

A. The Commission Should Refrain from Adopting Inflexible Technical Requirements and Compliance Deadlines.

1. The Record Supports the Need for a Flexible, Evolutionary Approach to Compatibility Based on Collaborative Industry Processes Rather than Regulatory Mandates.

In its opening comments, AT&T supported the proposal to make 911 access available to all service-initialized handsets within one year, with two qualifications. First, availability to wireless users will be limited to areas where such service is available to landline subscribers. Second, the unique characteristics of wireless services might preclude access in particular circumstances.⁵² AT&T recommended that this access requirement should extend to all providers of real-time voice CMRS services (except air-to-ground), and also agreed with the proposal that mobile subscribers be permitted to reach 911 without dialing additional digits.⁵³ The record reveals substantial support for these proposals, and consequently, they should be adopted.⁵⁴

At the same time, however, AT&T explained that many of the Commission's technical proposals are unrealistic in light of the

⁵² For example, service may be unavailable if a battery has insufficient power, a mobile antenna is broken, or the user is in an area of weak coverage. AT&T at 20-21.

⁵³ AT&T urged the Commission to clarify that cellular customers may reach 911 by dialing those digits plus the SEND key. Id. at 24-25. This request was supported by several other parties and not opposed by public safety organizations. APCO at 36; Bell Atlantic at 8; Ericsson at 3.

⁵⁴ See, e.g., APCO at 33-39; Bell Atlantic at 8; CTIA at 12-13; Pacific Bell at 3; PCIA at 5-7.

current state of technology. For example, it documented that call priority raises considerable implementation issues due to the mass nature of 911 calling from mobile subscribers. With respect to location information, AT&T showed that the Stage 1 proposal to require mobile carriers to provide base station information would preclude provision of the calling number, which likely will be more useful to PSAP providers, and that the serving base station may not be the one closest to the caller. It also explained that the Stage 2 proposal to provide estimates of distance and direction from the base station would result in the implementation of costly, dead-end technology, and that the Stage 3 mandate to produce location estimates within 125 meters of latitude and longitude can not be met within the five year deadline proposed in the Notice, given the serious limitations of known location technology.⁵⁵ Accordingly, AT&T recommended that, pending development of reasonably accurate location technology, wireless service providers be required to supply the calling number to the LEC for transmission to the PSAP provider.⁵⁶ AT&T

⁵⁵ AT&T at 30-35. AT&T also raised concerns regarding the other technological proposals, such as requiring use of common channel signaling for 911 calls within three years. Id. at 37-38.

⁵⁶ AT&T at 27-29 (suggesting a three year target date for implementation of this requirement); see also PCIA at 13-14. As AT&T explained in its opening comments, however, the provision of calling number will not enable PSAP providers to call back roamers unless the wireless switch provides passage of a temporary call-back number, because PSAP providers currently cannot receive and process more than seven or eight digits. AT&T at 28. Nonetheless, AT&T believes the calling
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further suggested that the Commission direct industry bodies to address call priority, ALI, common channel signaling, and related technical matters.

Other service providers and manufacturers expressed similarly significant concerns with the Commission's proposed design requirements and time deadlines. Numerous commenters cautioned that the adoption of inflexible deadlines would require implementation of inferior technology, stifling developments that could facilitate more efficient and accurate responses by emergency personnel.⁵⁷ There was also widespread agreement that call priority cannot be implemented within one year, given the need for continued work by industry standards bodies.⁵⁸ With respect to location technology, the record shows that base station information may be misleading because the serving base station may not be the one closest to the caller,⁵⁹ that the

⁵⁶(...continued)

number still is more useful than information regarding the serving base station, which some other parties propose as an interim solution. See BellSouth at 16; GTE at 16-18; Northern Telecom at 46-51. The serving base station often will not be the one closest to the calling party, and consequently, the call may be routed to the wrong PSAP. See AT&T at 30; GTE at 16-18; PCIA at 12-14. Moreover, as AT&T reported in its opening comments, the 911 industry prefers call-back number over gross location information (such as the serving base station) by more than a 2-to-1 margin (68% to 32%).

⁵⁷ See, e.g., Bell Atlantic at 10-11; GTE at 6-7; TIA at 22; U S West at 18-20.

⁵⁸ See, e.g., Ericsson at 4-5; GTE at 13-15; Motorola at 23; Northern Telecom at 54-55; NYNEX at 13.

⁵⁹ See, e.g., GTE at 16-18; PCIA at 12-13.

