

Other

- There are essentially two possibilities for how and at which physical and electronic point the "fixing of CESID/ANI" should occur. The Commission should not dictate that any electronic solution must be "internal" to the MLTS systems. Installations should be fixed with a definable electronic outcome, without regard to how a given owner chooses to achieve that outcome. (9-10)
- The Commission should examine and adopt the standard recommendations set forth in the TIA/EIA Telecommunications systems bulletin #TSB103-1993, dealing with PBX and KTS support of enhanced 911 calling service. (10-11)

**Other:**

Preemption

- Not all MLTS installations need to be and/or will be covered by the rule. The critical factor is not size, but the projected time it would take a public safety responder to find a party in need. The requirement should be left to the purview of state regulatory bodies. (7-8)
- The Commission should be aware of state legislation to impose E911 compatibility on existing and new MLTS. The Commission's action does not negate the need for these state laws. (8-9)

**TERRAPIN CORP.**

**Interest:** Manufacturer of the Position Information Navigation Subsystem (PINS) location technology described in the Driscoll Report.

**Wireless-Related Issues:**

General.

- Suggests a more aggressive compliance schedule for all wireless requirements. (1)
- Favors promulgating a single wireless E911 signalling standard in order to conserve PSAP resources and avoid multiple standards. However, would have the rules allow for multiple technical means of implementing this standard. (3-4)

Scope of requirement (covered and excluded services).

- The Commission should consider including a select few non-voice services such as the Intelligent Transportation System (ITS) within the scope of these rules. (3)
- Favors including PCS. (3)

Availability of 911 to service-initialized handsets.

- Roamer access should be limited to "registered users." (4)

911 call priority.

- Supports requiring 911 call priority but believes that the cost of implementation would be prohibitive. (4)

Provision of location information.

- Believes that the value of elevation data is not worth the cost of the technology required to produce this data. Suggests the utilization of hand held devices to locate callers in high-rise environments. (4, 5)
- Because of its cost, accuracy, availability and ability to function indoors, Terrapin believes its PINS technology is superior to all others. (4-5)
- Because the PINS system is already capable of providing 125 meter accuracy, Terrapin would set

more aggressive deadlines for the implementation of Stage 2 and Stage 3 technologies. (5)

- Points out that received signal strength is not necessarily related to base station location. (5)

Re-ring/call-back.

- Supports this requirement, especially for roamers. (5)

Common channel signalling.

- Favors a common standard, but is unsure of the correct standard at this time. (5-6).

Access to TTY devices.

- The present TTY signalling standard is obsolete and should not be encouraged for future use. (6)

Labelling.

- Supports handset labelling, but points out that the E911 capabilities of any instrument will likely be more network dependent than instrument dependent. (6)

**Other Issues:**

Privacy.

- The act of dialing 911 should waive the user's privacy rights. (6)
- If a private party PSAP is attempting to locate a user, the user should have to take an affirmative action (e.g. press a button) in order to waive his privacy rights. (6)

**TEXAS ADVISORY COMMISSION ON STATE EMERGENCY COMMUNICATIONS  
(TX-ACSEC)**

**Interest:** State advisory commission.

**PBX-Related Issues:**

General.

- Although TX-ACSEC supports the goal of PBX compatibility with E911 systems, the actual integration of this equipment into the local telephone system must be a cooperative effort between the LEC, the PBX operator, and the local 911 administrator. (4)
- TX-SCSEC urges the Commission not to promulgate rules which lock 911 services into obsolete technologies. (4)

Ability of PBX to pass calling number and location identifier.

- Supports the requirement that PBXs pass caller's telephone number, caller location information and call-back number. Does not support artificial SNI. (6)

Timing of compliance.

- Supports the implementation schedule to the extent that it applies to equipment manufactured after the effective date in this order. However, these rules should not apply to already constructed PBX/LEC interfaces which are in compliance with state law. (7)

Need for standard data link interface.

- Urges the adoption of the NENA standards for information protocol as a nationwide standard for ALI database information. (6)
- Data standards for the transmission of database updates is best left as a local issue. (6-7)

Reach 911 without initial "9".

- Supports the required ability to reach 911 without dialing any extra digits. (4)

Labelling of non-compliant equipment.

- Supports labelling non-compliant equipment. (4)

Attendant notification.

