the devices related to 911 calls.[230]

109. The parties to the Consensus Agreement note that the Commission was less firm with its proposal in this area, partly owing to uncertainty about the extent to which wireless compatibility would be a function of subscriber equipment versus network infrastructure and features. Acknowledging that wireless compatibility, at least with respect to cellular telephony, is likely to proceed on a network implementation basis in the near term, the parties to the Consensus Agreement agree to work on methods and language for consumer education that would not depend on equipment labelling.[231]

110. In their comments regarding the Consensus Agreement, BellSouth and Nextel support the Consensus Agreement, while CTO contends that consumer education should be in addition to equipment labelling.[232]

b. Discussion

111. It appears from the Consensus Agreement comments that E911 will generally be implemented by network-based technology, rather than by modification of handsets. Therefore, we find that the proposals in the *Notice* for equipment requirements, approval, and labelling, which were based on the possibility that handsets might have to be modified, are not presently necessary for the implementation of E911 and that any labelling carried out pursuant to our requirements might in fact be confusing to customers. Consequently, we will not implement such requirements, but instead will require the parties to work on alternative methods of customer education so that they will be available prior to the implementation of E911 service.

112. Education will be an extremely important element in consumers' understanding both the capabilities and limitations of wireless E911 services as well as the differences between the wireless and wireline systems. Consumers should be informed how to place a 911 call, and under what circumstances a 911 call will not be completed. Among other things, consumers should also be informed of their ability to reprogram their handsets to enable them to use either carrier in a cellular area, as well as the charges that could result from such reprogramming. In the Further Notice, we seek comment regarding the role of consumer education in improving the effectiveness of wireless 911 services. In particular, we seek comment regarding possible requirements for covered carriers to engage in consumer education or labelling with respect to specific areas of potential consumer confusion.

C. Specific E911 Technical and Other Issues

230 TX- ACSEC Reply Comments at 6.

231 Consensus Agreement at 5.

232 BellSouth Comments at 11; Nextel Comments at 7-8; CTO Comments at 3-4.

1. Call Priority

a. Background and Pleadings

113. In the *Notice*, we sought comment on our proposal to require that, one year after the Order, originating 911 calls must be assigned priority over non-emergency service calls. We explained that this priority would be assigned at the handset and would place the 911 call at the beginning of any queue for calls waiting to be placed in the mobile radio network. We asked commenters to address whether this capability would require any major equipment modifications or whether existing systems currently have this capability. Commenters were also requested to discuss the technical feasibility and cost of establishing priority for 911 calls in new and existing mobile radio networks.[233]

114. Commenters generally agreed that 911 call priority is an important element of wireless access to E911 service.[234] However, commenters expressed diverse views on the issue of whether the proposed one year implementation date is achievable and whether the assignment of priority at the handset is appropriate. While some commenters supported our proposal without objection,[235] most commenters differed on the implementation of this feature. Several cellular handset manufacturers and service providers opposed the proposal that priority should be assigned from the handset.[236]

115. Commenters also contended that implementation of a priority system will require longer than a year because of the need for network equipment upgrades.[237] Some commenters proposed alternative timetables for development of the call priority feature.[238] Other commenters

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[233] *Notice*, 9 FCC Rcd at 6178 (para. 44).

[234] *See, e.g.*, APCO Comments at 39; TX-ACSEC Comments at 10; PCIA Comments at 11; Motorola Comments at 22-23; APC Comments at 3; CMT Comments at 3-4; Westinghouse Comments at 5; ICSAR Comments at 5.

[235] *See, e.g.*, APCO Comments at 39-40; CMT Comments at 3-4; Westinghouse Comments at 5; ICSAR Comments at 5.

[236] *See, e.g.*, Nortel Reply at 12-13; AT&T Comments at 26; BellSouth Comments at 19; Ericsson Comments at 4; PCIA Comments at 9; SBC Comments at 10; NYNEX Comments at 12; Pacific Telesis Comments at 4.

[237] *See, e.g.*, PCIA Comments at 11; AT&T Comments at 26-27; Bell Atlantic Comments at 9-11; CTIA Comments at 13-14; Motorola Comments at 23; Nortel Comments at 54-55.

[238] *See, e.g.*, Motorola Comments at 22-23 (suggesting that a reasonable time frame is no sooner than 2 years after the Order); Ericsson Comments at 4-5 (arguing that a three year time frame is a more realistic assessment of the time necessary to accomplish the goal.).

suggested that the Commission should defer this issue to an industry committee.[239] Similarly, some commenters contended that the Commission should urge industry bodies to continue their work on developing a reasonable and effective call prioritization scheme for wireless services, because coordination among industry experts and the LECs and PSAPs is required to investigate various priority problems, such as call queuing and call flow control (throttling). PCIA, for example, noted that mobile networks currently are incapable of either prioritization or queuing calls.[240] It further argued that, even assuming that call queuing and call priority were both fully implemented, there remains the problem of throttling. For example, numerous mobile customers would simultaneously report an emergency situation via 911. All of these calls would jump to the head of the calling queue, thereby overwhelming both the LEC and the PSAP. In the meantime, another 911 call from a totally different area might be squeezed out. Therefore, the parties contended that the network should recognize this case and insert the new call into the queue in a higher priority position than the existing calls.[241]

116. Some commenters expressed concern that absolute call priority for 911 calls may not be appropriate and even counter-productive, considering certain policy issues.[242] For example, APC contended that call prioritization and the effect on carrier liability is an important issue that requires Commission awareness.[243] Other commenters urged that the Commission should consider the impact of 911 call priority upon national security and emergency preparedness (NS/EP) calls during disasters, suggesting a relative priority scheme needs to be devised rather than an absolute priority for 911 calls.[244] The parties also noted that the Cellular Priority Access Advisory Committee, composed of government representatives, manufacturers and service providers, is currently undertaking an effort to address implementation of prioritization.[245] Therefore, the parties urged the Commission to withhold any final decision on the 911 call priority issues, specifically the relative priority assignment issue, until the Advisory Committee resolves the issues involving NS/EP calls.[246] The Consensus Agreement does not address the issue of call priority.

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[239] *See, e.g.*, CTIA Comments at 13-14; Southern Comments at 7; AT&T Comments at 27; GTE Comments at 14-15.

[240] *See, e.g.*, PCIA Comments at 9; CTIA Comments at 13.

[241] *See, e.g.*, PCIA Comments at 9-11; APC Comments at 3-4.

[242] *See, e.g.*, NCS Comments at 3-5; ALLTEL Comments at 2; AT&T Comments at 26; CTIA Comments at 13-14; PCIA Comments at 9-11; Century Reply Comments at 8.

[243] APC Comments at 4.