Stage 2 proposal would require deployment of highly inaccurate technology that is not a reasonable step toward the Stage 3 goals,⁶⁰ and that all of the known options for achieving the Stage 3 goals suffer from serious shortcomings.⁶¹ The record also supports AT&T's concern that the proposal to provide elevation information is technologically infeasible in macro-cell architectures and would be economically unreasonable.⁶²

Notably, there is consensus among manufacturers, LECs, and wireless service providers that the technical challenges to E911 compatibility can best be overcome by industry processes rather than Commission mandates. For example, Bell Atlantic explained that solutions to the unique problems posed by the wireless environment should be jointly developed by the wireless and emergency service communities.⁶³ The suggestion for an informal, flexible, and collaborative approach was supported by a wide range of other commenters, including BellSouth, CTIA, GTE, MCI, Motorola, Nextel, NYNEX, PCIA, Southwestern Bell, and U S West.⁶⁴

⁶⁰ See, e.g., Ericsson at 7-8; GTE at 18-20; Motorola at 14 (Stage 2 is a "costly diversion"); Northern Telecom at 56; PCIA at 14-15; Southwestern Bell at 16-17.

⁶¹ See, e.g., BellSouth at 14-16; CTIA at 9-10; Elert and Associates at 2-3; GTE at 20-22; Motorola at 15-16; Southwestern Bell at 17-19.

⁶² See Terrapin at 3-5 (the value of elevation information is not worth the cost of the technology).

⁶³ Bell Atlantic at 8-9.

⁶⁴ See BellSouth at 11-13, 16-17; CTIA at 11-12; GTE at 20-24; MCI at 2; Motorola at 16-17; Nextel at 5-7; NYNEX at 8-10; (continued...)

AT&T endorses such an approach because it will allow all interested parties to address highly technical issues in a free and open manner, without being constrained by artificial deadlines or the formal procedural requirements that attend negotiated rulemakings and federal advisory committees.

2. The Proponents of Regulatory Intervention Fail to Appreciate the Profound Limitations of Current Technology.

In contrast to the substantial opposition to design requirements and compliance deadlines expressed by service providers and manufacturers, the emergency service community generally supports the Commission's proposals.⁶⁵ Indeed, some commenters even seek to tighten the deadlines or impose more stringent accuracy requirements.⁶⁶ These commenters fail to recognize the extreme limitations of existing location technologies and the tremendous amount of work that must be done to provide reasonably accurate information.

⁶⁴(...continued)

PCIA at 15-19; Southwestern Bell at 7-9, 17-19; U S West at 10. Other parties recommended more formal processes. See Alltel Mobile at 1 (Industry Advisory Board); Northern Telecom at 42-45 (negotiated rulemaking); New Jersey (committee appointed by FCC).

⁶⁵ See APCO; Bexar Metro 9-1-1 District; New Jersey Office of Emergency Telecommunications Services; Texas Advisory Committee on State Emergency Communications.

⁶⁶ New Jersey at 14-15 (Stage 3 in four years). APCO at 43; Texas at 10 (narrow Stage 3 accuracy to 10 meters in each dimension).

Most of the proponents of Commission-imposed deadlines state that global positioning system (GPS) technology will enable the wireless industry to satisfy PSAP information requirements. New Jersey, for example, states that it has demonstrated a real-time, coordinate-based ALI system using GPS technology (although it concedes that it did not test the system using portable handsets), and Smith Advanced Technology and Stanford Telecom also propose GPS-based solutions.

The record demonstrates, however, that GPS technology is entirely unsuitable for many mobile service applications. AT&T explained in its opening comments that GPS does not work inside buildings and in urban environments, where multi-path fading prevents accurate location identification.⁶⁷ Elert and Associates, while characterizing GPS as the most promising location technology, conceded that GPS signals cannot penetrate or bend around metal and concrete and that reflected signals cause excessive errors.⁶⁸ And U S West pointed out that GPS technology is extremely expensive and would impose significant size and design penalties on mobile handsets.⁶⁹ Even Smith Advanced Technology, which strongly endorsed GPS, estimated that

⁶⁷ AT&T at 33.

⁶⁸ Elert and Associates at 10. See also Redcom at 16 (GPS has major problems inside buildings and tunnels and in multi-path fade environments).

