

143. We find that Tel/Logic has not clearly demonstrated the technical feasibility of its proposed concept and system design, and has not provided any additional information to demonstrate an innovative contribution in PCS technology to warrant the grant of a pioneer's preference. Although in its application for a preference it stated that it had developed a method of coordination and control of micro-cells and developed intelligent features that are new and innovative, it did not describe these features with particularity nor demonstrate the new and innovative nature of them either in its application or in later filings with the Commission. Further, Tel/Logic states that its technical proposal is analogous to other proposed systems. We conclude that Tel/Logic has not demonstrated a working PCS system that incorporates new or innovative communications technologies. Accordingly, we deny Tel/Logic's request for a pioneer's preference.

144. US West NewVector Group, Inc. (NewVector) (PP-19). In its pioneer's preference request, NewVector states that based on its experience with PCS-type systems in the United Kingdom it could provide valuable data to the Commission. In particular, NewVector argues that a shared infrastructure with another PCS provider is the basis for a cost effective PCS system. However, NewVector does not describe a specific PCS proposal in its preference request.

145. PacTel comments that the NewVector preference request discusses no technology, requests no spectrum band, describes no service, and merely states that NewVector has gained some experience in the United Kingdom. In our Tentative Decision we proposed to deny NewVector's request, stating that NewVector did not demonstrate the feasibility of its technology or demonstrate the capabilities or possibilities of a specific identifiable PCS technology or service or brought it to a more advanced or effective state. NewVector did not respond to the Tentative Decision. Accordingly, we deny NewVector's request for pioneer's preference.

146. Vanguard Cellular Systems, Inc. (Vanguard) (PP-20). Vanguard requests a pioneer's preference based on its use of microcell technology in the context of multiple, connected switches serving wide-area cellular markets. Vanguard states that it would use spread spectrum technology to achieve spectrum efficiency and argues that its focus on smaller markets is innovative in comparison with other proposals for large metropolitan areas.

147. PacTel state that others have done work similar to that of Vanguard's and that Vanguard should not be awarded a preference since it has not demonstrated an innovative

system.¹⁵⁰ We proposed to deny Vanguard a pioneer's preference request in the Tentative Decision because of Vanguard's failure to demonstrate the technical feasibility of its proposed system. Vanguard did not respond to the Tentative Decision. Accordingly, we deny Vanguard's request for pioneer's preference.

148. Sharecom-Austin, L.P. (Sharecom-Austin) (PP-26). Sharecom-Austin requests a pioneer's preference for proposing to interconnect a PCS system with a shared tenant system, such as in a high density office building. However, Sharecom-Austin does not offer any technical specifics of its system, but merely indicates its goal of testing the interface.

149. In the Tentative Decision, we proposed to deny Sharecom-Austin's request for pioneer's preference for failing to submit either the preliminary results from an experiment or a sufficient showing of technical feasibility. Sharecom-Austin did not respond to the Tentative Decision. Accordingly, we deny Sharecom-Austin's request for pioneer's preference.

150. Time Warner Telecommunications, Inc. (PP-27). Time Warner requests a pioneer's preference for its proposal to combine cable television facilities with an integrated radio overlay in the 2 GHz band. Time Warner states that it is entitled to a pioneer's preference based on its signal propagation tests, experiments with remote antenna drivers, and experiments with digital transport carrier (DTC) systems using existing "live" cable facilities.¹⁵¹

151. Time Warner conducted tests of the Nexus 800 MHz RAD, tests of a DTC system to transport signals back to the headend, and 2 GHz propagation tests. The RAD tested is a CT-2 system in which a base station located at the cable headend communicates or "drives" remote antennas connected to cable lines. The same frequency is used in all microcells with no handoff between them. DTC tests explored communicating between a PCS base station and the cable headend by modulating digital signals. The DTC method converts analog telephone voice signals to digital, multiplexes them with other control and communications signals, and modulates them onto RF carriers. This method increases capacity between the PCS base station and cable headend by digitally combining multiple signals. Time Warner's propagation tests were conducted to verify that 2 GHz frequencies could support wireless services and to determine achievable coverage areas. While tests confirmed that 2 GHz frequencies could support wireless service, they indicated that higher power base stations may be required to

¹⁵⁰ See PacTel at 20 and GTE at 8 (January 24, 1992).

¹⁵¹ See Time Warner Reply at 40 (June 25, 1992).

achieve coverages equivalent to those of 800 MHz cellular service.¹⁵²

152. In comments to Time Warner's pioneer's preference request, GTE argues that Time Warner's showing of technical feasibility is insufficient. GTE further claims that Time Warner is basing its preference request on the unsupported assumption that cable television facilities would be cost-effective for the backhaul of CT-2 communications.¹⁵³ PacTel also questions the technical feasibility of Time Warner's proposal and additionally argues that developments that pertain only to the cable industry do not merit a preference.¹⁵⁴

153. Time Warner objects to GTE's and PacTel's characterizations that cable-related proposals are undeserving of a preference on the grounds that proposals to use existing infrastructures are not innovative. Time Warner argues that its remote antenna proposal merits a preference because implementation of the proposal will reduce the need for numerous high-powered base stations.¹⁵⁵ Further, Time Warner argues that its proposal meets the Commission's standard for a preference because, inter alia, it would provide added functionality and reduced costs.¹⁵⁶

154. In the Tentative Decision we proposed to deny Time Warner a preference, finding that its proposal did not appear to be innovative. Time Warner responded to the Tentative Decision, stating that the Commission failed to recognize the pioneering importance of its experimental work. Time Warner claims that although other companies developed PCS/cable plant interfaces, its combination of work in PCS/cable integration has been superior. It claims credit for being the first to test the remote antenna system concept on live, pre-existing subscriber hybrid fiber/coaxial cable facilities and the first to test and demonstrate alternative cable-based transport configurations combining broadband remote antenna and narrowband DTC architectures on live, pre-existing subscriber hybrid fiber/coaxial cable facilities.¹⁵⁷

¹⁵² See Time Warner Supplement to Request for Pioneer's Preference at 8 (May 4, 1992).

¹⁵³ See GTE at 21 (June 10, 1992).

¹⁵⁴ See PacTel at 23 (June 10, 1992).

¹⁵⁵ See Time Warner Reply at 17 (June 25, 1992).

¹⁵⁶ Id. at 18.

¹⁵⁷ See Time Warner at pp. i-ii (January 29, 1993).