- Supports the requirement that PBXs be capable of attendant notification, but would leave it up to local authorities to determine whether this feature must be utilized. (5)

PBX owner's obligation to update LEC.

- 911 authorities should be allowed "read only" access to LEC 911 databases in order to assure their accuracy. However, local authorities should retain their authority over database coordination. (5)
- Invoking the full trunk verification procedures every time there is a change in a residential multi-tenant data services (RMTS) database is too burdensome. Instead, RMTS systems should only be required to send readable SNI information to the 911 trunk. (5-6)

P.01 grade of service.

- Requiring a 911 trunk to service each PBX will force LEC central offices to concentrate these new 911 trunks. (7)

**Wireless-Related Issues:**

General.

- P.01 grade of service should be required for the wireless portion of 911 calls. (9)
- In order not to stifle innovation, the FCC should promulgate performance standards rather than design standards. (11)
- 911 compatibility should be a prime consideration in every applicable FCC proceeding. (12)

Scope of requirement (covered and excluded services).

- Scope should be limited to CMRS offering real-time voice or TTY communications. However, any non-voice service choosing to provide 911 access should have to meet these requirements. (8)

- If a private mobile radio service can be connected to the PSTN then it should be within the scope of these rules. (9)
- 911 access should be a prerequisite for obtaining FCC licenses for new systems. (9)

Availability of 911 to service-initialized handsets.

- Wireless 911 service should be available to all service initialized users and subscribed-to roamers. (9)

911 call priority.

- Agrees that within one year, wireless 911 calls should be assigned priority. (10)

Provision of location information.

- Supports wireless ALI requirements. However, industry should be free to use whatever technology it finds to be both accurate and cost effective. (10)
- TX-ACSEC supports the 3 stage phase-in period and its time frames. However, in order that callers in multi-story buildings might be successfully located, the Phase 3 accuracy should be narrowed to 10 meters. (10)

Re-ring/call-back.

- Supports re-ring/call-back requirements. (10)

Common channel signalling

- Supports common channel signalling requirements and would not let concerns about the reliability of SS7 stifle its use as a common channel standard. (11)

Access to TTY devices.

- Supports TTY access requirements. (11)

Labelling.

- Supports labelling requirement and would extend them by requiring manufacturers to supply labels for already installed equipment. (12)

**Other Issues:**

Privacy.

- Callers who dial 911 should not have their privacy protected in that the PSAP should have access to all information deemed pertinent by local authorities. (12)

Preemption.

- Although the FCC has the authority to preempt state E911 regulation, it is suggested that federal interests would be better served by a policy of negotiation with state regulatory bodies. (13)

**TRW, INC.**

**Interest:** Applicant for authority to construct a constellation of twelve non-geostationary satellites in medium Earth orbit for the provision of MSS above 1 GHz.

**Wireless-Related Issues:**

Scope of requirement (covered and excluded services).

- The FCC should extend E-911 obligations only to terrestrial CMRS providers that provide local communications services, e.g., current and future cellular and PCS service. (2-3)
- The FCC should not impose E-911 requirements on MSS capacity providers or CMRS providers offering MSS capacity, unless they also provide local CMRS services. (2-3)
- As a substantial segment of the ultimate users of MSS above 1 GHz capacity are expected to be non-local to the CMRS provider, in the absence of complete standardization of E-911 protocols, there is no way to ensure that the call will be processed locally. Also, the burden on the remote operator to facilitate proper transmission of the calls to local authority would be untenable. (3-5)
- The impracticability of requiring MSS operators to be E-911 compatible does not mean that users of MSS systems will be without options. Handsets will typically include a dual-mode feature permitting users to access local cellular or PCS systems. Thus, most system users would be able to access E-911 service, where available, by utilizing the interconnection of a local wireless service with the local wireline system. (5)
- The particular implementation approach that the FCC proposes for E-911 is intrinsically geared to local wireless service providers. While the FCC may require MSS above 1 GHz transceivers to have limited position determination capabilities for purposes of protecting RAS observations, the protection radii required of MSS operators -- the smallest of which is 30 kilometers -- do not require the level of resolution proposed by the FCC for E-911. (6-7)

- There are sound practical and technical reasons for declining to require global MSS systems to adhere to the E-911 protocols. Imposition of rigid E-911 interconnection and location information delivery protocols (such as ANI and ALI) is likely to be unduly costly for a new satellite system. (7)

U S WEST, INC.

