



TABLE OF CONTENTS

	<u>Page</u>
SUMMARY.....	i
STATEMENT OF FACTS.....	2
ARGUMENT.....	10
I. AMT and DSST Have Demonstrated the Technical Feasibility of Their Proposal.....	11
II. AMT's and DSST's Proposal Is Compatible with the Rules Adopted by the Second Report and Order..	16
III. Grant of a Preference to AMT and DSST is Warranted By Their Development of Specialized PCS.	20
IV. Conclusion.....	22

## SUMMARY

Advanced MobileComm Technologies, Inc. ("AMT") and Digital Spread Spectrum Technologies, Inc. ("DSST") hereby jointly petition the Commission for reconsideration of the Third Report and Order in General Docket 90-314. In particular, AMT and DSST hereby request that the FCC reconsider its denial of their pioneer's preference requests as reflected in paragraphs 159-166 of the Third Report and Order. In addition, AMT and DSST request that the Commission reconsider its grant of preferences to APC, Cox and Omnipoint to the extent that such grants are based upon an inconsistent application of relevant criteria between AMT/DSST and APC, Cox and Omnipoint or on a record tainted by procedural inadequacies. On reconsideration, AMT and DSST request that the FCC grant their requests for pioneer's preferences in this Docket.

In their Request For Pioneer's Preference and their Joint Comments and Joint Reply Comments on the Tentative Decision, AMT and DSST extensively documented the results of their cooperative PCS technical and market research and development efforts that resulted, among other things, in their Request For Pioneer's Preference and in their submission of a Joint Petition For Further Rulemaking in this Docket seeking the adoption of service rules to accommodate the provision of specialized PCS services. Notwithstanding this extensive documentation, the FCC's substantive conclusions concerning the "technical feasibility" of the AMT/DSST proposal appear based

solely upon its finding in the Tentative Decision that AMT and DSST had not demonstrated their proposed 2 GHz equipment through field testing. The FCC erred factually in this conclusion by disregarding the unparalleled record of DSST's parent, Cylink, in commercially developing and deploying spread spectrum radios upon which the AMT/DSST S-CDMA/FDMA/TDD PCS architecture was based. The Commission erred further by effectively according decisional significance to legal criteria of which it had not provided adequate notice to AMT and DSST prior to the May 4, 1992 due date for preference requests in this Docket, and by applying those criteria inconsistently between AMT/DSST and the three preference selectees.

The FCC's further conclusion that the AMT/DSST proposal to deploy a 5 MHz PCS system with open entry access to additional capacity up to the licensed bandwidth is incompatible with its PCS spectrum allocation similarly is in error. AMT/DSST have demonstrated that their system architecture will work well within a 10, 20 or 30 MHz bandwidth and, indeed, will facilitate the provision of many specialized PCS services. In any event, all three preference selectees either submitted spectrum proposals greatly varying from that adopted in the Second Report and Order or submitted no proposal with their preference request.

In their Joint Comments on the Tentative Decision, AMT and DSST noted that, unique among the preference applicants, their cooperative PCS experimentation targeted the research and development of advanced and specialized PCS services. To this

end, AMT and DSST proposed a highly-spectrally efficient architecture employing fundamental design principles proven in the commercial marketplace capable of addressing immediate specialized PCS demand and ultimately providing full featured region-wide PCS service. In its Second Report and Order in this Docket, the FCC departed from the PCS spectrum allocation plan proposed in the PCS Notice of Proposed Rulemaking to provide license allocations in 10 MHz and 20 Mhz Blocks. One of the principal stated reasons for this departure was the recognized need to provide for "the more specialized services that can be accommodated in smaller blocks of spectrum," thus confirming a seat at the table for the emerging services that have been the focus of the AMT/DSST experimentation. Accordingly, on reconsideration, AMT and DSST respectfully urge the Commission to recognize their contributions in developing an "innovative proposal that [has led] to the establishment of a service not currently provided or a substantial enhancement of an existing service...."

