

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Revision of the Commission's Rules to)	CC Docket No. 94-102
Ensure Compatibility With Enhanced 911)	
Emergency Calling Systems)	
)	
Amendment of Parts 2 and 25 to Implement)	IB Docket No. 99-67
the Global Mobile Personal Communications)	
by Satellite (GMPCS) Memorandum of)	
Understanding and Arrangements; Petition of)	
the National Telecommunications and)	
Information Administration to Amend Part 25)	
of the Commission's Rules to Establish)	
Emissions Limits for Mobile and Portable)	
Earth Stations Operating in the 1610-1660.5)	
MHz Band)	

To: The Commission

**Comments of the
Boulder Regional Emergency Telephone Service Authority**

The Boulder Regional Emergency Telephone Service Authority ("BRETSA"), by its attorneys, hereby submits its comments in the above-captioned matter.

Introduction

BRETSA is an E911 authority board created pursuant to an intergovernmental agreement among Boulder County Colorado, and the cities and fire districts located in Boulder County, Colorado. BRETSA administers surcharges applied to all telephone lines and wireless phones within the County, pursuant to state statute, to fund the provision of E911 service.

I. Application of ANI and ALI Standards to Wireless and Emerging Technologies

In the Wireless Communications and Public Safety Act of 1999 (the "Act"), Congress found that emerging technologies can be a critical component of the end-to-end communications

infrastructure connecting the public with public safety providers. Act, §(2)(a)(3). BRETSA also notes that wireless and emerging technologies often supplant traditional wireline services, or are marketed and purchased as providing access to public safety services. If such services do not provide 911 access with ANI (Automatic Number Identification) and ALI (Automatic Location Information), effective access to 911 service and emergency services may not be provided.

For example, with voice-over-IP (“VoIP”) applications, voice calls travel over the Internet and/or intranets, and if they are connected to the PSTN it is through gateways or points-of-presence (“POPs”) in the caller’s local calling area or the called party’s local calling area. Trunking is used at the POP for line-efficiency. Whether 911 calls may be placed from a VoIP application, where (the local calling area in which) they enter the PSTN if they can be placed, and what ANI and/or ALI is transmitted, will likely depend on the specific VoIP implementation. This is critical, because the ANI information is used to access the associated ALI information in a database, and that ALI information is used to route the call to the appropriate PSAP as well as to provide the location information to the PSAP. The ALI databases maintained by or for 911 network service providers include ANI and ALI records for stations connected to the PSTN with standard telephone numbers. Unless the VoIP provider addresses the issue in the design or implementation of its application, accurate ANI and ALI information will not be routed with a 911 call to the appropriate PSAP, location information will not be accurate if it is provided at all, and 911 call takers may not be able to reconnect to the caller if disconnected..

Wireless services which do not promptly provide reasonably precise location information pose similar issues. When routing of the call is delayed or inaccurate, or the caller’s location cannot be determined, emergency response is delayed and limited public safety resources may be inefficiently used attempting to locate and respond to the caller.

The Commission should require that all devices or services which are (i) interconnected with the public switched telephone network (“PSTN”), (ii) connected with a dispatch or service center (“Service Center”) which is or may be interconnected with the PSTN, or (iii) intended or reasonably expected to be used for the transmission of alarms or information to initiate a response by public safety agencies, comply with ANI and ALI requirements and route calls through available E911 networks. Where existing services and devices are not capable of complying with these requirements, temporary waivers should be available.

A. Standards

Services and Devices which directly utilize the wireline PSTN, including MLTS and VoIP applications, should be required to provide ALI and ANI in standard format. Wireless services and devices should be required to comply with the Phase II Wireless E-911 standards.¹ The standard should be modified to include a requirement that Phase II ALI information be provided within thirty (30) seconds of initiation of the emergency communication. The adoption of such standards is essential to prevent diminution of the effectiveness of the existing E-911 system, and to assure that these requirements are considered in the research, development and authorization processes for communications devices and services. This will avoid the need to retrofit existing devices and delays attendant in phasing in compliant devices as CPE is replaced. That is, developers of new services and devices should not be permitted to deploy their services or interconnect their devices with the PSTN until they have developed and demonstrated solutions for transmitting 911 calls with accurate ANI and ALI information in usable format.

¹ ANI or other CPE identification information should be sent (in usable format) even in the case of non-voice, telematics and other services where call back is not possible, to facilitate (i) communications with Service Centers which may be capable of providing supplemental information, (ii) interdiction of prank or unintentional alarms, (iii) response, (iv) record keeping, and (v) the development of supplemental database services, for delivery to responding public safety units of personalized premises, medical and/or other customer-provided information.