**Interest:** Communications service provider.

**Wireless-Related Issues:**

Availability of 911 to service-initialized handsets.

- Agrees with FCC that wireless customers should be able to make 911 calls, but disagrees that this can be done within one year for roaming calls without user validation. (1)

911 call priority.

- Agrees with FCC that 911 calls should be given priority, but disagrees that this can be done within one year. Most infrastructures cannot currently support call priority. Also, simultaneous reporting of an emergency could overwhelm the call taking capabilities of PSAPs. (1)

Provision of location information.

- Timing.
  - The one-year deadline is unrealistic because the necessary products are not available to carriers and public safety organizations. No one can currently handle such E-911 features as wireless ALI. (2, 5, 14-15)
  - At least two more years are required before technical and cost/benefit analyses can even be performed. (18)
  - The deadlines for each step may result in hasty decisions at earlier steps which will make it harder to reach later steps. (18-20)
- Industry is already eagerly developing the technology. Thus, mandating implementation is unnecessary and counterproductive, imposes needless costs on carriers (and ultimately on consumers), and forces carriers to deploy less efficient technologies. (2-9)
- Suggests that the FCC should instead play a more management or oversight role, monitoring developments in industry standards and technologies. (10)

- The three-step ALI proposal is overbroad in scope. It requires wireless carriers to deploy technology whether or not public safety organizations want or are able to use the new capability, ignoring market demand and use. (11)
  - Many public safety organizations only provide basic 911 service or have not upgraded their equipment. (12-13)
  - Certain E911 organizations do not need or want a particular capability. (12)
  - Requiring carriers to deploy unused equipment and capabilities is economically wasteful, increasing cost of service without benefit. It may also prevent carriers from later using newer, better equipment. (13)
- Regulation is inappropriate when the capabilities and merits of different technologies are yet unknown. Some methods require additions to mobile handsets. For example, a Global Positioning Satellites system would require additional circuitry, which would add hundreds of dollars to the price of each mobile handset, and require the public to pay \$6 billion or more to retrofit or replace current handsets, with a nationwide cost of \$20 billion or more. Additions would also make handsets less portable and hurt the mobile services market. (15-17)
- An approach using hybrid RF measurements may be more efficient and cost-effective. (17-18)
- An alternative approach based on market need and reality:
  - Any E911 wireless obligation would be triggered by a bona fide request by a public safety organization within four years of the FCC order. (21-22)
  - There would be a public meeting for all carriers providing real-time voice communications within the jurisdiction of the public safety organization and, to the extent possible, other nearby organizations served by the same carriers. Participants would define the needs of the organizations involved, discuss technological solutions, and agree upon a deployment schedule for carriers. (22)

- No carrier need modify its networks to support E911 unless PSAP funding is assured, other public safety organizations do not oppose the technical plan, and it is protected from negligence liability. (23-25)
- Carriers are free to demonstrate to the appropriate agency that a request is not technically feasible, is not cost justified, or is otherwise unreasonable. (25)
- Carriers that will have deployed a form of wireless ALI capability before any request need not expend more resources to meet different requests unless the organization demonstrates the benefits outweigh the costs. (25-26)
- Supports the PCIA Emergency Access Position Paper and the Joint Experts meetings. (26)

**UTC, THE TELECOMMUNICATIONS ASSOCIATION**

**Interest:** Trade association representing the nation's electric, gas, water and steam utilities, and natural gas pipelines; certified frequency coordinator for the Power Radio Service.

**PBX-Related Issues:**

Reach 911 without initial "9".

- The proposed requirement that PBX systems have the capability to reach emergency services by dialing "911" without any additional digits is unnecessary and, in fact, may be confusing to telecommunications users who are familiar with a "9+" system. (3)
  - It has not been demonstrated that the need to dial additional digits before "911" has impeded access to emergency services on PBX systems. (3)
  - Because non-emergency numbers may still require the dialing of additional digits, users may continue to think in terms of dialing "9" in order to get an outside line. (3)
- To avoid unnecessary burdens, the FCC should permit PBX systems to access "911" either with or without additional digits. Those systems that require users to dial additional digits should include a notice on the terminal equipment as to the procedures for accessing emergency services. (4)

Other.