[244] *See, e.g.*, Motorola Comments at 23-24; NCS Comments at 7-8; Nortel Reply Comments at 12-13.

[245] *See, e.g*, NCS Comments at 7-8; Nortel Comments at 12-13.

[246] *See, e.g.*, NCS Comments at 7-8; Motorola Comments at 24; Nortel Reply Comments at 12-13; Ericsson Comments at 4-5.

b. Discussion

117. As recognized in the *Notice*, we believe that call priority for wireless 911 calls is an important aspect of promoting public safety. The comments on the issue of call priority generally agree that call priority should be established for wireless 911 calls. We recognize, however, that the technology for call priority is complex. For example, commenters claim that mobile networks are currently incapable of prioritizing or queuing calls.[247] Commenters also describe the difficulty of determining whether 911 calls should have priority over other non-emergency calls such as calls to a suicide hotline.[248] Further, some commenters argue that priority should not be given to 911 calls which are duplicate reports of the same accident.[249]

118. As pointed out by the Secretary of Defense, there are ongoing discussions by the Cellular Priority Access Advisory Committee, composed of industry and Federal and state government representatives under the NCS, to establish a uniform nationwide method of providing access for mobile subscribers.[250] On October 12, 1995, the NCS filed a Petition for Rulemaking, requesting the Commission to adopt rules to provide priority access to cellular spectrum for National Security/Emergency Preparedness (NS/EP) responsiveness. Specifically, the NCS requested that the Commission establish the Cellular Priority Access Service (CPAS). The Petition proposes that authorized NS/EP users would be permitted to obtain access to cellular radio channels ahead of non-NS/EP users when cellular network congestion is blocking NS/EP call attempts. In order to obtain priority access, the authorized user would dial a feature code. CPAS calls would not preempt calls in progress.[251]

119. In view of the complexity of the issues as pointed out by the commenters and in view of the possibility of interference with the Secretary of Defense's efforts to develop priority standards for national security and emergency preparedness, we shall not develop E911 call priority standards at this time. We encourage the wireless industry and public safety organizations to continue working to resolve the technical and other issues associated with 911 call priority, and its relationship to national security and emergency preparedness needs. We will revisit the issue of call priority for wireless E911 in conjunction with the call priority issues raised by the NCS Petition for Rulemaking with respect to priority access.

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247 *See, e.g.*, PCIA Comments at 9; Ericsson Comments at 4-5; Northern Telecom Reply Comments at 12-13.

248 *See, e.g.*, PCIA Comments at 10; Century Reply Comments at 8.

249 *See, e.g.*, PCIA Comments at 10; CTIA Comments at 13-14; APC Comments at 4.

250 NCS Comments at 7-8.

251 Public Notice, Commission Seeks Comment on Petition for Rulemaking Filed by National Communications System, WT Docket No. 96-86, DA 96-604, April 18, 1996.

2. Grade of Service

a. Background and Pleadings

120. The term ``grade of service'' refers to the percentage of calls between the mobile transmitter and the PSAP that are blocked either within the radio or the wireline network. The interconnection of a mobile radio transmitter call with a PSAP attendant may involve several interconnecting networks, including mobile radio links and the wireline public switched telephone network (PSTN). In the *Notice*, we proposed that standards bodies should investigate technical solutions or other strategies to ensure minimal blocking of 911 calls from mobile radio transmitters. Recognizing that any overall grade of service objective will require a cooperative effort between the initiating, interconnecting, and terminating systems, we tentatively concluded that Federal standards are not warranted at this time. We sought comment on this assessment and requested that commenters advocating Federal standards should describe how grade of service would be defined, and discuss any jurisdictional implications of imposing such standards.[252]

121. Commenters representing the wireless industry generally supported our initial view that Federal grade of service standards need not be promulgated at this time for various reasons.[253] Some commenters asserted that grades of service of wireline 911 networks differ from jurisdiction to jurisdiction.[254] Several commenters contended that any grade of service objective requires a cooperative effort between responsible service providers and users.[255] Other parties argued that the competitive market will provide a grade of service standard which any wireless service provider must meet.[256]

122. APCO and other public safety groups, on the other hand, argued that the Commission should adopt Federal grade of service standards.[257] These commenters contended that a wireless 911 caller reasonably expects the same grade of service that is expected from a

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252 *Notice*, 9 FCC Rcd at 6178 (paras. 42-43).

253 PCIA Comments at 8-9; APC Comments at 3; RCA Comments at 9-10; SBC Comments at 9-10; CMT Comments at 3; Pertech Comments at 6.

254 Pertech Comments at 6.

255 PCIA Comments at 8-9; APC Comments at 3; RCA Comments at 9-10.

256 SBC Comments at 9-10 (claiming that competition in the wireless market demands that the amount of blocked calls be as minimal as possible.).

257 *See* APCO Comments at 39; TX-ACSEC Comments at 9; ICSAR Comments at 5.

wireline phone.[258] Thus, the parties suggested that a grade of service of one busy signal per one hundred 911 call attempts in the average busy hour should be adopted as a Federal standard, noting that this requirement is compatible with most state and local grade-of-service requirements for E911 access.[259] Some commenters requested that if grade of service is addressed in the Report and Order, the Commission should simply require that wireless 911 grade of service be equivalent to the wireline grade of service being provided within the same locale.[260] Other commenters urged the Commission to adopt system requirements for functions like total transmission time and database availability.[261] None of the parties advocating Federal standards discussed the jurisdictional implication of imposing such standards.

123. In its comments regarding the Consensus Agreement, US West supports a procedure to resolve implementation issues at the local level in the first instance, while Motorola urges that any standards for wireless location technologies be compatible with all radio frequency technologies.[262]

b. Discussion

124. As discussed in a previous Section,[263] we agree with the parties that contend that Federal standards regarding grade of service for 911 service are not warranted at this time. The nature of the issue requires a level of expertise and consultation among the parties that can best be achieved through discussions and proceedings of standard-setting bodies, which the parties indicate are already in progress. In addition, requiring a grade of service for 911 calls which is superior to the current grade of service may require the implementation of special technologies, especially call priority. Therefore, we conclude that the interested parties should develop standards by mutual agreement or by submission to standard-setting bodies.

125. We intend, however, to track the industry's progress in achieving a grade of service standard for 911 service, and will provide whatever assistance our resources permit. In that connection, we shall require the signatories to the Consensus Agreement, PCIA, and Alliance to furnish the Commission with reports detailing the status of the discussions involving the grade of service, what decisions have been made by standard bodies or through mutual agreement among

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[258] *See, e.g.,* TX-ACSEC Comments at 9.

[259] APCO Comments at 39; *See* TX-ACSEC Comments at 9 (arguing that a P. 01 grade of service should be required for the mobile radio network portion of the cell.).