155. In its reply comments, Time Warner argues that no party disputes its claim to being the first to test and modify the Nexus RAD system. Further, it states that the Commission should reject arguments that preference awards be based on filing dates of experimental licenses.¹⁵⁸

156. Time Warner's work with propagation testing, the remote antenna concept, and DTC appear to have consisted of planning and integration of existing equipment and carrier modulation methods with the cable infrastructure. Time Warner does not identify any specific development for which it is responsible except for 2 GHz propagation tests that appear to be little different from those performed before it by numerous parties. Time Warner has not identified or explained any specific innovation or development that merits a preference. The concept of using the cable infrastructure as a backbone for PCS in and of itself does not merit a pioneer's preference; nor does performing propagation tests or tests of existing equipment. Time Warner does not argue that its testing of the Nexus CT-2 RAD system led to a significant modification, service enhancement, or added capability. Accordingly, we deny Time Warner's pioneer's preference request.¹⁵⁹

157. Adelphia Communications Corp. (Adelphia) (PP-41). Adelphia requests a pioneer's preference for its efforts to develop "Neutral Networks." According to Adelphia, these networks will allow a cable coaxial plant to be modified for bi-directional signal transmission to provide PCS.

158. In comments to Adelphia's preference request, PacTel argues that this concept is not innovative. Similarly, GTE contends that Adelphia's proposal does not advance the radio portion of PCS technology.¹⁶⁰ We proposed to deny Adelphia a preference, concluding in the Tentative Decision that its proposal was preceded by the efforts of Cox in proposing integration of cable facilities and PCS. Adelphia did not respond to the Tentative Decision. Accordingly, we deny Adelphia's pioneer's preference request.

159. Advanced MobileComm Technologies, Inc. (AMT) and Digital Spread Spectrum Technologies, Inc (PP-42). In a

¹⁵⁸ See Time Warner Reply at iii (March 1, 1993).

¹⁵⁹ While we concur with Time Warner that pioneer's preferences should not be granted based on experimental license filing dates per se, we do consider it appropriate to consider timing when differences are significant. We base preference grants on demonstrated accomplishments, and adhere to this policy in the instant proceeding.

¹⁶⁰ See PacTel at 24 and GTE at 16 (January 24, 1992).

consolidated filing, AMT and DSST each request a separate pioneer's preference for their proposal of an "open entry" architecture in which any PCS applicant that meets certain requirements may gain access to a block of spectrum.¹⁶¹ This architecture would provide each licensee one 5 megahertz channel for exclusive access, with the remaining channels (also 5 megahertz) being dynamically available to all licensees in real time on an FDMA basis. DSST's equipment uses Direct Sequence CDMA, which it calls Synchronous CDMA (S-CDMA), to emphasize the synchronization of the inbound and outbound signals that is necessary because its inbound and outbound signals use TDD on the same channel. AMT and DSST assert that they deserve a preference for their open entry architecture combined with FDMA/S-CDMA/TDD equipment in a microcell and picocell environment. AMT and DSST's proposed services include cordless phone, private branch exchanges (PBXs), and wireless local area networks (LANs).

160. Qualcomm states that DSST utilizes orthogonal spreading codes that were pioneered by Qualcomm¹⁶² and that DSST's use of lower orthogonal signaling to preserve the orthogonal space will result in loss of demodulation efficiency. Qualcomm also claims that DSST's system has at least three times lower capacity than Qualcomm's because Qualcomm uses a higher rate speech coder. Qualcomm further contends that DSST omits the use of forward error correction codes in the base-to-mobile link and that this omission lowers the link's capacity and quality. Qualcomm also asserts that DSST's system is designed for pedestrian use, but that DSST's slower power control may not be adequate for such systems.

161. GTE states that AMT's proposals are unproven and lack a sufficient showing of technical feasibility, particularly with respect to interference with existing microwave users.¹⁶³ PacTel asserts that AMT's and DSST's work is still in a preliminary stage and is for non-licensed Part 15 service, and therefore does not merit a preference.¹⁶⁴ CTP asserts that DSST's "open entry" proposal for PCS is not new -- rather, both CT-2 in the U.K. and CT-2 Plus in Canada provide for multiple entrants with dynamic channel allocation.¹⁶⁵

162. AMT and DSST respond to Qualcomm's comments, asserting that the criticisms are flawed because they are based on

¹⁶¹ See AMT/DSST at 2-3 (May 1, 1992).

¹⁶² See Qualcomm at 7-10 (June 10, 1992).

¹⁶³ See GTE at 12 (June 10, 1992).

¹⁶⁴ See PacTel at 28 (June 10, 1992).

¹⁶⁵ See CTP at 15 (June 10, 1992).

Qualcomm's technical choices for its digital cellular system.¹⁶⁶ They assert that the needs for a PCS market will be different than those for a digital cellular market and that accordingly, different technical choices must be made.¹⁶⁷ AMT and DSST maintain that they chose their 5 megahertz channeling scheme because it is more suited to spectrum sharing with fixed microwave systems. They also disagree that they derived their technology from CTP and assert that GTE and PacTel offer only unsupported and erroneous claims.

163. In the Tentative Decision, we tentatively denied AMT and DSST a preference because: 1) AMT had just begun to initiate preliminary tests of British equipment and DSST had performed only computer simulations and spectrum studies, and neither party had developed 2 GHz PCS technology to the point of field testing; and 2) The spectrum scheme proposed in the PCS Notice was substantially different from the AMT/DSST open entry proposal.

164. In comments to the Tentative Decision AMT and DSST assert that they have commercially available spread spectrum equipment that operates in the 900 MHz, 2.4 GHz, and 5.7 GHz ISM bands. DSST indicates that it is still developing its S-CDMA technology that will operate in the 2 GHz band, but states that the technology will be similar to that being commercially used by DSST customers in the ISM bands at 900 MHz and 2.4 GHz.¹⁶⁸ AMT and DSST also assert that their open entry spectrum proposal may be different from that proposed in the Notice but that it is compatible. They contend that S-CDMA will function well within other licensing regimes and that the Commission is penalizing them because they request a 5 megahertz frequency assignment rather than a 30 megahertz assignment. In reply comments to the Tentative Decision AMT and DSST assert that they are the only preference applicant to describe efforts focused on the development of a PCS architecture suitable for deployment of wireless PBXs and LANS.

165. It appears that AMT's and DSST's proposals contain two possibly innovative developments: 1) open entry architecture and 2) use of FDMA/S-CDMA/TDD equipment at 2 GHz. However, in the PCS Second Report and Order we did not adopt their open entry architecture proposal, and we find that this proposal is

¹⁶⁶ See AMT/DSST Reply at 7 (June 25, 1992).

¹⁶⁷ For example, AMT and DSST state that Qualcomm's system was designed for large cells with high speed handoffs from users traveling at vehicular speeds, while AMT's and DSST's proposed service is microcellular-based to provide low cost service in densely populated areas to subscribers at pedestrian speeds.

¹⁶⁸ See DSST Report at 2 (January 11, 1993).

incompatible with the spectrum scheme adopted because only one license per spectrum block per service area may be granted.