- PBX systems serving physically small locations should be exempt from the proposed rules as sources of emergency calls can be easily identified. It is not necessary that each piece of terminal equipment be capable of providing ALI as long as the location of the PBX is provided to the PSAP. (4)
- Supports the FCC's proposal to "grandfather" existing PBX systems as well as those that are: (1) manufactured or imported less than one year after the rules are ultimately adopted; and (2) installed less than eighteen months after the rules are adopted. (4-5)
- Requests clarification that grandfathering of existing systems would permit operators of existing PBX systems to make minor modifications or purchase/install replacement equipment for these systems without being

required to bring the systems into compliance with the E911 rules. (5-6)

- Urges the FCC to closely examine the costs associated with the implementation of the proposed E911 rules, and evaluate the effect that these costs will have on the price of telecommunications services and the development of the national information infrastructure. (6)

**Wireless-Related Issues:**

Scope of requirement (covered and excluded services).

- Supports the FCC's proposal not to apply the E911 compatibility rules to private mobile radio services. (6)
  - Utilities and pipelines operate extensive PMRS systems for emergency response. These systems are under the control of a central dispatcher who is trained to handle emergency calls and to contact the PSAP and direct outside assistance to the emergency site, if necessary. (6-7)
  - Applying the E911 rules to PMRS systems would impose a significant financial burden on PMRS operators and would increase the cost and complexity of PMRS systems. (7)

Provision of location information.

- The FCC should not specify one method for identifying user location information. Instead, the FCC should establish its minimum requirements for such information and permit manufacturers and service providers to determine the best way of providing this information. (7)
  - Urges the FCC not to adopt regulations for wireless communications services that threaten the availability of affordable telecommunications services. (7-8)

**THE WASHINGTON AND OREGON TELECOMMUNICATIONS RATEPAYERS  
ASSOCIATION FOR COST-BASED AND EQUITABLE RATES**

**Interest:** Association of telecommunications users

**PBX-Related Issues:**

Ability of PBX to pass calling number and location  
identifier

- Supports a requirement that only new PBX equipment be capable of passing the required information, assuming that this will not cause the price of PBXs to increase substantially. (4-5)
- Modifying existing PBX systems to accommodate E-911 signalling would be very expensive. The expense cannot be justified in light of the fact that PBX 911 caller location problems occur infrequently. (5)
- The proposed rules appear to require that the PBX equipment itself be able to transmit to the PSAP the identification information. Currently, the information is obtained from a centralized database, not the PBX. If the Commission intends the information to be provided by the PBX, the rule should be modified to make this clear. (8)

Timing of Compliance

- Because significant technical work will be required of PBX manufacturers, ample time must be allowed to permit compliance. Defers to PBX manufacturers to determine the necessary time line. (8)

Reach 911 without initial "9"

- Requiring callers to have the ability to reach 911 without dialing "9" is unnecessary, will create serious problems with internal dialing plans, and may cause substantial post-dial delay. Instead, user education and proper labeling should be sufficient. (9)

Attendant notification

- Users that have internal emergency response personnel should not be required to pass 911 calls directly to the LECs for delivery to an external PSAP. The internal response teams can respond more quickly than outside personnel and can often deliver more appropriate response. (10)

- The Commission should clarify that users can designate the on-premises attendant to whom notification will be given so that internal response capabilities are not jeopardized. (10)

PBX owner's obligation to update LEC

- Requiring PBX owners to provide updates on a weekly basis will be sufficient. More frequent updates will be difficult and expensive. (11)

Need for standard data link interface

- The imposition of a standard data link interface could impose significant additional costs and increase the chances for introducing errors into the database. The Commission should permit other customer-specific data transfer agreements. (11-12)

Training of PBX owner personnel

- The scope of the approved verification personnel is unnecessary and would impose significant costs on PBX owners. At a maximum, PBX manufacturers should be required to include E911 verification procedures as part of the vendor training program provided to their customers. Anyone completing the program and other certified telecommunications personnel could perform the verification work. (12-13)

Definition of emergency response location

- The Commission should clarify that each telephone station does not have to be considered an emergency response location. In some cases, a simple street address or floor designation is sufficient. Provides recommendation of the specific information that should be required in order to ensure effective emergency response. (13-14)

**Other:**

Preemption

- Supports the proposal to preempt state regulation of E911 compatibility. There are significant benefits to developing national standards and regulations for implementing E911 service and customer premise equipment support of that services. Standards should also be developed for E911 network equipment and for the ALI databases. (15)

**WATERWAY COMMUNICATIONS SYSTEM, INC. (WATERCOM)**

**Interest:** CMRS provider rendering Automated Maritime Telecommunications System (AMTS) service to the maritime community along inland waterways.