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

RECEIVED

MAR 7 - 1994

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Amendment of the Commission's	)	General Docket No. 90-314
Rules to Establish New	)	
Personal Communications	)	RM-7140, RM-7175, RM-7618
Services	)	
	)	PP-6 through PP-10, PP-12,
	)	PP-13, PP-15 through PP-20,
	)	PP-26, PP-27, PP-41 through
	)	PP-52, PP-54 through PP-68,
	)	PP-70, PP-72 through PP-78

To: The Commission

JOINT PETITION FOR RECONSIDERATION

Advanced MobileComm Technologies, Inc. ("AMT") and Digital Spread Spectrum Technologies, Inc. ("DSST"), by their counsel and pursuant to Section 1.106 of the Commission's Rules, hereby jointly petition the Commission for reconsideration of the Third Report and Order, FCC 93-550 (February 3, 1994) in the above-captioned proceeding.<sup>1</sup> In particular, as set forth below, AMT and DSST respectfully request that the FCC reconsider its denial of their requests for pioneer's preferences.<sup>2</sup> In addition, AMT and DSST request that the Commission reconsider its grant of preferences to APC, Cox and Omnipoint to the extent that such grants are based upon an inconsistent application of relevant criteria between AMT/DSST and APC, Cox and Omnipoint or

<sup>1</sup>Amendment of the Commission's Rules to Establish New Personal Communications Services (Third Report and Order), FCC 93-550 (February 3, 1994) ("Third Report and Order").

<sup>2</sup>Third Report and Order at paras. 159-166.

on a record tainted by procedural inadequacies.

On reconsideration, AMT and DSST urge that the Commission find that their pioneering efforts in developing advanced and specialized PCS services and technologies have fully satisfied the criteria enunciated in Gen Docket 90-217.<sup>3</sup> On this basis, AMT and DSST request that the Commission grant their pioneer's preference requests in this Docket.

---

<sup>3</sup>Establishment of Procedures to Provide A Preference to Applicants Proposing An Allocation For New Services, 6 FCC Rcd 3488, 69 RR 2d 141 (1991) ("Pioneer's Preference Order"), recon granted in part, denied in part, 7 FCC Rcd 1808, 70 RR 2d 594 (1992) ("Pioneer's Preference Reconsideration Order"), further recon. denied, 8 FCC Rcd 1659 (1993) ("Pioneer's Preference Further Reconsideration Order").

## STATEMENT OF FACTS

AMT<sup>4</sup> and DSST<sup>5</sup>, through their parent and affiliated companies, have committed substantial levels of funding to the research, development and experimental testing of PCS products and services, and each has dedicated substantial technical and market resources to their efforts. In the course of their experimental PCS efforts, AMT and DSST independently expressed to the Commission their vision of the United States PCS infrastructure as one that would accommodate the provision of many different services and products, ranging from fully interconnected portable telephone service to more specialized

---

<sup>4</sup>AMT is an affiliate of Advanced MobileComm, Inc. ("AMI"), one of the largest providers of Specialized Mobile Radio services in the nation, and a subsidiary of FMR Corp. which, together with its subsidiaries (collectively "Fidelity Investments") is the nation's largest privately-owned investment management organization. AMT was formed to focus the operational expertise of AMI in emerging wireless communications technologies and the institutional experience of Fidelity Investments in managing a sophisticated telecommunications infrastructure into the PCS field.

<sup>5</sup>DSST is a subsidiary of Cylink Corporation ("Cylink"). DSST's on-going PCS research, development and experimentation is led by Dr. Jim K. Omura, co-founder and Chairman of Cylink. Dr. Omura has co-authored three volumes on spread spectrum technologies, has published numerous papers and treatises on the application of spread spectrum and Code Division Multiple Access ("CDMA") technology to PCS and is a recognized expert in the field. See J.K. Omura, Spread Spectrum Radios For Personal Communication Services, IEEE Second International Symposium on Spread Spectrum Techniques and Applications (ISSSTA 1992); M.K. Simon, J.K. Omura, R.A. Schultz, and B.K. Levitt, Spread Spectrum Communications, 3 Vols., Computer Science Press, 1985. Dr. Omura addressed the FCC's September 11, 1990 tutorial on "Spread Spectrum for Mainstream Communications." DSST was formed by Cylink in 1990 for the purpose of focusing Cylink's considerable spread spectrum technology, marketing and regulatory expertise on the research, development and experimental deployment of PCS products and services.

