as circuit-switched T1-based services, to which the rules adopted in the *VoIP E911 Order* do not apply and which, in most cases, the FCC has declined even to regulate for purposes of E911. Accordingly, the Commission should either waive application of the rules adopted in the *VoIP E911 Order* for T1-based VoIP business services or reconsider or clarify the *VoIP E911 Order* itself to exclude T1-based services from its coverage.

In the *VoIP E911 Order*, the Commission stated that the new E911 requirements apply to "interconnected VoIP services." *VoIP E911 Order* ¶¶ 23-25. The Commission has defined "interconnected VoIP service" as a service that (1) enables real-time, two-way voice communications; (2) requires a broadband connection from the user's location; (3) requires IP-compatible [customer premises equipment (]CPE[)]; and (4) permits users to receive calls that originate on the PSTN and terminate calls to the PSTN." *Id.* On its face, this definition arguably includes VoIP business services provided over T1 facilities, including VoIP services for customers that operate multi-line systems, which comprise the bulk of VoIP T1-based business services.

Nor does the definition of "IP-compatible CPE" yield the conclusion that VoIP T1-based business services fall outside the scope of the *VoIP E911 Order*. That term refers to "end-user equipment that processes, receives, or transmits IP packets." *Id.* at n.77. By example, the *VoIP*

E911 Order cited the *Vonage Order*[2] and the *Pulver Order*,[3] stating that "IP-compatible CPE includes, but is not limited to, (1) terminal adapters, which contain an IP digital signal processing unit that performs digital-to-audio and audio-to-digital conversion and have a standard telephone jack connection for connecting to a conventional analog telephone; (2) a native IP telephone; or (3) a personal computer with a microphone and speakers, and software to perform the conversion (softphone)." *Id.* Although this list of equipment focuses primarily on mass market consumer CPE, such as the IP phones provided by Vonage, the Commission did not clearly exclude VoIP transmission services offered to users of IP-MLTS equipment.

The Commission did attempt to exempt MLTS from the scope of the *VoIP E911 Order* at least to some degree. Unfortunately, it did so in a manner that arguably exempts manufacturers but not transmission service providers. Specifically, the Commission stated in a footnote that the "rules we adopt today apply to interconnected VoIP services rather than the sale or use of IP-compatible CPE, such as an IP-PBX, that itself uses other telecommunications services or VoIP services to terminate traffic to and receive traffic from the PSTN. The rules we adopt in today's Order also apply only to providers that offer a single service that provides the functionality described above." *Id.* n.78. This footnote could be read to exclude the manufacturer's sale of an IP-PBX station that cannot support E911 from the scope of the *VoIP E911 Order*, but it does not clearly exempt carriers providing VoIP services to the IP-PBX users.

The Commission should now exempt all T1-based VoIP services, especially those serving MLTS users, from the rules established in the *VoIP E911 Order*. This is so for four

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[2] *Vonage Holdings Corporation Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*, Memorandum Opinion and Order, 19 FCC Rcd 22404 (2004) ("*Vonage Order*").

[3] *Petition for Declaratory Ruling That Pulver.com's Free World Dialup Is Neither Telecommunications Nor a Telecommunications Service*, Memorandum Opinion and Order, 19 FCC Rcd 3307 (2004) ("*Pulver Order*").

basic reasons. *First*, the Commission has established a general policy that customer expectations should strongly influence the extent to which E911 requirements apply.[4] Where an IP-based service is functionally equivalent to a circuit-switched service, customer expectations regarding E911 for the two services are likely to be similar. Conversely, where an IP-based service is functionally different from a circuit-switched service, customer expectations regarding E911 are likely to be different. As the Commission has explained, "[S]ome IP-enabled services resemble traditional wireline telephony, while others do to a lesser degree. These functional differences likely shape end users' expectations regarding the service." *IP-Enabled Services NPRM* ¶ 37. The Commission's general policy has been to apply similar E911 requirements to IP services that deliver service with equivalent functionality to circuit-switched services.