166. With respect to AMT's and DSST's 2 GHz equipment, at the time of the Tentative Decision we found that AMT and DSST had failed to demonstrate the technical feasibility of this equipment. We continue to believe that AMT and DSST have failed to demonstrate the equipment's technical feasibility. Further, no additional information has been submitted by AMT and DSST that they have made significant modifications to their technology to provide PCS services at 2 GHz. Accordingly, we deny AMT's and DSST's pioneer's preference requests.

167. American Telephone and Telegraph (AT&T) (PP-43). AT&T proposes to use the 6 GHz band to provide PCS. In the Tentative Decision, we proposed to deny this request since the 6 GHz band is not the subject of this proceeding. AT&T did not respond to the Tentative Decision. In our PCS Second Report and Order we did not allocate spectrum for PCS at 6 GHz. Accordingly, we deny AT&T's pioneer's preference request.

168. American TeleZone (TeleZone) (PP-44). TeleZone proposes a wideband CDMA PCS system that will include sharing with other PCS subscribers utilizing a Part 15 (unlicensed) spectrum approach to support its system. In comments to Telezone's pioneer's preference request, PacTel and GTE object to a grant of a preference to Telezone due to failure to demonstrate a technically feasible system.¹⁶⁹

169. The Commission found in its Tentative Decision that TeleZone's system did not comply with the proposed PCS rules and thus was not eligible for a preference because the system would require a total bandwidth of 80 megahertz. TeleZone did not respond to the Tentative Decision. Since the rules adopted in the PCS Second Report and Order do not permit 2 GHz PCS licensees to use more than 40 megahertz of spectrum in a geographic area,¹⁷⁰ the rules are inconsistent with the TeleZone proposal. Accordingly, we deny TeleZone's pioneer's preference request.

170. Ameritech (PP-45). Ameritech requests a pioneer's preference for having developed an open network interface between the PSTN and a PCS provider that it contends is innovative because it is independent of transmission technology, employs "intelligent" handset/base station interaction, and offers PCS providers a range of features to offer their customers.¹⁷¹ The

¹⁶⁹ See PacTel at 20 and GTE at 12 (January 24, 1992).

¹⁷⁰ See Second Report and Order, supra note 10, 8 FCC Rcd at 7813.

¹⁷¹ See Ameritech Request at 8 (May 4, 1992).

proposed system supports two-way voice and data communications and handoff between the handsets and the cellular base stations connected to the existing PSTN. In addition, Ameritech claims credit for innovation for the first comparative testing of sharing spectrum between fixed microwave operations in the 2 GHz PCS band using FDMA, CDMA, and TDMA technologies; implementing "frequency agile" spectrum sharing; and developing new PSTN capabilities and technologies to facilitate PCS. Ameritech further asserts that its contract with Omnipoint, which was tentatively granted a preference, initiated the development of the first 2 GHz PCS handsets using FDMA, CDMA, and TDMA technologies.¹⁷²

171. In comments on Ameritech's request, PacTel argues that Ameritech has not demonstrated innovation. PacTel asserts that Ameritech has borrowed from others, but has not demonstrated that it has contributed significantly to the development or refinement of PCS.¹⁷³ Further, PacTel states that Ameritech has merely contributed specifications to Motorola for handset development.¹⁷⁴ For these reasons, PacTel concludes that Ameritech does not merit a preference. GTE concurs, stating that although Ameritech has been testing technology and conducting market tests for over a year, Ameritech's contributions to PCS are inconclusive.¹⁷⁵

172. In reply, Ameritech states that its market/technical trial design, open network interface approach, related developments to the PSTN, commissioning of PCS handsets, and wide-scale market test demonstrate its merit for a preference.¹⁷⁶ It argues that it has carefully detailed its proposal in its license application, experimental reports, and pioneer's preference request.¹⁷⁷

173. In our Tentative Decision we proposed to deny Ameritech a preference, finding that its proposal appeared to constitute a compilation or aggregation of existing communications technologies or systems, or did not constitute a unique or innovative technology or service proposal.

¹⁷² Id. at 2.

¹⁷³ See PacTel at 21 (June 10, 1992).

¹⁷⁴ Ameritech contracts with both Omnipoint and Motorola for handsets.

¹⁷⁵ See GTE at 8 (June 10, 1992).

¹⁷⁶ See Ameritech Reply at 3 (June 25, 1992).

¹⁷⁷ Id. at 5.

174. In response to the Tentative Decision, Ameritech argues that its proposed system is not a compilation or aggregation of existing technologies, but rather is a "new and open network system architecture" that: 1) employs distributed intelligence between base station, handset and switching system to allow the base station and handset to direct the PSTN to handoff calls and 2) can utilize existing PSTN network technologies in new ways as elements of the PCS system.¹⁷⁸ Further, Ameritech claims credit for helping Omnipoint develop its 1900 MHz handset because it provided the general specifications for the manufacturing contract and allowed Omnipoint to develop handsets under Ameritech's experimental license.¹⁷⁹ Ameritech contends that its unbundled PSTN structure is a significant communications innovation because it allows PCS providers access to the functionalities of the PSTN.¹⁸⁰

175. We conclude that Ameritech has not demonstrated that it is employing other than existing technology for its system and that it has not demonstrated its responsibility for a specific innovation. Ameritech has not demonstrated how its claimed enhancements to the PSTN and development of an open network interface differs from the capabilities of the existing PSTN. In addition, Ameritech has not submitted results of comparative testing of PCS radio access technologies. Further, although Ameritech refers to frequency agile handsets and base stations, its documentation lacks technical details and explanation. Finally, while Ameritech states that it "provided general specifications" to Omnipoint and Motorola for the design of 1900 MHz handsets,¹⁸¹ it does not explain with particularity its innovative contribution to the design of those handsets. From the record we are unable to ascertain whether Ameritech developed a specific functionality that Omnipoint or Motorola implemented in their handsets or defined specific criteria for a universal interface. Accordingly, we deny Ameritech's request for a pioneer's preference.

176. Bell Atlantic Personal Communications, Inc. (PP-46). Bell Atlantic requests a pioneer's preference based on two independent but complementary proposals for PCS systems that it names the "Personal Line" system and "Beacon telepoint" system. As described by Bell Atlantic, the Personal Line system employs one personal number and one handset that is usable in

¹⁷⁸ See Ameritech at 6 (January 29, 1993).

¹⁷⁹ Id. at 7.

¹⁸⁰ Id. at 8.