⁶⁹ U S West at 15-17 (GPS would add hundreds of dollars to the price of each handset and require the public to pay \$6 billion to retro-fit existing handsets, with a total nationwide cost of \$20 billion; GPS also would make handsets less portable).

it would cost fifty dollars per phone to put GPS capabilities in new handsets, 200 dollars to retro-fit handsets (at an aggregate cost for the cellular industry of five billion dollars), and \$40,000 per PSAP for upgrades, and would increase the size of handsets by 1.25 cubic inches.⁷⁰

Other proponents of rigid compliance deadlines failed to show that the technology to support those deadlines either exists or is achievable. APCO et al. rely primarily on the JEM and Driscoll Reports, even though the JEM Report expressly denies the suitability of any current technology to meet the proposed deadlines, and Driscoll offered no technical substantiation for its conclusions. In its comments, Driscoll simply asserted that the chief obstacles to compatibility are funding and coordination, and that there are a number of systems in existence capable of meeting Stage 3 accuracy requirements.⁷¹ AT&T and numerous other parties demonstrated, however, that the technologies reviewed in the Driscoll Report are not currently available, have never been tested across the wide range of interfaces, network architectures, and frequencies used by CMRS providers, and suffer from considerable shortcomings in their current forms.⁷² Driscoll has offered no evidence to the contrary.

⁷⁰ Smith Advanced Technology at 13-14, 19.

⁷¹ Driscoll at 2.

⁷² AT&T at 33-35; NYNEX at 8-10; PCIA at 15-20; Southwestern Bell at 17-19.

Stanford Telecom proposes use of a spread spectrum ranging signal from each base station which would function similarly to GPS but assertedly would not operate under the same limitations. Nonetheless, Stanford does not describe its technology in sufficient detail to permit analysis. Moreover, it concedes that implementation of the technology would require users to bear the cost of a new chip set,⁷³ which AT&T believes could run several hundred dollars. Similarly, Terrapin proposes use of a Position Information Navigation Subsystem, but provides little data regarding the technology and its associated cost.⁷⁴

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The industry is genuinely committed to expediting development of the standards and technology to support wireless/E911 compatibility, and will work hand in hand with the emergency services community to continue the progress made by the JEM. The Commission can and should encourage and oversee such progress by having staff members attend future joint meetings and requiring industry to submit periodic (annual or semi-annual) status reports. It should not, however, adopt detailed technical rules until there is consensus on the appropriate elements of compatibility, underlying standards, and desired technology.

⁷³ Stanford Telecom at 1-2.

⁷⁴ Terrapin at 4-5.

In the interim, the Commission should require service providers to supply the calling party's number to the LEC in order to allow PSAP providers to call back if the transmission is interrupted.⁷⁵

B. The Commission Should Address Labeling, Funding, and Liability Issues and Should Preempt State and Local Regulation of Wireless/E911 Compatibility.

1. Labeling.

In its opening comments, AT&T opposed the Commission's proposal to label "non-compliant" subscriber equipment, explaining that a mandatory labeling requirement would create confusion and might actually deter subscribers from dialing 911.⁷⁶ Numerous other commenters shared AT&T's concern, noting that labels would become obsolete as system capabilities are upgraded to support compatibility, that users might misinterpret labels to mean that calling 911 would be futile, and that customer education can better be accomplished through manuals and mailings.⁷⁷ In contrast, the few supporters of mandatory

⁷⁵ As noted above, the Commission should endorse a goal of making this information available within three years, with the recognition that the actual implementation date may be earlier or later, depending on the pace with which PSAPs, LECs, and wireless service providers can deploy the necessary upgrades.

⁷⁶ AT&T at 40.

⁷⁷ CTIA at 22; Motorola at 26 (noting that no universal label would apply accurately to all 911 systems); Nextel at 7-8 (labels may be misleading and any accurate label would be voluminous); PCIA at 25-26 (labels may be misleading and will become obsolete); Southwestern Bell at 23-26 (labels may be misleading, and are not required on public landline phones where 911 is not available); TIA at 15.

labeling offer no compelling justification for such a requirement.⁷⁸ Accordingly, the Commission should decline to adopt the mandatory labeling proposal.

2. Funding.

AT&T's comments urged that wireless service providers not be required to indemnify LECs and PSAP providers for their costs of deploying compatibility technology, and not bear the costs of implementing enhanced 911 service where it is not available to landline customers. AT&T also emphasized the need to develop a rational funding mechanism to recover the substantial costs of implementing compatibility technology, which would treat the provision of access to E911 as a separately identified cost element rather than a cost of doing business. To this end, AT&T asked the Commission to initiate a further proceeding so that all interested parties, including state regulators, PSAP providers, LECs, and wireless carriers, could address funding issues in a comprehensive manner.⁷⁹

The record reflects widespread support for a separate proceeding focused on funding of E911 compatibility. PCIA, for example, noted that compatibility will be a federal mandate, and accordingly, the Commission should take the lead in addressing

⁷⁸ APCO at 51 (additionally urging a requirement that manufacturers supply label to retro-fit existing equipment); E.F. Johnson at 3-4 (supports labeling, in conjunction with a finding that existing equipment can be grandfathered as compliant).