The functionalities of VoIP T1-based business services closely resemble those of circuit-switched business service. For example, VoIP MLTS and circuit-switched MLTS offer similar features, such as interoffice communication, extension dialing, and enhanced voice mail capabilities. Installation and administration of both VoIP MLTS and circuit-switched MLTS require trained personnel. Trade press and industry marketing materials indicate that VoIP business services compete in the same market with circuit-switched business services, suggesting that VoIP MLTS and circuit-switched MLTS may be substitutes for one another.[5]

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[4] *Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems, et al.*, Report & Order and Second Further Notice of Rulemaking, 18 FCC Rcd 25360 ¶ 18 (2003) ("*E911 Scope Order*") ("We proposed analyzing each service based on whether: 1) it offers real-time, two-way voice service that is interconnected to the public switched network on either a stand-alone basis or packaged with other telecommunications services; 2) the customers using the service or device have a reasonable expectation of access to 911 and E911 services; 3) the service competes with traditional CMRS or wireline local exchange service; and 4) it is technically and operationally feasible for the service or device to support E911.").

[5] *See, e.g.,* "IP-PBX Takes Digital Networking One Step Further," 3Com Convergence Applications *at* http://www.3com.com/voip/ip-pbx.html (last accessed Sep. 15, 2005) ("For the

Also, the risk of E911 failure is the same for IP and circuit-switched T1-type services. Neither circuit-switched nor VoIP service providers can control or track changes in the location of individual MLTS end-user stations, since in both cases the service providers merely provide the trunking solution for businesses that use MLTS equipment. Nor can either type of service provider track the method by which end-user stations are connected or configured by customer PBX administrators. As the Commission has stated, E911 solutions are technically feasible for MLTS, but they require positive action from the customer PBX administrator. Individual customer station locations must be registered with the PSAP, and Automatic Number Information (ANI) can be passed only so long as the customer's PBX equipment is capable of sending individual CPN detail. In the event of network outages, such as those specifically mentioned in 47 C.F.R. § 9.5(e), E911 is unavailable despite the efforts of a carrier or a VoIP business services provider. Attachment A provides a list of such scenarios and clearly shows that the limitations are not specific to VoIP MLTS. Rather, these limitations are endemic to any provision of MLTS.

Accordingly, there is every reason to believe that customers purchasing circuit-switched and VoIP MLTS transmission services, or for that matter all other circuit-switched and VoIP T1-based services, have similar expectations regarding the level of E911 access that these services

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first time, new IP-PBX shipments exceed traditional PBX shipments. The trend represented by this shipment data can be traced to IP-PBX architecture that allows businesses to reduce infrastructure cost while improving productivity."); Sean Michael Kerner, "IP PBX and Carrier VoIP Equipment Sales Continue to Climb," internetnews.com, Sep. 7, 2005, *at* http://www.internetnews.com/stats/article.php/3532446 (last accessed Sept. 15, 2005) (stating that the growth of VoIP for business plays a major part in the increased sales of PBX equipment); Johanne Torres, "IP PBX Shipments to Surpass TDM-Based Systems in 2006," TMCNet, Jan. 28, 2005 *at* http://www.tmcnet.com/channels/ip-pbx/ip-pbx-articles/ip-pbx-shipments-surpass-tdm-2006.htm (last accessed Sep. 15, 2005) (discussing a newly published study conducted by research firm Dell'Oro Group, which states that IP PBX shipments will reach 28 million lines in 2006, surpassing TDM-based shipments).

deliver. This fact supports the conclusion that the two services should be subject to similar E911 requirements. It is also worth emphasizing that the functionality of VoIP business services clearly differs from the functionality of a mass market device intended for the home or for the individual. T1-based VoIP services for businesses primarily provide users of MLTS equipment with enhanced features such as IP-conferencing, bundled data services, and fax services. Customer expectations regarding E911 for mass market services such as those offered by Vonage and cable companies are likely to be significantly different than customer expectations regarding E911 for business class wireline services. It follows that the application of the requirements established in the *VoIP E911 Order* to mass market VoIP services does not, by itself, justify applying those requirements to VoIP business services.