¹⁸¹ See Ameritech Request at 12 (May 4, 1992).

multiple environments: home/office, pedestrian, and vehicular.¹⁸² Bell Atlantic states that its handset is capable of initiating calls and employs a built-in pager to notify the user of incoming calls. Bell Atlantic's proposed system consists of private base stations, PBXs, public microcells, and public macrocells. Personal Line would route outgoing calls using technology that scans for the nearest base station, then microcell, then macrocell, depending on the handset's location. According to Bell Atlantic, the key to Personal Line is its Locator Service that provides person-centered, rather than location-centered, communications.¹⁸³

177. The Locator Service (Beacon) telepoint system proposes to overcome the problems that Bell Atlantic contends exist with current telepoint systems, such as locating an operating site within which a handset may function.¹⁸⁴ The Beacon telepoint transmits a signal (at powers as high as 5 watts) to enable the network to signal on an alphanumeric display the nearest telepoint.¹⁸⁵ The Beacon system consists of a low power signal at the telepoint, and a high power signal with a range of approximately 10 miles.¹⁸⁶

178. In comments to Bell Atlantic's pioneer's preference request, PacTel states that the Personal Line proposal should be considered carefully because it can bring a rudimentary form of PCS to the public in the near future and that the Beacon system is an innovative enhancement of a CT-2 system that solves the problem of locating a base station to place a call.¹⁸⁷ However, GTE asserts that Bell Atlantic's PCS integration efforts have not yet been tested successfully, and argues that system technical feasibility has not been demonstrated.¹⁸⁸ PageMart asserts that Bell Atlantic's proposal: (1) contemplates a massive increase in infrastructure investment;¹⁸⁹ (2) is not compatible with cordless telephones and does not support a universal handset

¹⁸² See Bell Atlantic Request at 7 (May 4, 1992).

¹⁸³ Id. at 5.

¹⁸⁴ Id. at 18.

¹⁸⁵ Id. at 19.

¹⁸⁶ Id. at 26.

¹⁸⁷ See PacTel at 10 (June 10, 1992).

¹⁸⁸ See GTE at 8 (June 10, 1992).

¹⁸⁹ See PageMart at 8 (June 10, 1992).

usable while traveling from home to office;¹⁹⁰ (3) maximizes air-time by delivering calls over the radio spectrum;¹⁹¹ and (4) utilizes a massive database that registers the user's location, raising privacy concerns.¹⁹²

179. In reply comments, Bell Atlantic argues that it provided a technical feasibility showing in its original filing.¹⁹³ Further, Bell Atlantic states that PageMart's comments are misplaced because: (1) infrastructure investment will be required regardless of whether Locator Service is offered;¹⁹⁴ (2) Personal Line supports a universal handset that operates with base stations superior to present cordless phones, and the handset may be used with microcells for pedestrian speeds and in the existing cellular environment for vehicle speeds;¹⁹⁵ (3) Personal Line minimizes air-time because calls are delivered by the wireless network if the recipient is within a wireless environment; otherwise, if the user is registered with the wireline network calls are delivered via wireline; and (4) the exact location of the user is known only in wireline registration and in wireless networks only the cell or microcell that the user is utilizing is known to the database. Bell Atlantic states that the latter technique is the same one used by cellular radio systems and therefore should not raise privacy concerns.¹⁹⁶

180. In the Tentative Decision we proposed to deny Bell Atlantic's request for a preference, finding that its proposal constitutes a compilation or aggregation of existing communications technologies or systems or does not otherwise constitute a unique or innovative technology or service proposal. Bell Atlantic responded to the tentative denial, requesting clarification as to why it was denied a preference for and argues that neither reason given is an accurate assessment of its proposal. Bell Atlantic asserts that Personal Line is innovative and merits a preference because it is the first time that the intelligence and signalling of the public network have been combined with the portability of a wireless network to create a

¹⁹⁰ Id. at 9.

¹⁹¹ Id.

¹⁹² Id. at 10.

¹⁹³ See Bell Atlantic Reply, note 1 (June 25, 1992).

¹⁹⁴ Id. at 5.

¹⁹⁵ Id. at 6.

¹⁹⁶ Id. at 7.

person-centered communications system.¹⁹⁷ Further, it argues that its Locator Service (Beacon) also merits a preference because it allows customers to maintain a single personal phone number and employs sophisticated call-routing capabilities.¹⁹⁸

181. We agree with PacTel that the Beacon telepoint system potentially could improve existing CT-2 systems; however, we find that it does not constitute an innovative proposal for PCS. Further, if Bell Atlantic's Personal Line system provides ubiquitous coverage as Bell Atlantic states it will, its Beacon system appears unnecessary.¹⁹⁹ In any event, Bell Atlantic has not demonstrated the technical feasibility of its Personal Line system. Bell Atlantic's pioneer's preference request and experimental reports indicate that this system is only in the developmental stage. The record lacks critical technical details such as spectrum requirements, modulation technique, power levels of handsets and microcells, ability to coexist with existing fixed operational microwave users, and channeling scheme. Bell Atlantic has not explained the specific aspects of its system of base stations, microcells, and macrocells that it states differ significantly from the proposals of other parties, why those aspects are innovative, and what Bell Atlantic's contribution is for having designed or developed the equipment that results in those functions being available. Accordingly, we deny Bell Atlantic's pioneer's preference request.

182. Broadband Communications Corporation (Broadband) (PP-47). Broadband requests a pioneer's preference for a PCS system designed to provide service over fixed links to residential and small business using wideband CDMA technology and a fast packet overlay that it calls multiple division multiple access (MDMA). Broadband's proposed system requires 140 megahertz of spectrum (70 megahertz spread spectrum in each direction).

183. In comments to Broadband's pioneer's preference request, PacTel contends that Broadband does not deserve a preference because its proposal will merely replace the exchange carrier's local loop and will not provide mobile service. Further, PacTel argues that Broadband is proposing a wideband service that does not comply with the Commission's rules.²⁰⁰ GTE states that the Broadband proposal does not offer sufficient detail to justify a preference. In the Tentative Decision we proposed to deny Broadband's preference request, concluding that

¹⁹⁷ See Bell Atlantic at 4 (January 29, 1993).

¹⁹⁸ Id.

¹⁹⁹ Id.

²⁰⁰ See PacTel at 16 (June 10, 1992).

Broadband did not demonstrate the technical feasibility of its system or that it had developed the capabilities or possibilities of a specific identifiable PCS technology or service or had brought it to a more advanced or effective state. Broadband did not respond to the Tentative Decision. Because Broadband has not provided sufficient information to demonstrate the technical feasibility of its proposed PCS or MDMA concept, and also because its wideband system is inconsistent with the spectrum plan we adopted in the PCS Second Report and Order, we deny its pioneer's preference request.

184. Cable USA, Inc. (PP-48). Cable USA requests a pioneer's preference for its proposal to utilize Multipoint Distribution Service (MDS) spectrum and MDS and cable television facilities as a network distribution infrastructure for PCS.²⁰¹ It argues that this approach will promote spectrum efficiency, enhance both PCS and MDS systems, and bring PCS to areas that lack traditional network facilities. It claims that its proposal would provide affordable PCS to customers through its novel MDS-based approach, particularly in small markets. In Cable USA's PCS system, MDS would serve as the backbone for linking microcells. Within microcells, RADs would provide coverage to specific local areas and microcell extenders would expand coverage.