applications, such as wireless PBXs and wireless LANs.<sup>6</sup> AMT and DSST thus shared the view that given the breadth of new wireless services becoming available in Europe and elsewhere and the certainty that other, as yet undefined, services would continue to emerge, there could be no single technology or service that alone would define "PCS."

AMT and DSST recognized the commonality of their approach to developing an optimal PCS marketplace. Perceiving the opportunity to develop a PCS system architecture optimized to serve emerging and specialized marketplaces, AMT and DSST entered into cooperative PCS research and development activities designed to blend their technical, regulatory, financial and operational expertise to attain research and developmental synergies otherwise unreachable.

Based upon the expertise developed through Cylink's pioneering of spread spectrum products, and the synergies reached by the coupling of their PCS development programs, AMT and DSST developed and proposed the spectrally-efficient PCS architecture described in the AMT/DSST Request For Pioneer's Preference.<sup>7</sup>

---

<sup>6</sup>See Comments of FMR Corp., GEN. Docket No. 90-314 (October 1, 1990); Reply Comments of FMR Corp., GEN. Docket No. 90-314 (January 15, 1991); Reply Comments of Digital Spread Spectrum Technologies, Inc., GEN. Docket No. 90-314 (January 15, 1991).

<sup>7</sup>In their joint filing, AMT requested a pioneer's preference to construct and operate a PCS system to serve the Boston, Massachusetts area, and DSST requested a pioneer's preference to construct and operate a PCS system to serve the San Francisco, California area. Recognizing that the synergies attained by their research and development coupling would be equally beneficial in the operation of a PCS system, AMT and DSST requested that in the event the Commission viewed their joint

Specifically, AMT's and DSST's Request proposed to provide PCS employing Synchronous Code Division Multiple Access ("S-CDMA")/ Frequency Division Multiple Access ("FDMA")/ Time Division Duplexing ("TDD") technology in a microcellular architecture.<sup>8</sup>

In its Tentative Decision addressing the broadband PCS preference requests, the FCC found that "many aspects of the [AMT/DSST] proposals appear innovative."<sup>9</sup> The Commission nonetheless tentatively denied the AMT/DSST Request on two grounds, concluding that "neither party appears to have developed 2 GHz PCS technology to the point of field testing" and that "the spectrum scheme proposed by [AMT/DSST] is substantially different than that which we proposed...."<sup>10</sup> The FCC stressed in its Tentative Decision that its "decisions both granting and denying pioneer's preference requests are tentative, not final, and we will carefully review comments before reaching a final

---

research and development as meritorious of a single pioneer's preference, that preference be issued in the name of the "AMT/DSST Joint Venture" and that AMT/DSST be permitted to select between a license for the PCS service area encompassing the Boston area and the service area encompassing the San Francisco area. Request Of Advanced MobileComm Technologies, Inc. and Digital Spread Spectrum Technologies, Inc. For A Pioneer's Preference, GEN Docket 90-314, PP-42 (May 1, 1992) ("AMT/DSST Request").

<sup>8</sup>Exhibit 4 to the AMT/DSST January 29, 1993 Joint Comments on the Tentative Decision provides extensive detail concerning the technical design of the S-CDMA/FDMA/TDD architecture.

<sup>9</sup>Amendment of the Commission's Rules to Establish New Personal Communications Services (Tentative Decision), 7 FCC Rcd 7794 (1992) ("Tentative Decision").