[260] Pertech Comments at 6.

[261] ICSAR Comments at 5.

[262] US West (CA) Comments at 8-9; Motorola (CA) Comments at 7-8.

[263] *See* Section IV.B.1.b.(4), *supra.*

the interested parties, and what can be done to expedite the resolution of the issues. Such reports must be filed not later than 30 days following the end of each annual period after the effective date of the rules adopted in this proceeding, and if sufficient progress has not been made, we shall take appropriate action. With the wireless systems operating in different technical, operational, and jurisdictional environments, we believe details on grade of service need further review. This careful review can best be accomplished through these consultative processes, with significant Commission input, rather than by a Commission decision based on a paper record.

3. Common Channel Signalling

a. Background and Pleadings

126. In the *Notice*, we noted the conclusion of the Joint Paper that radio transmissions of 911 calls eventually should be capable of providing the same or similar information and features currently available from wireline calls over E911 systems. In addition to the ALI and call back information discussed above, we proposed that some or all of the following information should be furnished to the PSAP: (1) call back number and the mobile transmitter subscriber's name; (2) class of service, *e.g.*, residence, business, etc.; (3) base station provider's name and telephone number; (4) priority of the caller, *e.g.*, hospital, school, *etc.*; (5) routing information to direct the call to the proper PSAP (primary and secondary PSAP identifiers); and (6) transfer numbers, *i.e.*, separate numbers to allow transfer of calls to police, fire and ambulance services. In the *Notice*, we requested comment on the feasibility of these features, which would permit radio transmission systems to interface fully with wireline E911 systems. To facilitate full interface between the wireless and wireline networks, we proposed and solicited comment on the requirement to implement common channel signalling (CCS) capabilities within three years after the Order.[264] Commenters were asked to discuss whether the reliability of 911 technology will be hampered if 911 services are transferred to CCS, and how the issue of CCS for 911 services would affect the survivability of 911 SS7-based calls during a CCS outage.[265]

127. Commenters expressed diverse views on the proposal to require CCS capabilities within three years. Some commenters supported the proposed rule and timetable, arguing that current features and standards that exist today for SS7 networks are applicable to E911 service.[266] APCO, for example, argued that the use of an expanded SS7 would provide a more reliable

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[264] CCS is a network architecture supported by numerous protocols. SS7, or Signalling System 7, is the primary signalling protocol used by the wireline network.

[265] *Notice*, 9 FCC Rcd at 6179-80 (para. 53). We indicated that the Network Reliability Council has recommended that, before 911 calls are handled by SS7, standards bodies must determine whether additional standards are needed for the SS7 protocol. *Network Reliability: A Report to the Nation*, Network Reliability Council, Federal Communications Comm'n, June 1993, Section F, at 16.

[266] *See, e.g.*, APCO Comments at 45-49; TX-ACSEC Comments at 11; Coast Guard Comments at 5-6.

method for processing E911 calls than waiting for CCS.[267] At the same time, the parties recognized that additional new standards will need to be developed to define data elements and processes for handling and transporting E911 calls through the network.[268] Other commenters contended that requiring CCS capabilities within three years is inappropriate because of the cost involved and the fact the standards have not been set. SBC, for example, contended that the cost of implementing CCS capabilities to perform the wireline type functions for wireless will be substantial and urged the Commission to refer this issue to industry standards committees and industry forums.[269]

128. Many commenters noted that the wireless industry currently lags behind the wireline industry in implementation of CCS and does not necessarily employ consistent protocols. PCIA and Motorola, for example, noted that while SS7 is prevalent on wireline networks, wireless networks often use different protocols, with some using SS7 but most using IS-41. Motorola notes further that PCS networks are expected to deploy SS7.[270] Because of the need for coordination among industry members in the implementation of the common channel signalling capabilities, some commenters recommended that the Commission not tie the implementation to the effective date of these rules, but rather to the joint development of a universal CCS or interworking platform.[271]

129. Commenters also expressed concern over the proposal that wireless carriers would be required to provide the same or similar information and features that are currently provided by wireline carriers to E911 systems. Many commenters contended that certain information about the subscriber would be unnecessary and may be counterproductive in wireless 911 situations.[272] SBC, for example, pointed out that the overwhelming majority (as high as 97 percent) of wireless 911 calls are placed by Good Samaritans where the caller is a stranger to the incident and is not necessarily waiting at the site of the incident.[273] In such cases, commenters contended that information about the subscriber is not critical and may discourage such Good Samaritan calls from people who want to assist in an emergency but do not want to ``get involved" personally.[274]

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267 APCO Comments at 48.

268 *See, e.g.,* APCO Comments at 49; TX-ACSEC Comments at 11.

269 SBC Comments at 21-22.

270 PCIA Comments at 22-23; Motorola (CA) Comments at 4..

271 *See, e.g.,* PCIA Comments at 23; GTE Comments at 27; AT&T Comments at 37; CTIA Comments at 14-15; Nextel Comments at 5; SBC Comments at 22.

272 *See, e.g.,* SBC Comments at 21-22; PCIA Comments at 23; CTIA Comments at 14-15.

273 SBC Comments at 21.

274 *Id.*

130. Other commenters contended that this issue requires substantial study and cannot be rationally addressed without extensive coordination and consideration by the relevant parties.[275] For example, CTIA contended that enormous costs would be incurred by both PSAPs and carriers to achieve the necessary modifications and upgrade, because routing information as well as transfer number data available on the wireline-side are based upon the street address of the originating telephone, which is of very limited utility in a mobile context.[276] Thus, the parties contended that the Commission should rely on the JEM process to determine what information should be provided to the PSAP and how that information should be transmitted, given differing implementation of signalling protocols in landline and wireless networks.[277] PCIA, for example, urged that the Commission allow the wireless industry and the 911 community to agree on the scope of information that ultimately will be provided, rather than specifying the required information in its rules at this stage.[278] Some commenters also contend that CMRS providers should not be required to implement the new features until PSAP operators are equipped to handle the information that would be transmitted by the CMRS provider.[279]

b. Discussion

131. In their comments, the wireless service providers and associations contend that common channel signalling should be addressed by the parties rather than determined by the Commission. For example, they point out that common channel signalling will require cooperation by wireless carriers, LECs and PSAPs.[280] As discussed in a previous Section,[281] we agree that issues involving the interfaces and signalling systems to be deployed should, for the present, be resolved by the interested parties through mutual agreement or by submission to standards bodies. We note that under our Phase I E911 implementation plan, covered carriers must transmit a caller's ANI, which provides the PSAP with call back capability. As we explained above, transmission of ANI does not require implementation of SS7, but standards setting bodies are scheduled to consider SS7 protocols for ANI in the very near future. We also

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275 *See, e.g.*, PCIA Comments at 23; CTIA Comments at 14-15; Nextel Comments at 5; Southern Comments at 8; Springwich Comments at 12.