185. In comments on Cable USA's request, GTE argues that Cable USA has not demonstrated the technical feasibility of its proposal.²⁰² PacTel notes that in small markets typically there is ample spectrum available; likely there will be low demand for PCS in these areas; and that in any event backhaul is only a small part of a complete PCS system in these low density population areas.²⁰³ Cable USA responds that it expects to submit test results in the near future and that use of the cable and wireless cable infrastructure is particularly well-suited for rural PCS use because of inherent economies of scale.²⁰⁴

186. In the Tentative Decision we proposed to deny Cable USA a pioneer's preference for failure to submit either the preliminary results from an experiment or to demonstrate technical feasibility. In response to the tentative denial, Cable USA argues that the pioneer's preference rules require only that an experimental license application be filed, not that results be reported, and states that it complied with this

²⁰¹ See Cable USA Request for a Pioneer's Preference (May 4, 1992).

²⁰² See GTE Comments at 18 (June 10, 1992).

²⁰³ See PacTel at 25 (June 10, 1992).

²⁰⁴ See Cable USA Reply at 2 (June 25, 1992).

requirement by filing an experimental license application in 1991. Cable USA contends that it received the license, revised and finalized its plans for testing MDS and cable wire systems for PCS infrastructure, hired a PCS test coordinator, filed a preliminary progress report, and renewed its license in November, 1992.

187. We find that while Cable USA filed an experimental license application it did not file preliminary results from this experiment or an adequate showing of technical feasibility, as is required by our rules.²⁰⁵ At the time of the Tentative Decision, Cable USA had neither acquired equipment nor tested its network design.²⁰⁶

188. In addition, Cable USA has not with specificity proposed a new or innovative service or technology, nor its responsibility for any specific aspect. While it is the only pioneer's preference applicant to propose using MDS spectrum as a backbone for PCS, we did not provide for this use in the PCS Second Report and Order and note that large numbers of applications for MDS licenses are pending for non-PCS "wireless cable" services. Additionally, we note that thousands of microwave links that can serve as PCS backbone systems are located above the channels allocated to MDS.²⁰⁷ Accordingly, we deny Cable USA's pioneer's preference request.

189. Cellular Service, Inc. (Cellular) (PP-49). Cellular seeks a pioneer's preference for a narrowband digital personal communications service based on the European "Digital Communications Service 1800" technology.

190. In comments on Cellular's pioneer's preference request, PacTel argues that Cellular has not developed a new service but merely duplicated an existing service.²⁰⁸ In the Tentative Decision we proposed to deny Cellular's proposal's because it is a compilation of existing communications technologies or systems. Cellular did not respond to the

²⁰⁵ See 47 C.F.R. § 5.207.

²⁰⁶ See Cable USA Progress Report, filed June 18, 1992.

²⁰⁷ In the emerging technologies proceeding, we reallocated for use by private and common carrier fixed microwave systems the 3.7-4.2 GHz band, and reallocated and rechannellized for such use the 5.925-6.425, 6.525-6.875, 10.565-10.615/10.630-10.680, and 10.7-11.7 GHz bands. See Second Report and Order, ET Docket No. 92-9, supra note 136. These and other existing fixed microwave bands above 11.7 GHz are available for various types of fixed microwave use, including PCS backhaul.

²⁰⁸ See PacTel at 21 (January 24, 1992).

Tentative Decision. Accordingly, we deny Cellular's pioneer's preference request.

191. Comcast PCS Communications, Inc. (Comcast) (PP-50). Comcast requests a pioneer's preference for its proposed integration of cellular, cable, and PCS networks. Comcast proposes to provide low cost PCS service by interfacing its cellular switching office with its cable television headend via a cellular/PCS base station, and to utilize fiber for backhaul between its PCS remote antenna sites. Comcast states that its cable facilities will provide the backbone infrastructure, locations for microcells, and access technology for signal transportation. Its cellular facilities would provide switching, billing, roaming, automatic call delivery, and customer services. Further, Comcast states that the existing cellular service can be accessed to provide macrocell coverage when not within PCS microcell range.²⁰⁹

192. In comments on Comcast's pioneer's preference request, GTE claims that Comcast's experimental efforts do not demonstrate innovation deserving a preference.²¹⁰ PacTel states that Comcast's proposal does not merit a preference because its proposed system limits PCS to cellular carriers with access to cable company fiber.²¹¹ Further, PacTel asserts that Comcast's frequency sharing scheme limits technologies to those that lend themselves to Comcast's specific channelization scheme. Finally, PacTel argues that Comcast could provide its proposed service within its existing authorizations as a cellular carrier. Bell Atlantic contends that various cable company proposals, including Comcast's, are only novel to the cable industry and are not innovative from an overall telecommunications perspective.²¹²

193. In its reply comments, Comcast responds to GTE, stating that its proposal is to use its cable network as a backbone for telecommunications links to PCS and that its proposal to use modified cellular base stations for microcell coverage are an innovative use of this infrastructure and meet the pioneer's preference criteria for advancing technology or services. Comcast also addresses the arguments of PacTel, stating that its system does not limit PCS to existing cellular carriers, but demonstrates one way that a cable/cellular interface can advance PCS. Comcast further argues that its use of a wideband cable/cellular interface does not fall within its current cellular authorizations, and that it would provide a unique non-

²⁰⁹ See Comcast Request at 22 (May 4, 1992).

²¹⁰ See GTE at 16 (June 10, 1992).

²¹¹ See PacTel at 25.

²¹² See Bell Atlantic at 11 (June 10, 1992).

cellular service. Comcast concludes that its PCS system demonstrates enhancements to cellular service and would be a new use for spectrum.²¹³

194. In our Tentative Decision we proposed to deny Comcast a preference because, although the request proposes efficient use of cable facilities to provide PCS, Cox appears to have first proposed such cable/PCS integration, developed the necessary hardware, and conducted at least preliminary field trials with actual hardware.