Second, the Commission explicitly ruled in an order that predated the *VoIP E911 Order* that it would not impose federal E911 requirements on circuit-switched or IP transmission services provided to MLTS users or on the manufacturers of MLTS equipment. *E911 Scope Order* ¶ 50. The Commission decided instead to leave E911 regulation for MLTS to states and localities. Established administrative law requires that the Commission explain why it is reasonable to reverse a prior decision.[6] By applying its new E911 requirements to all services that fall within the literal definition of interconnected VoIP service, the *VoIP E911 Order* arguably (although perhaps unintentionally) reversed the Commission's prior decision not to impose federal E911 regulations on MLTS. But the Commission did not supply an explanation for this change in the *VoIP E911 Order*. Upon further review, the Commission should conclude that the same factors that caused it to leave E911 regulations for MLTS to the states and localities in its prior order justify continuing that policy today.

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[6] *See Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983); *Nat'l Wildlife Fed'n v. FERC*, 801 F.2d 1505, 1512 (9th Cir. 1986).

In declining to exercise jurisdiction over the application of E911 requirements to MLTS arrangements, the Commission expressly included IP-based MLTS services among the services subject to this ruling. In the Further NPRM that led to the *E911 Scope Order*, the Commission sought comment on whether to impose E911 requirements on, among other things, "Internet Protocol-based systems."[7] Later, in declining to establish federal regulations, the FCC stated that it did not want to impose E911 MLTS regulations on "VoIP and packet-based technologies." *E911 Scope Order* ¶ 62. The Commission also included IP MLTS in its definition of MLTS in the 2004 Notice of Inquiry in the MLTS E911 proceeding. "[W]e use the term 'MLTS' or 'multi-line telephone system' to describe Centrex, analog PBXs, ISDN PBXs, non-ISDN digital PBXs, IP-PBXs, key systems and systems that use combinations of these technologies."[8]

The Commission decided to leave MLTS E911 regulation to the states, because it believed that states are in a better position to establish appropriate regulations: "[T]he record demonstrates that, because of the particular requirements of E911 over MLTS, state and local governments are in a better position to devise rules to ensure that E911 is effectively deployed over MLTS in their jurisdictions." *E911 Scope Order* ¶ 50. The variety of MLTS equipment users, which range from universities and hotels to companies with multiple sites, indicated that closer scrutiny and balancing of specific interests would be required than that afforded by federal regulation. *E911 Scope Order* ¶ 52.

The conditions that led the FCC to conclude that state regulation would be the most appropriate level of oversight have not changed, as evidenced by the responses to *MLTS E911*

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[7] *Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems, et al.*, Notice of Proposed Rulemaking, 17 FCC Rcd 25576 ¶ 81 (2002) ("*E911 Scope NPRM*").

[8] Public Notice, "FCC Seeks Comment About Status of State Actions to Achieve Effective Deployment of E911 Capabilities for Multi-Line Telephone Systems (MLTSs)," CC Docket No. 94-102, DA 04-3874, n.2, (Dec. 10, 2004) ("*MLTS E911 NOI*").

NOI that were submitted as recently as March 2005. MLTS operators must still take affirmative steps to ensure that accurate call location information is transmitted to the proper PSAP.[9] MLTS equipment has yet to be adopted by many MLTS operators due to cost concerns, which substantively impact the effectiveness of E911. A growing number of states are considering and enacting targeted legislation that impose forward-looking MLTS E911 obligations as recommended by the model legislation proposed by NENA and APCO.[10] There appears to be no basis for depriving the states from making these decisions at this point.

Third, the Commission has concluded that regulations imposed on carriers alone cannot ensure E911 compliance in an MLTS environment: "[E]ach party along the 911 path is responsible for providing a service or technical function beyond that required for non-MLTS E911 provision. First, manufacturers must provide PBXs with direct inward dialing (DID) to support MLTS signaling through such systems as Centralized Automatic Message Accounting (CAMA) or Integrated Services Digital Network (ISDN) interfaces in order to deliver the calling number identification that makes MLTS E911 possible…Assuming a MLTS operator has a MLTS-compatible PBX, any carrier involved must provide trunking and interfaces capable of transferring location information received from the MLTS. However, the MLTS operators must transmit this location data, and also must populate (and update) the ALI database to provide specific geographic cross-references to the transmitted data for the PSAP to receive. Finally, PSAPs must have the capability to receive this information." *E911 Scope Order* ¶ 61.

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9 Verizon Comments at 4, CC Docket No. 94-102 (filed Feb. 28, 2005).