276 CTIA Comments at 14-15.

277 *See, e.g.*, PCIA Comments at 23; CTIA Comments at 14-15 (arguing that referral to an industry forum for further study is appropriate.); CMT Comments at 9 (urging the Commission to defer implementing this proposal pending completion of analysis by the industry board.).

278 *See, e.g.*, PCIA Comments at 23.

279 SBMS Comments at 8.

280 *See, e.g.*, PCIA Comments at 22-23; Nextel Comments at 5.

281 *See* Section IV.B.1.b.(4), *supra*.

note that under our rules requiring that location information be provided to the PSAP within five years, it will be necessary for the parties to develop whatever signalling standards are necessary to transmit that data. Once the parties have determined what signalling standards will be adopted, we shall consider whether further information should be furnished to the PSAP.

132. We intend, however, to track the industry's progress of common channel signalling, and will provide whatever assistance our resources permit. In that connection, we shall require each of the signatories to the Consensus Agreement, PCIA, and Alliance to furnish the Commission with reports detailing the status of the issues involving the interfaces and signalling systems to be deployed for E911 services, what decisions have been made by standard bodies or through mutual agreement among the interested parties, and what can be done to expedite the resolution of the issues. Such reports must be filed not later than 30 days following the end of each annual period after the effective date of this Order of the rules adopted in this proceeding, and if sufficient progress has not been made, we shall take appropriate action.

V. FURTHER NOTICE OF PROPOSED RULEMAKING

A. Background

133. As stated in the previous Sections, the 911 and E911 rules we have adopted in the Report and Order are a first step toward the goal of meeting the Nation's public safety communications needs by ensuring that 911 and E911 services are as widely available as possible and that these services take advantage of advances in communications technology. We have concluded, however, that we also should immediately begin the task of exploring the need for further action to spur improvements in the features and delivery of these services.

134. Some of the rules we have adopted in the Report and Order have a somewhat limited scope, in part because of insufficient information in the present record regarding the ability of wireless carriers to implement more stringent requirements within the short term. We believe that the next phase of this proceeding should seek to improve on this record, and should focus on the issue of whether the standards and requirements we are adopting today can be expanded. Specifically, we intend to examine whether requirements can be developed under which carriers will deliver more precise location information to PSAPs, and whether it will be possible to establish standards governing the speed at which such information must be delivered and the extent to which the information must be monitored and updated by the carrier to ensure its accuracy.

135. As we have often observed throughout this proceeding, one of the principal issues we have set out to resolve is the problem of locating the mobile caller in emergency situations. The next phase of our inquiry will continue our effort to establish standards for the efficient use of communications technology to improve the accuracy and reliability of this location information. We also intend to examine how consumers can be educated to know the capabilities as well as the limitations of wireless services when they are used to call 911. We expect that this rulemaking will result in 911 service which will enhance the health and safety of the Nation's

citizens.

B. Discussion

1. Location Information Technology

136. One of our objectives is to ensure that wireless E911 continues to benefit from improvements in location information technology, while also striving to make sure that covered carriers' development and application of new technologies for E911 services also contribute to the overall quality of service and range of services that carriers provide to all their customers. Such an objective is consistent with our responsibility under the Communications Act to provide for the management of the spectrum in a manner that serves national public safety needs. Based on the present record, we have adopted requirements under which carriers must supply to PSAPs, not later than five years after the effective date of the rules adopted in the Report and Order, information that locates a wireless 911 caller within a radius of 125 meters, using longitude and latitude data, and that provides this degree of accuracy for 67 percent of the 911 calls processed.

137. We believe it is advisable to begin considering at this time whether requirements establishing a higher degree of ALI accuracy should be adopted before the end of the five-year Phase II period, to take effect immediately after the close of that five-year period. Establishing such requirements now, rather than at a later time closer to the end of the five-year period, will act as an incentive to spur continuing efforts to develop improved location information technologies. In addition, triggering debate and discussion in the industry and the public safety community at this juncture through initiation of this further rulemaking proceeding will serve to ensure a full and detailed consideration of the range of location information technologies that are likely to be feasible.

138. Based upon these considerations, we propose that covered carriers should be required to achieve the capabilities necessary to provide to PSAPs, after the initial five-year period, information that locates a wireless 911 caller within a radius of 40 feet, as recommended as a long term goal in the JEM Report,[282] using longitude, latitude, and vertical location data, and that provides this degree of accuracy (for longitudinal and latitudinal data and for vertical location data) for 90 percent of the 911 calls processed. We also propose that the described requirements should apply only if (1) a covered carrier receives a request for E911 services from the administrator of a PSAP that is capable of receiving and utilizing the data elements associated with the services; and (2) a mechanism for the recovery of costs relating to the provision of such services is in place.

139. We propose to adopt a standard of 90 percent accuracy, within a radius of 40 feet, at the end of the initial five-year period, based on our estimate that such a standard will be feasible at that time. We seek comment on the reasonableness of this estimate. Specifically, we ask

[282] JEM Report at 7-8.

commenters to assess the current state of relevant technology, and to evaluate assumptions that can be made with respect to the evolution of this technology during the next five years. In that regard, we note that one manufacturer, KSI, claims that it is already possible to implement location technology that can identify a 911 caller's location with a reliability of 90 percent.[283]

140. Commenters arguing that 90 percent accuracy is not realistic should suggest alternative accuracy standards that would improve the 67 percent standard that we have adopted in the Report and Order. We also seek further comment regarding our proposal to establish standards for location information that require location within a radius of 40 feet. Commenters have suggested that altitude information may prove most beneficial in urban areas.[284] Therefore, we seek comment regarding whether it would be appropriate to limit a requirement for providing this type of location information to certain geographic areas. Alternatively, we seek comment whether it would be appropriate to give local PSAPs the option of obtaining location information in three dimensions. We also seek comment on whether other requirements are preferable to those we are proposing, or whether there are other methods of achieving improved accuracy without the setting of any specific requirements. Given the concerns we have noted regarding the relationship between the development and application of ALI technology for E911 services and the overall quality of service and range of services that covered carriers provide to all their customers, we also ask commenters to address the relative costs and benefits associated with imposition of the specific requirements we are proposing.

141. To the extent that a new technology would substantially advance the quality of E911 service to the public, we believe that the public interest is served by expediting the introduction of this technoloby in E911 networks. Specifically, we seek comment on the following issues: (1) What estimates can be made regarding the additional costs that would be incurred by carriers to upgrade ALI technology in order to achieve a higher percentage rate of reliability in determining the location of wireless 911 callers? (2) Similarly, what level of additional costs would be associated with upgrading location technology to include vertical location data? (3) Will these increased levels of cost be adequately accommodated by the state and local cost recovery mechanisms that will be established? (4) Will other benefits -- in addition to improvements in the delivery of 911 assistance -- be derived from these technological upgrades?