⁷⁹ AT&T at 42.

cost recovery.⁸⁰ Bell Atlantic stressed the need to develop a competitively neutral cost recovery mechanism, and Nextel similarly noted that the Commission must ensure against disproportionate assessment of costs on particular providers.⁸¹ GTE properly pointed out that a cost recovery mechanism should be in place before the Commission mandates the expenditure of substantial resources to develop and implement compatibility technology.⁸²

AT&T suggests that a proceeding to address cost recovery issues could proceed in parallel with industry efforts to develop standards and technology. The cost recovery proceeding should identify the likely costs of achieving compatibility, explore the merits of possible funding mechanisms (including surcharges and centrally administered funds), and assess means of assuring that individual industry segments do not bear more than their equitable share. Input from state regulators and PSAP providers should be solicited in order to develop a uniform, nationwide approach that promotes the continued availability of affordable wireless services.

⁸⁰ PCIA at 28.

⁸¹ Bell Atlantic at 12; Nextel at 7.

⁸² GTE at 31-32. See also BellSouth at 20-21 (seeking a separate rulemaking); Northern Telecom at 62 (recommending that cost recovery issues be addressed in a negotiated rulemaking); Pacific Bell at 3 (suggesting that a national fund be established, which would be subsidized by wireless equipment sales); Rural Cellular Association at 9.

3. Liability.

AT&T's initial comments asked the Commission to insulate wireless service providers from liability for delivering 911 calls to the LEC, including any liability for complying with any priority requirements, violating the calling party's privacy interests, and providing incomplete or inaccurate information.⁸³ Such a limitation is particularly warranted in the wireless context, where external factors such as interference, fading, and battery power can impede the ability to deliver calls or produce misleading information.⁸⁴ The need to address liability was emphasized by numerous other commenters, many of which stated that wireless service providers should enjoy the same immunity from liability that is afforded to landline local exchange carriers.⁸⁵

⁸³ AT&T also noted that the provision of calling name and location information could be found to violate Public Law 103-414, the Communications Assistance for Law Enforcement Act. AT&T at 41 n. 60; see also Southwestern Bell at 25-26. The Commission may wish to address this issue as part of a separate proceeding on liability, if one is instituted.

⁸⁴ See Motorola at 17-18 (noting that sixty percent reliability is the maximum that can be expected for future location technology).

⁸⁵ See Bell Atlantic at 11 (address liability issues in a future proceeding); BellSouth at 20 (hold wireless carriers harmless); CTIA at 20-21; Nextel at 9; PCIA at 27-28; Southwestern Bell at 24-25 (treat wireless carriers the same as landline carriers).

AT&T supports the liability limitation discussed at the JEM, which PCIA referenced in its opening comments.⁸⁶ Accordingly, the Commission should adopt this provision as part of its rules, and should give it preemptive effect in order to assure consistent treatment of service providers throughout the country. Alternatively, the Commission should seek comment on adopting the JEM language, if it believes doing so is necessary to satisfy APA requirements.

4. Preemption.

In its opening comments, AT&T asked the Commission to preempt state regulation in two respects. First, it sought preemption of technical requirements in order to assure nationwide consistency of compatibility technology, which will be particularly important in order to provide universal 911 access to roamers. Second, it asked the Commission to preempt state and local zoning restrictions that would interfere with the deployment of location technologies at cell sites.⁸⁷ The record strongly supports federal preemption. Numerous parties -- including, notably, the California Public Utilities Commission -- echoed AT&T's concern that preemption was necessary to guarantee that roamers can access 911 services.⁸⁸ Other commenters

⁸⁶ PCIA at 27-28.

⁸⁷ AT&T at 41-42.

⁸⁸ See California PUC at 6; GTE at 30-31; Nextel at 8; PCIA at 27; Southwestern Bell at 23-24.

explained that preemption is needed to assure nationwide compatibility of equipment and to avoid imposing undue burdens on manufacturers.⁸⁹

In general, the only parties opposing preemption were a few local emergency service providers, who presumably want to retain the ability to impose greater requirements on wireless service providers.⁹⁰ Granting such flexibility, however, would greatly complicate the development of standards and equipment. Manufacturers simply cannot produce equipment on a cost-effective basis if each PSAP provider can dictate its own unique performance requirements. Rather, equipment should be required to meet uniform compatibility criteria agreed to by PSAP providers, wireless carriers, and manufacturers in consensus industry processes, and the Commission should preempt imposition of inconsistent requirements by local operators.