<sup>10</sup>Id.

determination."<sup>11</sup>

In their Joint Comments and Joint Reply Comments on the Tentative Decision, AMT and DSST asked that the FCC revisit the bases of its tentative denial of their Request.<sup>12</sup> In particular, AMT and DSST noted that, alone among the PCS preference requesters, they had focused their efforts at developing a highly-spectrally efficient PCS architecture designed to promote the development and deployment of an array of specialized PCS services, including health care and home care, public and personal safety and educational applications. AMT and DSST described the extensive foundation of their PCS experimental efforts as the development and commercial deployment by Cylink of ten state-of-the-art spread spectrum radios in frequency bands ranging from 900 MHz to 5.7 GHz that, among other things, provide the ability to interconnect cells on a cost-efficient basis and that are readily adaptable for use in a PCS microcell configuration.

AMT and DSST, moreover, demonstrated in their Joint Comments and Joint Reply Comments on the Tentative Decision that their Request and their S-CDMA/FDMA/TDD system architecture was

---

<sup>11</sup>Id. at 7804, n.20. Commissioner Barrett emphasized in his Separate Statement to the Tentative Decision that "I would feel more comfortable with this decision if the distinctions between those tentatively selected and those tentatively denied were more clear, particularly where extensive experimental efforts have occurred." Id. at 7817. Commissioner Barrett further added that "[i]f this were not a tentative decision, I would not feel comfortable supporting it." Id.

<sup>12</sup>AMT/DSST Joint Comments, GEN Docket 90-314 (January 29, 1993); Joint Reply Comments, GEN Docket 90-314 (March 1, 1993).

fully compatible with the FCC's spectrum proposal in its Notice of Proposed Rulemaking in this Docket.<sup>13</sup> AMT and DSST further demonstrated that their pioneering efforts were at least as meritorious as those of American Personal Communications, Inc. ("APC"), Cox Enterprises, Inc. ("Cox") and Omnipoint Communications, Inc. ("Omnipoint"), the three preference applicants whose requests were tentatively granted by the Tentative Decision. In this respect, AMT and DSST noted that, like Omnipoint, they had developed a spread spectrum radio readily adaptable to operation in the 2.4 GHz unlicensed Part 15 band and the 2 GHz PCS band, that, like Cox, they had developed equipment that could function to interconnect PCS microcells without the need for an additional spectrum allocation, and that, like APC, they had developed a PCS architecture based upon a coordination and avoidance strategy for co-existing with the existing fixed microwave services in the band.

In its Second Report and Order in GEN Docket 90-314, the Commission adopted service rules to govern the issuance of broadband PCS licenses.<sup>14</sup> Notably, the spectrum allocation in the Second Report and Order differed significantly from that proposed in the PCS NPRM, on which the judgments of the Tentative Decision were based, by providing for licenses with bandwidths of

---

<sup>13</sup>Amendment of the Commission's Rules to Establish New Personal Communications Services (Notice of Proposed Rulemaking and Tentative Decision), 7 FCC Rcd. 5676 (1992) ("PCS NPRM").

<sup>14</sup>Amendment of the Commission's Rules to Establish New Personal Communications Services (Second Report and Order), 8 FCC Rcd 7700 (1993) ("Second Report and Order").

10 MHz, 20 MHz and 30 MHz. In so holding, Commissioner Duggan characterized the Commission's intent:

that the marketplace determine the optimal size of spectrum blocks and service areas for the many different visions of PCS we hope to see. Our allocation plan, for example, will permit proponents of wide area, broadband PCS to bid for larger spectrum blocks. But it will also allow the more specialized services that can be accommodated in smaller blocks of spectrum.

Second Report and Order, Statement of Commissioner Ervin S. Duggan at 1.

Concurrent with adoption of the Second Report and Order, the FCC initiated ET Docket 93-266 to generally review the applicability of its pioneer's preference rules to radio services where licenses will be issued through competitive bidding procedures pursuant to the amendments to Title III of the Communications Act enacted in the Omnibus Budget Reconciliation Act of 1993.<sup>15</sup> In its Notice of Proposed Rulemaking in that Docket, the FCC further proposed to eliminate the tentative decision stage employed in its pioneer's preference review, noting that:

Eliminating the tentative decision stage would permit the Commission and the public to consider fully the pioneering efforts and technologies in conjunction with the proposed service, rather than making a tentative decision before determining the specifics of whether a service should be established or rules amended governing an existing service.<sup>16</sup>

---

<sup>15</sup>Pub. L. No. 103-66, Title VI, Section 6002(b), 107 Stat. 312, 392 (1993).