195. In response to the Tentative Decision Comcast argues that we did not address its integration of existing cellular services with cable TV, innovative PCS achievements, or associated experimentation with wireless/wireline interface. Comcast argues that the combined cable/cellular infrastructure provides the ideal environment for cost-effective PCS. Further, Comcast asserts that its experiments at cellular frequencies demonstrate the feasibility of its PCS system because its concept for PCS involves the sharing of the cellular and PCS infrastructures by a PCS licensee. Finally, Comcast claims that a five-way, intrastate, interstate, and trans-Atlantic conference call linking three cities on September 10, 1992, proves its technology as an alternative to using local exchange carriers.²¹⁴

196. We find that Comcast has not demonstrated the feasibility of its system or demonstrated innovation with respect to PCS. Comcast has demonstrated enhancements to its cellular system by interfacing its cellular network with the fiber network used by its cable facilities. While Comcast's experimental reports address propagation tests at 2 GHz, it has submitted no information related to experiments with PCS or other equipment at 2 GHz. Rather, Comcast appears to rely upon microcell and picocell tests using cellular equipment operating in the 800 MHz range. Many of Comcast's claimed PCS achievements relate to cellular service, rather than PCS service at 2 GHz, and appear to demonstrate that fiber interface can be provided without access to additional spectrum. Under Comcast's proposal, cable facilities would provide the backbone infrastructure and access technology for PCS, and cellular facilities would provide the billing, switching, macrocell coverage, roaming, call delivery, and customer services. We conclude that fiber interface by itself is not innovative and does not merit a preference. Accordingly, we deny Comcast's pioneer's preference request.

197. Corporate Technology Partners (PP-51). CTP requests a pioneer's preference for its Interference Sensing CDMA technology

²¹³ See Comcast Reply at 2, 4 (June 25, 1992).

²¹⁴ See Comcast at 3 et seq. (January 29, 1993).

that it claims is the adaptation to narrow channel CDMA of its interference sensing developed for CT-2 Plus. ISCDMA combines narrow-channel CDMA technology with interference sensing dynamic channel allocation. In ISCDMA the base station scans available channels and selects those that have signal levels below a set threshold. The base station then sends a list of the channels that have sufficiently low noise to the mobile unit, and the mobile unit scans the channels on the list and from the list selects a channel with an appropriately low noise level for communications with the base station. The mobile and the base station also can dynamically switch channels if interference appears on the selected channel. CTP claims that ISCDMA increases channel capacity while avoiding interference to fixed microwave operations and other PCS users. It states that ISCDMA can be implemented with minor software modifications to available CDMA equipment and that this technology permits PCS operations on a secondary basis to existing microwave operations, instead of PCS displacing microwave incumbents. CTP also claims that its interference sensing is innovative because to avoid interference both the base stations and handsets scan a channel before using it.²¹⁵ It proposes PCS services that include two-way voice and data transmissions in an architecture that includes wireless local loop, cordless residential telephone, wireless PBX, and public base station services.

198. CTP maintains that it is the first company to pursue PCS development in the United States by its formation of Easyphone, Inc. with Bell Canada Enterprises (BCE) in the Fall of 1989.²¹⁶ However, CTP states that in August 1991 it conveyed to BCE its ownership interest in Easyphone and its frequency sharing CT-2 invention.²¹⁷ CTP contends that ISCDMA was invented in November 1990, which it says is before other applicants proposed similar approaches. CTP states that the factors essential for utilization of its interference sensing approach are basic components of existing CT-2 and CT-2 Plus systems, and that adoption by the Canadian Department of Communications of CT-2 Plus as a national Canadian standard for the first generation of microcellular PCS has confirmed the feasibility of the interference sensing approach.²¹⁸

²¹⁵ CTP's base stations would scan available channels to detect the signal level on each. Channels that have an energy level below a certain threshold, as determined by TIA bulletin 10D and 10E and other factors, would be sent to the mobile. The mobile then would scan the channels and pick the best channel for communications with the base station.

²¹⁶ See CTP Request at 6 (May 4, 1992).

²¹⁷ Id. at 7.

²¹⁸ Id. at 13.

199. Qualcomm asserts that CTP did not invent the CDMA system for which it claims credit and that Qualcomm has several patents covering this system.²¹⁹ Qualcomm further states that while CTP may have developed techniques to monitor interference and dynamically allocate frequency channels, others have developed similar ideas.

200. PacTel states that ISCDMA potentially is a useful development, but that no experimental tests have been done, that technical feasibility is not demonstrated, and that the proposal otherwise is undistinguished.²²⁰ PacTel concludes that a preference should not be given for a single untested idea. Similarly, GTE states that CTP's proposal is a combination of proven and promised functionality that has not been shown to be technically feasible.²²¹ GTE also asserts that there has not been a showing of significant investment of effort, either in terms of experimentation or demonstration of technical feasibility.

201. Viacom states that CTP's proposal is based on highly questionable propagation reciprocity that incorrectly assumes that instantaneous propagation measurements from microwave transmitters represents the propagation conditions to microwave receivers that often are separated by 80 megahertz.²²² Viacom asserts that such measurements do not accurately represent interference to microwave operations. Viacom also asserts that CTP incorrectly assumes that measurements from an elevated, high gain antenna at a fixed PCS base station is pertinent with regard to the propagation situation for randomly distributed PCS mobiles in the vicinity.

202. In its comments, CTP states that AMT/DSST, APC, Associated, Pacific Bell and others all derived their proposals from the its work.²²³ CTP also argues that it performed innovative work in PCS/passive fiber optic interfaces and PCS/coaxial television interfaces. In its reply comments, CTP argues that its scanning of channels to find a low signal level will protect microwave operations if the threshold level is calculated correctly.²²⁴

²¹⁹ See Qualcomm at 5-6 (June 10, 1992).

²²⁰ See PacTel at 28 (June 10, 1992).

²²¹ See GTE at 12 (June 10, 1992).

²²² See Viacom at 10, 19 (June 10, 1992).

²²³ See CTP comments (June 10, 1992).

²²⁴ See CTP Reply at 13 (June 25, 1992).

203. In the Tentative Decision, we proposed to deny CTP a preference because we found no evidence that APC or others derived their proposals from that developed by CTP. We concluded that APC's FAST technology differs from that of CTP in substantial ways and therefore there was no need to investigate who filed first.

204. In its response to the Tentative Decision, CTP states that it should be awarded a preference because its ISCDMA technology is superior to other interference avoidance proposals submitted in this proceeding and because it developed ISCDMA before APC developed FAST.²²⁵ CTP also asserts that even if the Commission perceives FAST to be superior to ISCDMA, this is not a valid basis for denying CTP's pioneer's preference request.²²⁶ Further, CTP argues that it merits a pioneer's preference for its work on interfacing PCS with fiber optic and coaxial cable-based networks.

205. APC argues that CTP's approach is unworkable and that CTP's own technical paper concludes that "further work is needed" to test the proposal's "reliability in an actual PCS environment."²²⁷ APC asserts that ISCDMA would not protect microwave users from interference from PCS licensees and argues that ISCDMA will permit mobiles to use a microwave frequency when the signal is obstructed by terrain or buildings. APC contends that when a subscriber moves from behind a building the microwave operator would suffer interference because while ISCDMA senses interference at call set-up, it does not continuously monitor and adjust frequency use. APC also claims that ISCDMA does not protect microwave operations that use other than an 80 megahertz frequency separation and does not protect receive-only microwave stations. Finally, APC asserts that CTP cannot take credit for the technical filings of Easyphone, Northern Telecom, and Bell Northern Research.²²⁸

²²⁵ See CTP at 25 (January 29, 1993).