B. Waivers

Annual waivers of the ALI-ANI standards should be granted on a case-by-case basis to existing services for which compliance is impracticable due to service design or limitations of embedded CPE. Annual waivers are appropriate, given the pace of technological development and the importance of compliance in the public interest. BRETSA notes that 911 calls are often used to summon emergency services for the benefit of persons other than the caller, and when public safety officers are required to search a large area to locate the individual requiring assistance, they are not available to render service to others. Accurate ALI information also assists in identifying whether separate calls are for the same or separate emergencies.

C. Non-Wireline ALI Methods

While the Commission should adopt the Phase II Wireless ALI standards for the broad range of services described above, which includes bifurcated accuracy standards depending upon whether handset (GPS chipset) based solutions or network-based solutions are employed, the method of location determination should not be specified. Equipment and service providers should be permitted to implement solutions utilizing network based triangulation, handset based-GPS chip set solutions, LORAN-type solutions, other innovative solutions and well as hybrid solutions, provided that the ALI data meeting the accuracy standards is transmitted in a standardized format within the required time interval. This will encourage innovation, and also provide maximum flexibility for existing services to come into compliance with the standards.

II. Service Center Intervention

The Commission has observed that various non-interconnected and telematics services, and services such as MSS services which are not currently capable of providing ALI information without intervention of a network operator, utilize intervention of operators at a Service Center

to determine location and relay emergency information to PSAPs. It is BRETSA's view that emergency calls and information should be transferred and handled by trained personnel at a PSAP at the earliest possible moment, that ANI/ALI information should be transmitted in standardized format, and that such calls should be transferred to the PSAP over 911 trunks rather than administrative lines so that they are received at the PSAP's CAD workstations and the full facilities and functions of the CAD systems can be utilized.

A. The Colorado Plan and E-911 Call Handling

Colorado has implemented E-911 service statewide, and facilitated the rapid implementation of Wireless Phase I and Phase II service, through deployment of a statewide backbone network interconnecting all carriers and all PSAPs. In Colorado, an exchange service provider was designated the Basic Emergency Service Provider ("BESP"), and provides the trunks and tandems necessary for routing and transport of all 911 traffic originating from any wireline or wireless carrier in the state. The BESP files statewide-averaged tariff rates for this service. County E-911 authority boards assess a surcharge on all telephone lines within the respective county, and on all wireless devices billed to addresses within the respective county, for the purpose of paying the BESP tariff and related charges.

The BESP contracts with a database provider for ALI information, which is used to route the call to the correct PSAP, as well as to provide the ALI information to the PSAP. E-911 calls are routed to the PSAPs through the BESP backbone network, and can be transferred between PSAPs on the same network. E-911 calls arriving at the PSAP on the BESP trunks are routed to the CAD workstations at the PSAP, which are the standard dispatcher workstations, and provide features such as caller location displays, previous calls from that location, public safety unit location display, call recording and logging.

The existence of the BESP backbone network has facilitated the rapid deployment of Wireless E911 service, because the BESP provides the trunks for the E-911 traffic to the wireless carriers for all E911 traffic, and the wireless carriers are not required to make individual connections to PSAPs or negotiate protocols and arrangements with each PSAP.

B. Routing of Calls from Service Centers.

Colorado PSAPs currently receive emergency calls from Service Centers for telematics service providers. Such calls are received at the PSAP over administrative phone lines (ordinary business telephone lines) and not over the BESP E911 trunks. These calls cannot be routed to CAD workstations with ALI and ANI data, cannot be transferred to another PSAP, and generally involve the Service Center operator (often a concierge service provider) relaying information from the party initiating the emergency call.

While the receipt of emergency calls from Service Centers over administrative lines is better than not receiving the emergency call information at all, it is inefficient and disserves the public interest. BRETSA is concerned that these calls are not transmitted via the E911 backbone network, and the Service Center operators in communication with the “caller” are not trained emergency call takers. Even if specifically trained to respond to emergency calls, BRETSA understands that these operators are *primarily* engaged in the provision of dispatch, concierge and other non-emergency services.

C. The Commission Should Require Routing of All Emergency Calls Via 911 Trunks.

The Commission should adopt regulations for wireless technologies and services which require that emergency calls handled by Service Centers be transferred to the appropriate PSAP via 911 trunks where available, with ANI/ALI in standard format.

The best of all solutions would be the deployment of an interstate E-911 backbone network interconnecting state E911 backbone networks, with a national default PSAP staffed by dedicated public safety personnel. Calls to Service Centers, calls which require additional time and effort for ALI determination, and various other calls from emerging technologies could be routed to these centers. In addition to routing of calls to PSAPs through E911 trunks capable of delivering ANI/ALI to CAD stations in the appropriate PSAP, such a solution would facilitate transfer of misrouted calls to the correct PSAP, including to PSAPs in adjacent states, put callers in touch with call takers trained and experienced in handling emergency calls, and provide a single interconnection point and a single point for protocol translation or ANI/ALI format translation for MSS, telematics and other services.