AT&T also reiterates its call for preemption of state and local zoning restrictions. The technology developed to provide location information almost certainly will require modifications or additions to base station antennae. Given the difficulty in obtaining site approval faced by wireless carriers in many

⁸⁹ See APCO at 52; Redcom at 19; TIA at 5.

⁹⁰ See Caddo Parish at 6-7 (FCC requirements should not be inconsistent with state and local policies); Oregon State Police at 6 (opposing preemption); Texas Advisory Committee at 12 (FCC should negotiate with states).

jurisdictions, preemption will be essential to assure nationwide compatibility.⁹¹

IV. THE COMMISSION SHOULD SEGMENT THIS PROCEEDING, MOVE MLTS ISSUES FORWARD BY COOPERATIVE MEANS AND POSTPONE RESOLUTION OF WIRELESS SERVICES ISSUES UNTIL MORE IS KNOWN ABOUT TECHNOLOGICAL POSSIBILITIES.

Although it is apparent from the comments that a great deal of work has to be done regarding compatibility of both MLTS and wireless services with Enhanced 911 Calling, it is equally apparent that the MLTS issues are substantially more capable of near term solution than are the wireless services issues.⁹² Accordingly, AT&T supports TIA's suggestion that this docket be split into those two segments.⁹³

AT&T also supports the proposals to move the MLTS issues forward toward resolution by means other than more pleadings. TIA recites the various cooperative activities that have occurred and are on-going and urges that such efforts are a better way to resolve complex technical issues than formal rulemakings.⁹⁴

⁹¹ See also CTIA Petition for Rulemaking, Amendment of the Commission's Rules To Preempt State and Local Regulation of Tower Siting for CMRS Providers, RM-8577 (filed Dec. 22, 1994).

⁹² This assumes, as discussed above, that outpulsing the CESID of the wireless PBX antenna picking up the call is sufficient. If additional location information is required, the technical problems are the same as for wireless services.

⁹³ TIA at 7.

⁹⁴ Id. at n. 4.

Ad Hoc makes the suggestion that a Federal Advisory Committee would be a useful way to marshal relevant information and expertise.⁹⁵ BellSouth makes a similar proposal for a "task force comprised of affected groups" to address database issues, while Ameritech urges industry fora on the dialing sequence to access 911 calling.⁹⁶ Another approach is Northern Telecom's proposal for a negotiated rulemaking.⁹⁷ Because there is general agreement on goals and no incentive to delay, such a rulemaking might be a good vehicle for developing appropriate rules in a timely manner.⁹⁸ A variant on that idea is Redcom's proposal for forums in various areas of the nation followed by a redraft of the rules based on knowledge thereby gained.⁹⁹

The Commission should select one or more of these approaches, establish deadlines, and monitor progress. Staff participation in these activities should be encouraged. At the conclusion of those activities, the Commission should be in a position to propose comprehensive MLTS rules that merit the support of all affected interests and serve to protect the health and safety of the public.

⁹⁵ Ad Hoc at 12-13.

⁹⁶ BellSouth at 9; Ameritech at 4.

⁹⁷ Northern Telecom at 17-18.

⁹⁸ Id.

⁹⁹ Redcom at 7-8.

With respect to wireless services, the Commission must recognize that compatibility technology is too immature to support imposition of rigid regulatory deadlines. Accordingly, the Commission should proceed with resolution of the policy issued discussed in Section III. B, supra. Concurrently, the Commission should encourage joint industry/PSAP efforts to develop standards and field-test technology. To assure continued progress of the work begun in the JEM, the Commission can detail staff to attend meetings and require periodic status reports. However, it should not mandate compliance deadlines or technical design requirements until the industry has reached consensus on effective and efficient technologies.

V. CONCLUSION.

The comments overwhelmingly demonstrate that the Commission's proposed MLTS rules are not the appropriate solution to MLTS compatibility issues and that much more work must be done before it is possible even to propose wireless service compatibility rules. AT&T as well as the other commenters share the Commission's objective of improving the ability of Enhanced 911 Calling service to protect the health and safety of the public. The Commission will achieve that objective as

effectively, rapidly and practically as technology permits if it follows the suggestions in AT&T's comments and reply comments.

Respectfully submitted,

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