²²⁶ We agree with CTP that finding one technology to be superior to another is not a basis for denial of a pioneer's preference. However, it does serve as a measure of innovativeness. In any event, as noted below, the conflicting information in the record and lack of demonstrated developments provides an independent basis to deny CTP's request for a pioneer's preference.

²²⁷ See APC Reply at 17 (March 1, 1993).

²²⁸ Id. at 19-20.

206. CTP claims that its innovations have been entirely original.²²⁹ It also asserts that it is as near to deployment of PCS as the three tentative preference grantees and that a decision on awarding a preference should be based on progress toward a workable system, not on how much public experimentation has occurred.

207. While CTP may have played a role in the development of interference avoidance technology, we agree with parties who argue that CTP has not demonstrated the feasibility of its proposal. While CTP has provided a theoretical discussion of its technology, it has yet to test its ISCDMA concept or demonstrate whether using it will be effective in preventing interference with existing fixed microwave operations. Additionally, CTP's theoretical discussion concludes that "[f]urther work is needed... to test their reliability in an actual PCS environment."²³⁰ Therefore we do not grant CTP a pioneer's preference for its interference avoidance technology.

208. With regard to CTP's request for a preference for its work on interfacing PCS with fiber optic and coaxial cable-based networks, we note that this was not part of CTP's original request but raised later in its filings on other applicants' requests. In those comments, CTP states that it has engaged in substantial work in the area of fiber optic and coaxial cable interfaces. CTP gives a brief description of work it says it is performing in this regard. However, we find that it has pursued the concept of cable PCS well after other entities and that its filings do not propose or demonstrate responsibility for any new or innovative concept or technology.

209. In conclusion, it appears that CTP has developed only a concept of interference avoidance that it claims can be implemented with any system infrastructure. We find no support for CTP's argument that it developed its interference sensing approach prior to that of other interference avoidance proposals. Its proposed ISCDMA is a compilation of CT-2 Plus concepts and Qualcomm's equipment and lacks innovativeness. CTP maintains that it is the only applicant that has entirely original PCS technology; however, it also states that its interference sensing concept is well established due to its use in CT-2 and CT-2 Plus operations,²³¹ and that it has conveyed its ownership in its

²²⁹ See CTP Reply at 1-4 (March 1, 1993).

²³⁰ See CTP at Exhibit G, page 21 (January 29, 1993).

²³¹ CT-2 Plus refers to the addition of a pager to CT-2 service. CTP asserts that CT-2 Plus design would use an interference avoidance technique in which its mobiles would scan a channel for interference before using that channel.

CT-2 invention to another company. Accordingly, for the reasons stated herein, we deny CTP's pioneer's preference request.

210. Nextel Communications, Inc.²³² (PP-54). Nextel requests a pioneer's preference based on its Digital Mobile technology that it currently is implementing for Enhanced Specialized Mobile Radio (ESMR) service. Nextel proposes to use its technology to provide voice and data services using low-power base stations and handsets. It claims that Digital Mobile technology provides six times the capacity of analog technology on a 25 kilohertz frequency, and is capable of increasing SMR capacity by at least 15 times.²³³ Nextel contends that its Digital Mobile technology represents advances in system capacity, power control for mobile and handheld units, frequency agility, subscriber assisted handoff, integration of disparate services, and seamless infrastructure.²³⁴ Further, Nextel argues that while the initial development and implementation of this technology is in the ESMR service, its full realization can be achieved in the broader PCS service.²³⁵

211. GTE asserts that Nextel's request for a preference based on advances it is implementing in an existing service, ESMR, is inappropriate in the instant proceeding because its effort and risk was not undertaken for the purpose of PCS.²³⁶ PacTel also opposes Nextel's request, concurring with GTE that Nextel already has been rewarded for its work by ESMR license approval. Further, PacTel argues that Nextel has not demonstrated a contribution to the development of PCS in the 2 GHz band under consideration in this docket.²³⁷

212. In reply comments, Nextel argues that the technology discussed in all the PCS pioneer's preference requests was developed for other services, and that its development of Digital Mobile technology for the ESMR service should not exclude it from obtaining a PCS preference.²³⁸

213. In our Tentative Decision we proposed to deny Nextel a preference because the proposal constitutes a compilation or

²³² Nextel was formerly known as Fleet Call, Inc.

²³³ See Nextel at 2 (May 4, 1992).

²³⁴ Id. at 15.

²³⁵ Id. at 3.

²³⁶ See GTE at 18 (June 10, 1992).

²³⁷ See PacTel at 17 (June 10, 1992).

²³⁸ See Nextel Reply at note 8 (June 10, 1992).

aggregation of existing communications technologies or systems or otherwise does not constitute a unique or innovative technology or service proposal. In response, Nextel contends that the Commission did not consider its proposal separately and in detail and failed to state independent reasons for the tentative denial. It argues that its Digital Mobile technology is innovative and would provide an optimum platform for a wide array of new PCS services.²³⁹ It further argues that the Commission's tentative denial contradicts our Waiver Order,²⁴⁰ in which we found implementation of Nextel's technology within the SMR service to be innovative and unique.²⁴¹ Further, Nextel claims that implementation of its technology in the 800 MHz SMR bands validates its feasibility as a platform for 2 GHz PCS.²⁴²

214. We disagree that Nextel's pioneer's preference request was not independently evaluated in the Tentative Decision. While we grouped the reason for Nextel's tentative denial with others, all were independently evaluated. We find that its preference request is a description of the technology and services it has designed and implemented within the SMR service. While Nextel discusses advances it has made to SMR services, it does not explain or otherwise demonstrate how it plans to use Digital Mobile technology for PCS in ways different from ESMR, or how its technology would result in different services. Specifically, while Nextel broadly states that if awarded a preference it will use its technology for microcell applications for in-building and pedestrian services, it does not define specific services, demonstrate by experimentation or technical showing the feasibility of providing these services in the spectrum range proposed for PCS, or explain what advantages its PCS proposal at 2 GHz will provide relative to its existing ESMR operations at 800 MHz. Merely transferring essentially the same technology and infrastructure from 800 MHz to 2 GHz does not qualify as innovative within the pioneer's preference context.

215. Our statements regarding Nextel's technology in the Waiver Order are inapplicable to the instant proceeding. In the Waiver Order, we found the enhancements to SMR to be innovative when compared to existing services. However, Nextel's PCS proposal is little different from the now-existing ESMR service. Further, Nextel's proposed PCS services, including two-way voice and data with handoff capability and automatic power control, are similar to those many other applicants are proposing. Nextel has

²³⁹ See Nextel at 9 (January 29, 1993).