<sup>16</sup>Review of the Pioneer's Preference Rules (Notice of Proposed Rulemaking), 8 FCC Rcd 7693, 7694 (1993).

The Commission otherwise proposed to "clarify that innovative technology is a necessary basis for award."<sup>17</sup>

In their Joint Comments on the Notice of Proposed Rulemaking in ET Docket 93-266, AMT and DSST supported the proposed modifications to the pioneer's preference rules, noting that a tentative denial may serve to dampen the ability of prospective pioneers to continue to attract needed investment capital to continue to pursue their requests until the conclusion of the process. Conversely, AMT and DSST noted, a tentative grant may give rise to an unwarranted expectation or sense of entitlement in the pioneer applicant or in the financial community. In both cases, AMT and DSST argued, the tentative judgments shade the ability of pioneer applicants to aggressively prosecute their requests and influence the balance of the proceeding.<sup>18</sup> The FCC's proposals to modify its processing procedures for pioneer's preference requests are pending as of the date of this Joint Petition.<sup>19</sup>

The Third Report and Order in GEN Docket 90-314, that is the subject of this Joint Petition, was released on February

---

<sup>17</sup>Id.

<sup>18</sup>AMT/DSST Joint Comments, ET Docket 93-266 (November 15, 1993) at 12-16.

<sup>19</sup>By a First Report and Order, FCC 93-551 (January 28, 1994) in ET Docket 93-266, the FCC concluded that "it would be inequitable to apply any changes in our rules to pending proceedings in which Tentative Decisions have been issued." Id. at para. 9. The Commission there indicated that it anticipated concluding its more general review of the pioneer's preference rules in a later Report and Order. Id. at para. 10.

3, 1994.<sup>20</sup> That Report and Order adopts each tentative decision with respect to the broadband PCS preference requests earlier reached in the Tentative Decision. To this end, APC is awarded a preference "for having developed and demonstrated technologies that facilitate spectrum sharing by mobile PCS and fixed microwave systems at 2 GHz." Cox is granted a preference "for having developed and demonstrated the feasibility of innovatively using cable television facilities as part of the PCS infrastructure." Omnipoint is awarded its preference "for having designed and manufactured a 2 GHz spread spectrum handset and associated base station equipment." Third Report and Order at para. 7.

The Third Report and Order finds that AMT's and DSST's proposals contain two "possibly innovative developments," namely its proposed use of FDMA/S-CDMA/TDD equipment at 2 GHz and its proposed open entry system architecture. Id. at para. 165. The Commission's denial there of the AMT/DSST Request is predicated upon its affirmation of the Tentative Decision's finding that the AMT/DSST proposal is "incompatible with the spectrum scheme adopted [in the Second Report and Order]" and its conclusion that AMT and DSST have not demonstrated the technical feasibility of their 2 GHz equipment.

---

<sup>20</sup>A synopsis of the Third Report and Order was published in the Federal Register on February 28, 1994. 59 Fed. Reg. 9419.

## ARGUMENT

In their Request For Pioneer's Preference and their Joint Comments and Joint Reply Comments on the Tentative Decision, AMT and DSST extensively documented the results of their cooperative PCS technical and market research and development efforts that resulted, among other things, in their Request For Pioneer's Preference and in their submission of a Joint Petition For Further Rulemaking in this Docket seeking the adoption of service rules to accommodate the provision of specialized PCS services. Notwithstanding this extensive documentation, the FCC's substantive conclusions concerning the "technical feasibility" of the AMT/DSST proposal appear to be based solely upon its finding in the Tentative Decision that AMT and DSST had not demonstrated their proposed 2 GHz equipment through field testing. The FCC erred factually in this conclusion by disregarding the unparalleled record of DSST's parent, Cylink, in commercially developing and deploying spread spectrum radios upon which the AMT/DSST S-CDMA/FDMA/TDD PCS architecture was based. The Commission erred further by effectively according decisional significance to legal criteria of which it had not provided adequate notice to AMT and DSST prior to the May 4, 1992 due date for preference requests in this Docket, and by applying those criteria inconsistently between AMT/DSST and the three preference selectees.