**Wireless-Related Issues:**

Scope of requirement (covered and excluded services).

- Maritime services should be excluded from the scope of these rules because:
  - Maritime users have no expectation of access to landline 911 services, but rather expect to contact the Coast Guard by radio. (4)
  - Because WATERCOM's land stations serve large geographic areas, are located far from points of interconnection with the PSTN, and often serve multi-state sections of a waterway, routing calls to the correct PSAP will be very difficult. (5-6)
  - Prohibitively expensive modifications would have to be made to vessel stations, shore stations, and the operations and control center in order for WATERCOM's system to comply with these rules. (7-9)

**WESTINGHOUSE ELECTRIC CORP.**

**Interest:** Manufacturer of mobile communications equipment including fixed site and mobile terminal hardware, and provider of wireless communications services based on terrestrial and satellite systems.

**Wireless-Related Issues:**

General.

- Westinghouse is currently developing mobile communication networks utilizing low earth orbit and geostationary satellites. Although these systems do not provide for E911 service as designed, if the service providers so desire, the systems can be modified to support many of the E911 requirements called for in the notice. (2)
- Because satellite based systems, unlike terrestrial systems (e.g. cellular, PCS) have only a few ground stations which encompass thousands of PSAPs, connection to the correct PSAP is a complex problem. Further, the Commission must be careful not to place too many burdens on small start up ventures (such as those providing satellite communications). (3)
- Westinghouse suggests that one or more emergency nationwide response centers be constructed and shared by a number of wireless providers. These centers would provide positional information of users equipped with positioning technology to PSAPs and other rescue organizations. (3-4)
- The new Westinghouse system is designed to allow interoperability between terrestrial, cellular and satellite modes of call processing. Therefore, if appropriate agreements were in place, it would be possible for this system to provide E911 service in any mode. (5)

Scope of requirement (covered and excluded services).

- Westinghouse believes that it is technically feasible to provide wireless E911 service for technologies other than real-time voice services (e.g. two-way mobile data services). However, it believes that the provision of such services should be market driven (i.e. based upon what end users are willing to pay for these services). (4)

Availability of 911 to service-initialized handsets.

- In order to assure all roamers access to E911 services, nationwide Emergency Response Centers should be established that route calls to the appropriate PSAP. Such centers already exist to support home security and roadside services. (5)

911 call priority.

- Westinghouse believes E911 priority can be supported in proposed voice and data wireless systems. (5)

Provision of location information.

- For satellite systems, providing base station information (as required by Phases 1 and 2) is of little use in that the base station might be thousands of miles from the user. (5)
- Westinghouse is concerned that the imposition of Phase 3 requirements will add substantial cost and technical complexity to mobile receivers. (5-6, 8)

-- The following costly items must be added to the system in order to meet Phase 3 requirements: A location device and modem in the mobile terminal, the capacity of the PSTN and cellular networks to pass digital location signals, and the capacity of PSAPs to process this location data. (6)

-- Westinghouse had envisioned using GPS technology to provide location data. Because GPS will not meet the Phase 3 accuracy requirements, it will have to be augmented with other technologies such as portable "finders" to be used by rescue personnel. (7)

-- Five years is the minimum acceptable implementation period. However, because the costs of ALI technology will continue to decrease, this timeline should be stretched out as long as possible. (7-8)

Re-ring/call-back.

- Supports requiring the implementation of call-back within 3 years, but does not support requiring the retrofitting of existing equipment. (7)

Access to TTY devices.

- The requirement for three digit 911 dialing might be difficult to design into digital TTY terminals. (7)

Labelling of non-compliant equipment.

- Westinghouse sees equipment labelling as a viable alternative to providing ALI technology. (8-9)