²⁴⁰ See Waiver Order, 6 FCC Rcd 1533; recon. denied.
6 FCC Rcd 6989 (1991).

²⁴¹ See Nextel at 11 (January 29, 1993).

²⁴² See Nextel Reply at 7 (March 1, 1993).

not addressed how it may provide these services in the 2 GHz band, where propagation, technology, and existing services present a significantly different environment. Accordingly, we deny Nextel's request for a pioneer's preference.

216. Freeman Engineering Associates, Inc. (Freeman) (PP-55). Freeman requests a pioneer's preference for developing digital switching equipment that could be interfaced with PCS equipment. Freeman states that use of its digital switch will enhance PCS by allowing "total integration of PCN, cellular, dispatch, wireless PBX, LAN data networks, wide area data networks, paging and voice messaging, along with enhancements to allow access by regular telephone subscribers to deaf subscribers and vice versa." Freeman claims that its proposal will increase spectrum efficiency by increasing control over screening and routing of telephone calls. It also claims that this control will result in reduced air time.²⁴³

217. PacTel argues that Freeman is proposing existing technology that does not appear to be innovative.²⁴⁴ Both PacTel and GTE also state that Freeman has not completed any experiments.²⁴⁵ In addition, GTE maintains that Freeman bases its request on its efforts to develop switching equipment specifically for PCS, but that its application provides little information to judge why compared to existing designs its switching design would be considered innovative.

218. In response to GTE's comments, Freeman states that its switch is only one component of its proposal, and that it has proposed a new, usable, and innovative system.²⁴⁶ In response to PacTel's comments, Freeman states that it proposes to combine elements of existing technology in a new and innovative way to provide a new and spectrally efficient service and argues that the pioneer's preference criteria recognize use of existing technology in new and innovative ways.²⁴⁷

219. In the Tentative Decision, we proposed to deny Freeman a preference because the technical showing or preliminary result did not demonstrate the feasibility of the technology, or that Freeman had not demonstrated development of the capabilities or

²⁴³ See Freeman Request for a Pioneer's Preference (May 4, 1992).

²⁴⁴ See Pacific Bell at 21 (June 10, 1992).

²⁴⁵ Id. See also GTE at 18 (June 10, 1992).

²⁴⁶ See Freeman Reply at 3 (June 25, 1992).

²⁴⁷ Id.

possibilities of a specific identifiable PCS technology or service or had brought it to a more advanced or effective state.

220. Responding to the tentative denial of its request, Freeman argues that under the pioneer's preference rules it is entitled to sufficient time to complete tests pursuant to its experimental license before the Commission determines whether its application for a preference should be granted or denied.²⁴⁸ Further, Freeman claims that its most recent report shows that it has developed the capabilities or possibilities of PCS and brought it to a more advanced and effective state.

221. We find that the progress report Freeman refers to does not demonstrate that it has completed its tests. Rather, the report indicates that Freeman merely has performed limited testing of switches and has concentrated mainly on the software aspects of those switches.²⁴⁹ Freeman does not provide any additional detail to clarify what it has accomplished that is innovative for PCS nor demonstrated the feasibility of its proposal. Accordingly, we deny Freeman's request for a pioneer's preference.

222. Grand Broadcasting Corporation (Grand) (PP-56). Grand proposes a two-way PCS service but does not provide specific details of its system. In comments on Grand's request, GTE states that Grand's proposal relies on many existing technologies and is not innovative.²⁵⁰ PacTel states that Grand does not demonstrate the proposal's technical feasibility.²⁵¹

223. In the Tentative Decision we proposed to deny Grand a pioneer's preference because Grand did not demonstrate the technical feasibility of its proposed PCS system or the capabilities of a specific identifiable PCS technology. Grand did not respond to the Tentative Decision. Accordingly, we deny Grand's pioneer's preference request.

224. Iowa Network Services, Inc. (Iowa) (PP-57). Iowa proposes to use fiber optic infrastructure as backbone for PCS and to provide wireless centralized equal access for PCS. GTE contends that Iowa has not addressed the radio portions of PCS and therefore should be denied a preference.²⁵²

²⁴⁸ See Freeman Comments and Supplemental Information (January 29, 1993).

²⁴⁹ See Progress Report at 1-2 (March 19, 1993).

²⁵⁰ See GTE at 19 (June 10, 1992).

²⁵¹ See PacTel at 13 (June 10, 1992).

²⁵² See GTE at 17 (June 10, 1992).

225. In the Tentative Decision we proposed to deny Iowa a preference because Iowa failed to submit either the preliminary results from an experiment or a sufficient showing of technical feasibility. Iowa did not respond to the Tentative Decision. Accordingly, we deny Iowa's pioneer's preference request.

226. Omnipoint Corporation, Oracle Data Publishing, Inc., and McCaw Cellular Communications, Inc. (Omnipoint Oracle) (PP-59). Omnipoint Oracle proposes a Data BroadCast Service (DBCS) or high speed, high volume information "superhighway," that it describes as a one-way data transmission service using spread spectrum techniques. In comments to Omnipoint Oracle's pioneer's preference request, PacTel argues that this service is not directly relevant to PCS. GTE states that Omnipoint Oracle has not made a sufficient showing of technical feasibility.²⁵³

227. In the Tentative Decision, we proposed to deny Omnipoint Oracle's request because its request did not demonstrate the technical feasibility of its proposal or that the requester has developed the capabilities or possibilities of a specific identifiable PCS technology or service or had brought it to a more advanced or effective state. Omnipoint Oracle did not respond to our tentative denial. Accordingly, we deny Omnipoint Oracle's pioneer's preference request.

228. Omnipoint Mobile Data Company (Omnipoint Mobile) (PP-60). Omnipoint Mobile has proposed a service it calls asymmetrical two-way wireless network (ATWN). ATWN is designed to deliver two-way data communications to mobile computing devices such as portable terminals and new pen-based computers. In comments to Omnipoint Mobile's pioneer's preference request, PacTel supports the general concept of a mobile-data service but argues against a preference for Omnipoint Mobile without further information being submitted that describes its system.²⁵⁴ GTE states that the proposal is extremely theoretical and does not demonstrate the technical feasibility of an innovation in communications technology.²⁵⁵

229. In the Tentative Decision we proposed to deny Omnipoint Mobile's request because its request did not demonstrate the technical feasibility of its proposal or that the requester has developed the capabilities or possibilities of a specific identifiable PCS technology or service or had brought it to a more advanced or effective state. Omnipoint Mobile did not respond to the Tentative Decision. Accordingly, we deny Omnipoint Mobile's pioneer's preference request.

²⁵³ See PacTel at 14 and GTE at 12 (June 10, 1992).

²⁵⁴ See PacTel at 29 (June 10, 1992).

²⁵⁵ See GTE at 19 (June 10, 1992).