10 *See* APCO State Legislative Summary *at* http://www.apcointl.org/about/pbx/documents/E911_chart.doc (last accessed Sep. 15, 2005) (showing legislation by twelve states). The model legislation is available at http://www.apcointl.org/about/pbx/worddocs/modelleg.doc (last accessed Sep. 15, 2005).

Although recent advances in technology have facilitated coordination between carriers, manufacturers, and customers, the fact remains that successful provision of E911 for MLTS still requires participation from all three parties. Carriers offer solutions for coordination, but positive maintenance by MLTS operators is required for successful MLTS E911. Moreover, even though a carrier may offer a solution to facilitate coordination, that solution may not be appropriate for a given MLTS operator. For example, virtually all colleges and universities have internal police, security, or public safety departments, which may not be certified as PSAPs but may be the ideal first responders in the event of campus emergency. ACUTA Comments, WC Docket No. 94-102 (filed Feb. 18, 2003). The highly customized nature of MLTS arrangements led the Commission to specifically decline imposition of a "one-size-fits-all" requirement on MLTS operators. *E911 Scope Order* ¶ 52.

In any event, it is clear from the Commission's discussion of this issue in past orders that regulations imposed directly on manufacturers is a necessary precondition for ensuring E911 compliance in an MLTS environment. *E911 Scope Order* ¶ 115; *E911 Scope NPRM* ¶¶ 85-86, 91. The Commission clearly believes that E911 solutions cannot be effectively deployed by the service provider alone in the circuit-switched MLTS setting. The IP MLTS setting is no different. Yet, as discussed, in the *VoIP E911 Order*, the FCC arguably exempted manufacturers but not service providers from the duty to comply with the new federal E911 requirements. Given that compliance requires cooperation between manufacturers and carriers (among others), the *VoIP E911 Order*'s treatment arguably imposes a duty on carriers that they cannot meet. This is an unreasonable outcome and, in any event, contrary to Commission precedent.

III. CONCLUSION

For the reasons stated herein, the Commission should waive or clarify or reconsider its *VoIP E911 Order* so that, it is clear that the rules adopted therein do not apply T1-based VoIP services, including IP MLTS services.

Respectfully submitted,

/s/

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ATTORNEYS FOR TIME WARNER TELECOM, INC.

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Attachment A

For both circuit-switched and IP trunking services provided for MLTS equipment, certain conditions exist where access to e911 services may become hindered, or unavailable altogether. The table below indicates that similar conditions produce similar effects in both the IP trunking and traditional trunking situations.

Network Failure	Traditional TDM PRI/CAS Service Impact	IP Trunk Service Impact
PSAP/Selective Router Trunk Failure	Emergency calls routed to default PSAP for calling area	**Same.** Emergency calls routed to default PSAP for calling area
TWTC transport equipment failure	Customer T1/DS3 facility fails. No calls can be passed.	**Same.** Customer Ethernet facility fails. No calls can be passed.
TWTC Switch/DACS failure	T1/DS3 port failure. No calls can be passed.	Calls can be routed to backup switch and calls terminated to default PSAP in calling area.
CPE power failure	External CSU/DSU or customer PBX out-of-service. No calls can be passed.	**Same.** VoIP gateway or customer PBX out-of-service. No calls can be passed.
Customer network failure	External CSU/DSU or customer PBX out-of-service. No calls can be passed.	**Same.** VoIP gateway or customer PBX out-of-service. No calls can be passed.
Phone sets relocated without notification	End-user location changes. Location registry information is incorrect for actual location if CPN is used. No impact if BTN used.	**Same.** End-user location changes. Location registry information is incorrect for actual location if CPN is used. No impact if BTN used.
Remote location originated call	Remote office CPN assignment(s) must be registered and sent by PBX. Location registry information is incorrect for actual location if CPN is incorrectly registered. BTN can not be used.	**Same.** Remote office CPN assignment(s) must be registered and sent by PBX. Location registry information is incorrect for actual location if CPN is incorrectly registered. BTN can not be used.
Incorrect CPN information provided on call.	Call fails screening. Emergency calls routed to default PSAP for calling area.	**Same.** Call fails screening. Emergency calls routed to default PSAP for calling area.
No CPN information is provided on call.	BTN is used from Trunk. Emergency calls routed to PSAP assigned to BTN.	**Same.** BTN is used from Trunk. Emergency calls routed to PSAP assigned to BTN.