Additional legislation or regulation may be required to establish such an interstate backbone network and national default PSAP. While BRETSA considers it unlikely that such a solution will be developed in the near term, the adoption of requirements for transmission of such calls over state backbone networks, where available, with ANI/ALI information in standard format, should lead to development of private and/or private-public solutions.

D. Verification of ALI Databases and Systems.

BRETSA has discovered through experience that even the existing wireline ALI database contains errors, in some areas a significant percentage of errors. These errors are often discovered only when responding public safety personnel find themselves at the incorrect location, for example where the ALI information gave an address of West Main Street and the actual address of the calling station is East Main Street. The capability of public safety entities to verify the accuracy of the ALI database is limited not only by budgetary considerations, but also by concerns with permissible uses of the carriers' subscriber information.

Emerging technologies may also rely upon supplementary ALI databases, and MLTS users/providers rely upon such databases, which may be proprietary and privacy issues may attach. Even where services are not database-dependent and location is determined in real time through use of GPS chipsets, triangulation, or other means, accuracy of location information will be dependent upon proper functioning of carrier systems. The Commission should adopt regulations requiring annual testing and verification of carrier-, service provider- and user- (in the case of MLTS) provided ANI/ALI information, and semi-annual testing and verification of emergency call processing systems. Informational filings with the FCC to confirm completion of testing and verification and allow monitoring of the accuracy and reliability of the ALI databases and systems should be required.

III. Multiline Telephone Systems.

Multiline Telephone Systems (MLTS) such as PBX, Centrex and Key Systems, often provide incorrect ALI information to PSAPs. As noted by the Commission, absent use of supplemental services and/or equipment, MLTS will transmit the ALI for the location of the MLTS hardware, main building or the reception area of the MLTS owner/operator, even though a station from which a 911 call is placed may be located in a distant portion of the building, in another building on a multi-building campus, or even in another building located in another part of the community.

BRETSA supports adoption of the proposed NENA standards for MLTS, subject to two modifications. First, the NENA standard would require use of supplemental services and/or equipment to provide accurate ANI and ALI for the station from which a 911 call is placed if certain conditions are met, including when the area served by the MLTS exceeds 40,000 square feet. The NENA standard would also allow one location identifier (ERL) for an area of 40,000

square feet. However with applications of MLTS to, *inter alia*, provide shared tenant services in apartment, condominium, multi-tenant office buildings, etc., public safety personnel face the prospect of having to forcibly enter and investigate in excess of 40 separately secured units (*e.g.*, locked apartments or offices) within a 40,000 square foot area, for example in the case of a 911 call from a victim who is incapacitated or unable to speak. Accordingly, BRETSA believes that the NENA standard should be adopted by the Commission with the alternative thresholds that a supplemental ALI solution be provided when the MLTS system serves (i) more than one location, (ii) more than 40,000 square feet, or (iii) *more than 5 separately secured areas*, and that MLTS systems subject to the requirements to provide ANI and ALI information for stations in any separately secured area.

The second modification to the NENA standard which BRETSA advocates is the adoption of regulations requiring regular testing and verification of the MLTS ANI and ALI data and systems, as discussed above.

IV. Prepaid and Disposable Wireless Devices.

BRETSA's concerns with prepaid and wireless devices relates to the proper assessment of surcharges and currency of information in 911 databases. As discussed above, carriers in Colorado are required to remit to E911 authority boards monthly surcharges upon each wireless device billed to an address within the respective authority boards' jurisdiction. In the case of prepaid and disposable devices, where devices or additional capacity is sold at retail outlets, the carrier should pay the surcharge to the jurisdiction in which the retail outlet is located, or to the billing address for capacity purchased by phone or internet using a credit card or account. It is BRETSA's understanding that E911 calls may be placed over prepaid and disposable units at any time, regardless of whether minutes of use remain unused and unexpired. Since these units can

generate traffic on the BESP E911 backbone network, impact the number of circuits required, and otherwise impact the costs incurred by the PSAPs, surcharges should be remitted by the carrier in each month that the unit is capable of accessing the E911 network. PSAP's must also be able to re-establish connections with these units in the event a 911 call is disconnected. BRETSA understands that this implicates issues of activation of units, re-use of numbers, and currency of 911 databases; but the requirements that accurate ANI and ALI information be provided, and that PSAP's be able to reconnect a disconnected call, are paramount. Thus, the Commission should not create exceptions or grant waivers to the generally applicable rules to enable any particular business plan, such as for outbound-call-only phones, disposable or prepaid phones, unless and until the equipment and/or service provider has demonstrated compliance with the Commission's 911 rules.

Respectfully submitted,

**Boulder Regional Emergency Telephone Service
Authority**

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