The FCC's further conclusion that the AMT/DSST proposal to deploy a 5 MHz PCS system with open entry access to additional

capacity up to the licensed bandwidth is incompatible with its PCS spectrum allocation similarly is in error. AMT/DSST have demonstrated that their system architecture will work well within a 10, 20 or 30 MHz bandwidth and, indeed, will facilitate the provision of many specialized PCS services. In any event, all three preference selectees either submitted spectrum proposals greatly varying from that adopted in the Second Report and Order or submitted no proposal with their preference request.

I. AMT and DSST Have Demonstrated the Technical Feasibility of Their Proposal

In their Request For Pioneer's Preference, AMT and DSST submitted extensive descriptions of the technical bases of their S-CDMA/FDMA/TDD PCS system architecture and described in detail the substantial expertise of DSST's parent, Cylink, in developing and deploying spread spectrum radios in commercial markets. See AMT/DSST request at 30-32; Appendices A-C. This documentation included, among other material, a detailed technical analyses of the proposed system (Appendices A-1, A-2 and B) and an analysis of spectral efficiency and the amount of spectrum needed for public and private PCS systems (Appendix C). AMT and DSST also submitted the detailed technical qualifications of the principals engaged in their cooperative research and development (Joint Comments, Exhibit 3), a list of relevant publications of those principals (Joint Comments, Exhibit 3) and an extensive chronology together with supporting material of the spread spectrum product development of Cylink (Joint Comments, Exhibit 6).

In its Third Report and Order (at para. 166), the Commission states that in the Tentative Decision "we found that AMT and DSST had failed to demonstrate the technical feasibility of this equipment" and concludes that "[w]e continue to believe that AMT and DSST have failed to demonstrate the equipment's technical feasibility." The Third Report and Order is otherwise silent concerning the technical showings made by AMT and DSST. As a threshold matter, therefore, the FCC's failure to consider all material facts and issues presented in the record constitutes clear error. Getty v. FSLIC, 805 F.2d 1050 (D.C. Cir. 1986); Brae Corporation v. United States, 740 F.2d 1023 (D.C. Cir. 1984); Motor and Equipment Manufacturers Association v. EPA, 627 F.2d 1095 (D.C. Cir. 1979).

In its Tentative Decision, the Commission found that "[n]either [AMT nor DSST] appears to have developed 2 GHz PCS technology to the point of field testing" but did not otherwise conclude that AMT and DSST had failed to demonstrate the "technical feasibility" of their equipment.<sup>21</sup> By contrast, the FCC specifically concluded in the Tentative Decision that 22 other preference requesters expressly had failed to demonstrate the technical feasibility of their proposals.<sup>22</sup> Accordingly, the conclusion of the Tentative Decision apparently affirmed by the Third Report and Order is that AMT and DSST have failed to demonstrate the technical feasibility of their equipment through

---

<sup>21</sup>7 FCC Rcd at 7807.

<sup>22</sup>Id. at 7804-5.

2 GHz field testing.

In this respect, the Third Report and Order erroneously elevates 2 GHz field testing to a criterion of decisional significance. In its Pioneer's Preference Order, the Commission expressly disclaimed field testing as a dispositive criterion in evaluating preference requests, stating:

One can envision instances where significant technical and new service advances can be developed with little or no field testing required or where it is best to conduct the testing in confined or remote areas.<sup>23</sup>

Indeed, it was precisely because field testing was not to be a sine qua non of a pioneer's preference that the Commission provided that preference applicants could otherwise demonstrate the technical feasibility of their proposals:

[I]n cases where an experiment is not performed, we will require the petitioner to accompany its preference request with a demonstration of the technical feasibility of the new service or technology.<sup>24</sup>

The Commission's conclusion in this respect was affirmed in the Pioneer's Preference Reconsideration Order (at paras. 10-11).