142. We also seek comment regarding the development of a minimum latency period to ensure that public safety personnel are informed of callers' locations in time to act in the emergencies that they confront. In addition, commenters should address whether updating of location information throughout the duration of a 911 call may be technically feasible and

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283 KSI (CA) Reply Comments at 5.

284 *See, e.g.,* APCO Comments at 42 (arguing that the Commission should adopt an ultimate location accuracy requirement of 10 meters with a 95 percent confidence factor, applying to both horizontal and vertical accuracy); TX-ACSEC Comments at 10 (suggesting that a 10 meter radius in three dimensions would be a better goal, because it would narrow the location to within three floors in a building).

useful. KSI's proposal of a latency period of 5 seconds, and an updating of the location information every 10 seconds, may serve as a useful starting point. We therefore request comment on these proposals, including their use and feasibility, and any other alternative proposals on these issues. We note that the Commission has not chosen a specific technology for providing ALI, and we therefore seek comment regarding the impact of latency or updating requirements on various technologies under development. We request that commenters addressing these issues provide supporting engineering analyses.

143. Further, in addition to proposing specific requirements to be implemented within a reasonable time after the five-year period, we wish to ensure that sufficient mechanisms are in place to give covered carriers proper incentives to implement state-of-the-art communications technology, as that technology becomes available, in connection with the provision of E911 services. We therefore request comment regarding what types of monitoring mechanism the Commission should adopt to ensure that carriers are developing and deploying state-of-the-art technology. One method under which the Commission could monitor the development, application, and deployment of state-of-the-art technology, as well as the effects of this technology on the quality of wireless E911 service, would be to establish reporting requirements under which covered carriers would periodically inform the Commission of developments relevant to the provision of E911 services. When new technology is reported to be available, we could require that it be deployed if the benefit exceeds the cost, unless the limited availability of the technology makes the deployment impractical. We seek comment regarding whether such reporting requirements and the requirement for deployment of new technology should be adopted. We also recognize that there may be other ways to achieve the same goals while also minimizing administrative burdens faced by covered carriers or the Commission. Commenters are invited to discuss any other possible ways to monitor the quality of wireless 911 service.

2. Access to 911 Service via Multiple Mobile Systems

a. Technical Issues

144. In its Petition, Alliance raises a number of technical issues concerning interoperability between cellular systems and the problems that could be created for users of these systems trying to make 911 calls. Specifically, Alliance indicates that the service area of all wireless systems contains ``blank spots,'' that is, areas where a system's radio signal is very weak or non-existent. Alliance's solution to this problem is to require 911 calls to be sent to the cellular system with the strongest control channel signal.[285] While we believe there is a broader issue beyond that raised by Alliance, as discussed below, we seek comment on Alliance's specific

[285] Alliance Petition at 3. We recognize the significance of Alliance's concern regarding the existence of ``blank spots'' with respect to a cellular system's radio signal. In support of its contention, Alliance submits tests which purport to show that significant portions of major cities either cannot be reached via the signal of one carrier or another, or can only be reached with a poor signal. Thus, Alliance contends, a requirement that a 911 cellular call be connected to the cellular carrier with the strongest signal in the geographic area involved may be the only means to ensure that a 911 call can be successfully made.

proposal, including the tests contained in its Reply Comments to the Consensus Agreement, especially from a technical feasibility standpoint. If a commenter believes that Alliance's proposal is technically infeasible, it should provide its reasons in detail, with supporting engineering analyses.

145. The issue raised by Alliance, however, is not limited to cellular systems, and could be extended to other mobile services, such as broadband PCS, that will be required to provide 911 access. The generic issue underlying Alliance's concerns is not only one of accessing the *best* system, but one of accessing *any* system, to service a wireless 911 call. Such a call should not be limited to a specific service provider, system, or technology. Rather, ideally, a 911 call should be handled by whatever wireless system is available in the area of need and, if there are multiple systems available, by the one that will provide the quickest and most reliable and accurate response.

146. Common air interface standards currently make cellular systems relatively compatible for 911 calls on all cellular telephones.[286] As cellular systems evolve to digital technology, however, this may no longer hold true. Furthermore, common standards do not exist for broadband PCS systems or between other mobile service systems.[287] Sending a 911 call to the system with the strongest signal assumes that all systems are capable of handling every call. As many commenters point out, a carrier with the best signal in the area may use a different air interface than that used by the handset.[288] Commenters also indicate that it may not be currently possible to transfer a call to another mobile carrier because the systems use different protocols.[289]

147. In order to ensure the broad availability of basic 911 service for wireless customers, we have decided to seek further comment on ways to enable such mobile users to complete a 911 call without regard to the availability (in the geographic area in which they seek to place a 911 call) of the system or technology utilized by their wireless service. To the extent that any mobile

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[286] "Compatibility" means that any cellular mobile telephone is able to place and receive calls in any cellular system; and conversely, all systems are able to place and receive calls for any mobile telephone. *See* Amendment of Parts 2 and 22 of the Commission's Rules to Permit Liberalization of Technology and Auxiliary Service Offerings in the Domestic Public Cellular Radio Telecommunications Service, GN Docket No. 87-390, Report and Order, 3 FCC Rcd 7033, 7038 (para. 36) (1988).

[287] *See, e.g.*, Amendment of the Commission's Rules to Establish New Personal Communications Services, GN Docket No. 90-314, Memorandum Opinion and Order, 9 FCC Rcd 4957, 5021-22 (paras. 162, 164) (1994).

[288] According to AT&T, if phones are automatically programmed to search out the strongest signal, as Alliance proposes, but the carrier possessing that signal is using an incompatible air interface, the subscriber would be unable to complete the call. AT&T Comments on Alliance Petition at 6-7.

[289] Initial PCS technology will be digital as opposed to cellular technology, which is evolving from analog to digital. Cellular carriers currently use three different air interfaces -- the analog AMPS standard, and digital TDMA and CDMA protocols. *See, e.g.*, AT&T Comments on Alliance Petition at 7.

service is available in an area, we seek comment regarding whether it would be desirable to establish arrangements and procedures under which all wireless 911 calls could be handled by the available service. This issue goes well beyond Alliance's concern and proposed solution regarding coverage gaps in cellular service. We recognize, however, that many wireless service providers claim that Alliance's proposal is technically infeasible and without merit. These same parties may likewise have concerns with the broader direction that we are pursuing here. We emphasize that the Commission has chosen not to establish a common technical air interface for broadband PCS, nor has it chosen technical standards for digital cellular service. We have decided that the marketplace should determine which digital protocols will survive, and we do not intend to reach different conclusions in this proceeding.

148. Nevertheless, we seek comment regarding how to achieve the goal of enabling wireless 911 service to be available and accessible wherever a qualifying mobile system is present. Commenters should address issues framed by the mobile services environment as a whole, but should also offer partial solutions, as appropriate, *e.g.*, if the goal can be achieved for cellular but not between and among other mobile systems. Options to explore should consider both equipment and system capabilities. For example, to what extent can dual-mode mobile units enable operation with multiple systems, such as switching between cellular and PCS systems? Or, can a common protocol be developed and incorporated into every mobile system to overcome compatibility or interoperability problems? Currently, cellular handsets are preset to seek the strongest signal from the cellular carrier to which the user subscribes. While the user can manually change this default setting to access the strongest signal from either of two cellular carriers regardless of subscription, it would be useful to apply such feature in all cases for 911 calls without disrupting handling and roaming considerations with respect to other calls. To accomplish this, manufacturers of cellular handsets would have to modify the default settings of these units. The handsets could then automatically route 911 calls to the strongest signal provided by a cellular carrier while all other calls would be handled as determined by the users. We request commenters to address whether such a requirement should be imposed on handset manufacturers and, if so, whether it should be implemented by the Commission in the equipment authorization process.

b. 911 Availability and Consumer Education

149. In this Order, one of our goals is to ensure that as many 911 calls are processed as feasible. Thus, we have determined that, within one-year from the effective date of the rules which are adopted in this Order, covered carriers would be required to transmit to PSAPs 911 calls from wireless handsets that do not transmit a code identification where requested by the PSAP Administrator. The basis for the restriction is that public safety organizations are in the best position to determine whether acceptance of calls from handsets without a code identification helps or hinders their efforts to preserve and promote health and safety in their communities. However, we are concerned that a system under which customers in the same geographic area may or may not be able to complete non-code identification 911 calls depending on the practices of the PSAPs serving that area may generate unnecessary customer confusion. We therefore seek comment on whether, within a reasonable time after the one year period,

covered carriers should be obligated to transmit all such calls even without a request from the PSAP.

150. We acknowledge the possibility that solutions may not be readily developed for improving access to 911 services, such that 911 access may still be limited. In light of these circumstances, we request comment regarding how users can be informed or made aware that not all wireless 911 calls may be processed by carriers and delivered to PSAPs for monitoring and response. One purpose of such a customer education program would be to address a concern that consumers currently may not have a sufficient understanding of technological limitations that can impede transmission of wireless 911 calls and the delivery of emergency assistance. We believe that covered carriers have an obligation to inform their customers regarding the scope of their services, including any such technical limitations of current wireless services in providing access to basic and E911 services, so that customers will be able to determine rationally and accurately the scope of their options in accessing 911 services from mobile handsets, and available alternatives.

151. For example, current cellular handsets are capable of accessing both cellular carriers within a service area. In some cases, however, cellular subscribers have their mobile phones set to restrict access to the alternative carrier, in order to avoid potentially costly roaming charges. It may be useful, however, to educate consumers regarding the potential disadvantage of setting their handsets in such a manner. In other words, a cellular subscriber might want to have his or her handset set to receive signals of both cellular carriers in order to limit the possibility of being in a ``dead spot" when trying to call 911. To the extent 911 access to multiple systems might be accomplished by users programming their mobile units, we seek comment regarding whether handset labelling or instructions should be provided to users about this possibility as well as the need for the customer to be aware of the air time charges that might be incurred.

152. Further, we believe that public education regarding limitations relating to the scope of 911 service, not only in this context but also for the location capability discussed in previous Sections, could be valuable so that customers can be informed of the capabilities and limitations of wireless 911 systems. To this end, we seek comment regarding the extent equipment labelling or detailed service descriptions may be necessary or appropriate to provide this education. We also seek comment regarding whether mobile unit equipment manufacturers should be required to prepare, for inclusion in the packaging of their consumer products, consumer education materials addressing the capabilities and limitations of the mobile units in connection with the ability of the user to make 911 calls. We also seek comment regarding the role that local public safety agencies can play in disseminating information regarding the capabilities and limitations of wireless 911 service.

153. While we are seeking comment regarding actions that could be taken to enable all wireless 911 calls be completed, we recognize that there are difficulties in attaining this objective. The emerging environment of multiple mobile service providers and systems, and the Commission's inclination to provide reasonable flexibility for licensees to develop their services, may contribute to the situation. As noted above, the implementation of our baseline schedule

depends in large part on the actions of state and local government authorities, and is therefore likely to result in significant variation in different jurisdictions. We must find ways, however, to make wireless 911 service as ubiquitous and transparent as possible to the using public. Taking such actions should not only improve 911 service but also promote a more universal, dynamic, and competitive mobile radio industry. We therefore seek comment on solutions that would address this concern.

C. Initial Paperwork Reduction Act of 1995 Analysis

154. This Further Notice of Proposed Rulemaking contains a proposed information collection. As part of its continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget (OMB) to take this opportunity to comment on the information collections contained in this Further Notice, as required by the Paperwork Reduction Act of 1995, Pub. L. No. 104-13. Public and agency comments are due at the same time as other comments on this Further Notice; OMB comments are due 60 days from date of publication of this Further Notice in the Federal Register. Comments should address: (1) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (2) the accuracy of the Commission's burden estimates; (3) ways to enhance the quality, utility, and clarity of the information collected; and (4) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

D. Ex Parte

155. The *Further Notice* is a non-restricted notice and comment rulemaking proceeding. *Ex Parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in the Commission's Rules. *See* 47 C.F.R. Sections 1.1201, 1.1203 and 1.1206(a).

E. Comment Period

156. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments on or before August 26, 1996. Reply comments are due on or before September 10, 1996. To file formally in this proceeding, commenters must file an original and four copies of all comments, reply comments with the reference ``CC Docket 94-102." If they wish each Commissioner to receive a personal copy of their comments, they must file an original plus nine copies. Filings should be sent to the Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Dorothy Conway, Federal Communications Commission, Room 234, 1919 M Street, N.W. Washington, D.C. 20554, or via the Internet to dconway@fcc.gov and to Timothy Fain, OMB Desk Officer,

10236 NEOB, 725 - 17th Street, N.W. Washington, D.C. 20503 or via the Internet to fain t@al.eop.gov. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center (Room 239) of the Federal Communications Commission, 1919 M Street, N.W., Washington, D.C. 20554. Copies of comments and reply comments are available through the Commission's duplicating contractor: International Transcription Service, Inc. (ITS, Inc.), 2100 M Street, N.W., Suite 140, Washington, D.C. 20037, (202) 857-3800.

VI. CONCLUSION

157. In the implementation of wireless E911 service, state and local governments and public safety agencies will play a central role in developing effective E911 solutions. The schedule we are adopting sets a minimum standard which should not impede more rapid deployment or the development of new and improved capabilities and features. The fact that state and local authorities will continue to be responsible for E911 deployment in PSAPs and funding should encourage their ongoing efforts to find better ways to meet emergency needs.

158. The goal in this proceeding has been to make wireless services as comparable as possible to wireline service in E911 access. As technology makes it possible, we will continue to monitor how both wireline and wireless carriers can enhance their crucial roles in ``promoting safety of life and property through the use of wire and radio communication."

VII. ADMINISTRATIVE PROVISION

159. As required by Section 603 of the Regulatory Flexibility Act, the Commission has prepared a Final Regulatory Flexibility Analysis of the Expected impact on small entities of the changes in our rules adopted herein and an Initial Regulatory Flexibility Analysis of the Expected impact on small entities of the proposals contained in the Further Notice of Proposed Rulemaking. The Final Regulatory Flexibility Analysis and the Initial Regulatory Flexibility Analysis are set forth in Appendix B.

VIII. ORDERING CLAUSES

160. Accordingly, IT IS ORDERED that the Rule Amendments specified in Appendix C SHALL BECOME EFFECTIVE 60 days after the date of publication in the Federal Register.

161. IT IS FURTHER ORDERED that the Petition of the Ad Hoc Alliance for Public Access to 911 is GRANTED in part, as set forth in the text of the Order.

162. IT IS FURTHER ORDERED that the signatories to the Consensus Agreement, the Personal Communications Industry Association, and the Ad Hoc Alliance for Public Access to 911 file joint annual reports within 30 days after the end of each calendar year, as set forth in the text of this Order.

163. IT IS FURTHER ORDERED that the signatories to the Consensus Agreement, the Personal Communications Industry Association, and Telecommunications for the Deaf, Inc. file a joint report within one year of the effective date of the rules adopted herein, as set forth in the text of the Order.

164. This action is taken pursuant to Sections 1, 4(i), 201, 208, 215, 303, and 309 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 201, 208, 215, 303, 309.

165. For further information, contact Peter Wolfe of the Policy Division, Wireless Telecommunications Bureau, at (202) 418-1310.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

APPENDIX A

LIST OF COMMENTERS AND ABBREVIATIONS

(1) Initial Comments and Reply Comments on the *Notice*

AACOG (Alamo Area Council of Governments)
Adcomm (Adcomm Engineering Company)
Ad Hoc Telecomm. (Ad Hoc Telecommunications Users Committee, the California Bankers Clearing House and the New York Clearing House Association)
AirTouch (AirTouch Communications)
Alamo (Alamo Area Council of Governments)
Alliance (Consumers First and the Ad Hoc Alliance for Public Access to 911)
ALLTEL (ALLTELL Mobile Communications, Inc.)
Ameritech
AMSC (AMSC Subsidiary Corporation)
AMTA (American Mobile Telecommunications Association, Inc.)
APC (American Personal Communications)
APCO (Association of Public-Safety Communications Officials-International, Inc.)
ART (Associated RT, Inc.)
AT&T (American Telephone & Telegraph)
Bell Atlantic
BellSouth (BellSouth Corporation, BellSouth Telecommunications, Inc., BellSouth Enterprises, Inc. and BellSouth Cellular Corp.)
Caddo (Caddo Parrish Communications District No. One)
Carter (Carter County)
CDC (The Department of Corrections of the State of California)
CNP (Cellular Networking Perspectives, Ltd.)
Century (Century Cellunet Inc.)
C. J. Driscoll (C.J. Driscoll & Associates)
CMT (CMT Partners)
COMSAT (COMSAT Corporation's COMSAT Mobile Communications division)
Constellation (Constellation Communications, Inc.)
Coast Guard (The United States Coast Guard)
Cowlitz (Cowlitz County)
CPUC (The People of the State of California and the Public Utilities Commission of the State of California)
CTIA (Cellular Telecommunications Industry Association)
E.F. Johnson (E.F. Johnson Company)
Elert (Elert & Associates)
Ericsson (Ericsson Corporation and affiliated companies)
GE (GE Capital - RESCOM)
Geotek (Geotek Communications, Inc. and its subsidiaries and affiliates)
Green (Green County Emergency Communications District)
GTE (GTE Service Corporation)

Harris (Harris Corporation)
Harris County (Greater Harris County 911 Emergency Network)
Hillsborough (Hillsborough County, FL)
IAFC (International Association of Fire Chiefs, Inc.)
ICSAR (Interagency Committee on Search and Rescue)
IDB Mobile (IDB Mobile Communications, Inc.)
IMSA (International Municipal Signal Association)
ITS (Intelligent Transportation Society of America)
Jackson County
Kentucky (Kentucky Emergency Number Association)
King County (King County E911 Program Office)
KML (KML Technology, Inc.)
KSI (KSI, Inc.)
Lake County
LEO One USA (LEO One USA Corporation)
LHC (Lake Huron Cellular)
Liberty (Liberty Cellular)
Lockheed (Lockheed Martin, Sanders)
LQP (Loral/QUALCOMM Partnership, L.P.)
Maryland ENSB (Maryland Department of Public Safety and Correctional Services, Emergency Number Systems Board)
MCI (MCI, Inc.)
Motorola (Motorola, Inc.)
NASNA (National Association of State Nine One One Administrators)
NATA (North American Telecommunications Association)
NCS (The Secretary of Defense, on behalf of the Department of Defense and as Executive Agent of the National Communications System)
NENA (National Emergency Number Association)
- Florida Chapter of NENA
- Georgia Chapter of NENA
- North Carolina Chapter of NENA

Nextel (Nextel Communications, Inc.)
NJETS (New Jersey Office of Emergency Telecommunications Services)
Nortel (Northern Telecom, Inc.)
North Dakota (State of North Dakota)
NYNEX (The NYNEX Companies)
OPASTCO (Organization for the Protection and Advancement of Small Telephone Companies)
ORBCOMM (Orbital Communications Corporation)
Oregon (Oregon State Police Emergency Management Division)
Pacific Bell (Pacific Bell, Nevada Bell and Pacific Bell Mobile Services)
Palmer (Palmer Communications Incorporated)
PCIA (The Personal Communications Industry Association)
Pertech (Pertech America, Inc.)

Pro-West (Pro-West Associates)
PSCC (Public Safety Communications Center, IN)
RCA (Rural Cellular Association)
Redcomm (Redcomm Laboratories, Inc.)
San Juan (San Juan County, WA)
SafeTalk (National Cellular SafeTalk Center, Inc.)
SAT (Smith Advanced Technology, Inc.)
SBC (SBC Communications, Inc.)
SBMS (Southwestern Bell Mobile Systems, Inc.)
Shelby County (Shelby County 911 District)
Southern (The Southern Company)
Springwich (Springwich Cellular Limited Partnership)
Sprint (Sprint Cellular Company)
Stanford Telecom (Stanford Telecommunications, Inc.)
STARSYS (STARSYS Global Positioning, Inc.)
TDI (Telecommunications for the Deaf, Inc.)
Teleos
Telident (Telident, Inc.)
Tendler (Tendler Cellular)
Terrapin (Terrapin Corporation)
Thurston County (Thurston County, WA)
TIA (Telecommunications Industry Association)
TRW (TRW, Inc.)
TX-ACSEC (Texas Advisory Committee on State Emergency Communications)
US Cellular (US Cellular Corporation)
US West (US West, Inc.)
Vanguard (Vanguard Cellular Systems, Inc.)
Walla Walla (Walla Walla, WA Police Department)
Washington (State of Washington Emergency Management)
Washington County (Washington County, TN)
Watercom (Waterway Communications Systems, Inc.)
Westinghouse (Westinghouse Electric Corporation)
WT (Washington Telecommunications)

(2) Comments and Reply Comments on the Alliance's Petition for Rulemaking

AT&T (AT&T Wireless Services, Inc.)
BANM (Bell Atlantic NYNEX Mobile, Inc.)
BellSouth (BellSouth Corporation and BellSouth Cellular Corporation)
CTIA (Cellular Telecommunications Industry Association)
Carolina West (North Carolina RSA3 Cellular Telephone Company)
PBMS (Pacific Bell Mobile Services)
PCIA (Personal Communications Industry Association)
RCA (Rural Cellular Association)
SBMS (Southwestern Bell Mobile Systems, Inc.)

(3) Comments and Reply Comments on the Consensus Agreement

Alliance (The Ad Hoc Alliance for Public Access to 911)
AMSC (AMSC Subsidiary Corporation)
AMTA (American Mobile Telecommunications Association, Inc.)
BellSouth (BellSouth Corporation)
BMJ&D (Blooston, Mordkofsky, Jackson & Dickens)
CTO (Concepts to Operations, Inc.)
GTE (GTE Service Corporation)
ICSAR (The Interagency Committee on Search and Rescue)
ITS (Intelligent Transportation Society of America)
Motorola (Motorola, Inc.)
Nextel (Nextel Communications, Inc.)
Nortel (Northern Telecom Inc.)
PCIA (The Personal Communications Industry Association)
RCA (The Rural Cellular Association)
RCC (The Ad Hoc Rural Cellular Coalition)
US West (US West, Inc.)
Vanguard (Vanguard Cellular Systems, Inc.)

APPENDIX B

I. FINAL REGULATORY FLEXIBILITY ANALYSIS

As required by Section 603 of the Regulatory Flexibility Act, 5 U.S.C. § 603 (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *Notice*. The Commission sought written public comments on the proposals in the *Notice*, including on the IRFA. The Commission's Final Regulatory Flexibility Analysis (FRFA) in this Order conforms to the RFA, as amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA).[290]

I. Need For and Objective of the Rules:

This *Report and Order* adopts policies concerning the operation of 911 and enhanced 911 (E911) emergency calling service and the services provided by cellular, broadband personal communications services (PCS), and geographic area specialized mobile radio (SMR) licensees. Commenters responding to the *Notice* in this proceeding have identified a number of ways in which 911 and E911 might be available through the use of wireless telephones, and have indicated that more widely available 911 and E911 services will save lives and property. Commenters also have indicated that various enhancements to wireless 911 service, such as the ability of the carrier to provide precise caller location information to the public safety answering point administrators, would make significant contributions to the effectiveness of wireless 911 services.

We find that the benefit of providing for more widely available and more effective 911 and E911 services for users of wireless telephones exceed any negative effects that may result from the promulgation of rules for this purpose. Thus, we conclude that the public interest is served by requiring that wireless telephones operate effectively with E911 systems.

II. Summary of Issues Raised by the Public Comments In Response to the Initial Regulatory Flexibility Analysis:

No comments were submitted in direct response to the Initial Regulatory Flexibility Analysis. In general comments on the *Notice*, however, a number of commenters raised issues that might affect small entities. Most of the wireless industry supported exemption for site-specific Specialized Mobile Radio (SMR) licensees due to their limited interconnection with the public switched network. Rural cellular providers argued that they should be exempted from E911 requirements because of the high expense in low density markets, as well as the lack of emergency service provider capabilities in such markets.

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[290] Subtitle II of the CWAAA is ``The Small Business Regulatory Enforcement Fairness Act of 1996," (SBREFA), codified at 5 U.S.C. § 601.

III. Projected Reporting, Recordkeeping and Other Compliance Requirements of the Rule:

There are no general reporting or recordkeeping requirements. There are, however, requirements for a group of trade and consumer organizations to report to the Commission on the status of industry discussions of technical standards and other implementation issues.[291] We assume that these reports will be prepared by the professional staff of these associations, and we do not intend to impose any unnecessary burdens or costs on the entities involved in the preparation and submission of the reports. The rule will require cellular, broadband PCS, and geographic area SMR licensees to upgrade their equipment so that:

(l) 911 calls from wireless mobile handsets which transmit a code identification will be transmitted without delay or credit verification.

(2)911 calls from any mobile handset will be transmitted without delay or credit verification to any emergency service provider who requests that they be transmitted.

(3)911 calls may be transmitted by speech or hearing impaired individuals through Text Telephone Devices.

(4)Emergency service providers will be enabled to call back 911 calls which are disconnected.

(5)Emergency service providers will be sent the location of the 911 caller within a radius of 125 meters by longitude and latitude in 67 percent of all cases.

These upgrades will require engineering and construction work on switches, protocols, and network architectures. We recognize that full implementation of wireless E911 will incur additional expenses.[292] However, we have found that E911 service to be in the public interest and that these relatively fixed costs will be spread over a widening base of subscribers as wireless subscribership grows, lowering unit costs per subscriber.

IV. Description and Estimate of Small Entities Subject to the Rules

The rule adopted in this *Report and Order* will apply to providers of cellular, broadband PCS, and geographic area 800 MHz and 900 MHz Specialized Mobile Radio (SMR) services,

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[291] *See* paras. 0, 0, 0, 0, *supra.* (These reporting requirements are applicable to the signatories to the Consensus Agreement, PCIA, TDI, and Alliance).

[292] *See* paras. 0, 0, *supra.*