In according decisional significance to its Tentative Decision's conclusion that AMT and DSST have not engaged in 2 GHz field testing, the Commission thus has misapplied the criteria enunciated in its Pioneer's Preference Order. As a result, the denial of the AMT/DSST Request is based upon the application of legal criteria upon which AMT and DSST were provided no notice or

---

<sup>23</sup>6 FCC Rcd at 3493.

<sup>24</sup>Id.

opportunity to comment. See NLRB v. Wyman-Gordon Co., 394 U.S. 759 (1969); Mobil Oil v. FPC, 483 F.2d 1238 (D.C. Cir. 1973). As a legal matter, therefore, the FCC's denial of the AMT/DSST Request is infirm.

As a factual matter, the FCC's finding that AMT/DSST have not demonstrated the technical feasibility of their proposal is equally infirm. That finding disregards not only the extensive record evidence submitted by AMT and DSST describing and analyzing their proposal, and the experimental operations conducted by AMT and DSST pursuant to four experimental authorizations, but also the unmatched expertise of Cylink in developing and commercially deploying ten spread spectrum radio products in the 902-928 MHz, 2.4 GHz and 5.8 GHz Part 15 bands. As detailed by AMT and DSST (Joint Comments, Exhibit 6), these efforts have included the testing and deployment of commercial spread spectrum radios in many configurations, including handsets, Wireless PBX and point-to-point applications. To the extent that field testing of relevant technology provides an adequate basis for establishing the technical feasibility of a proposal, AMT and DSST respectfully submit that the actual commercial deployment of relevant technology by Cylink provides a superior basis for establishing the technical feasibility of their proposal.

AMT and DSST have consistently stated throughout the course of this Docket their view that the paramount technical challenge in the design of PCS spread spectrum radios is the

development of the digital baseband, and not the design of the radio frequency segment. See, e.g., Third Report and Order at n.86. Thus, AMT and DSST noted in their Request (Appendix A-1 at 1) that "the choice of spectrum band is not at all critical." In this respect, the Commission has cited the capabilities of Omnipoint's equipment to operate in either a licensed or unlicensed service ("dual mode") as a contributing factor to the grant of its preference request. Third Report and Order at para. 60. The FCC similarly has credited Cox's development of its Cable Microcell Integrator ("CMI") to interconnect microcells without the need for an allocation of support spectrum (Id. at para. 49), a capability that is also provided by Cylink's spread spectrum radios in the unlicensed bands.

Accordingly, the Third Report and Order's denial of the AMT/DSST Request for a failure to demonstrate the feasibility of 2 GHz PCS equipment, and its apparent failure to credit AMT/DSST for Cylink's extensive spread spectrum expertise, is flatly inconsistent with the credits provided Omnipoint and Cox for their work outside the 2 GHz band. In this respect the Third Report and Order affords dissimilar treatment to similarly situated parties. See Cotton Petroleum Corporation, et.al. v. U.S. Dept. of the Interior, 870 F.2d 155 (10th Cir. 1989); Green Country Mobilephone, Inc. v. FCC, 246 App. D.C. 366, 765 F.2d 235 (D.C. Cir. 1985). AMT and DSST thus request that, on reconsideration, the FCC accord similar credit to their proposal for Cylink's expertise in the development and deployment of

spread spectrum radios as was provided to Omnipoint and Cox for their development of a dual mode handset and CMI, respectively.

II. AMT's and DSST's Proposal Is Compatible with the Rules Adopted by the Second Report and Order

In denying the AMT/DSST Request, the Third Report and Order affirms the Tentative Decision's conclusion that the AMT/DSST open entry proposal is "incompatible with the spectrum scheme adopted because only one license per spectrum block per service area may be granted." Third Report and Order at para. 165. AMT's and DSST's proposal, in particular, suggested that the FCC license PCS in 5 MHz blocks, with dynamic access to additional capacity available to the licensees on an as needed basis. AMT's and DSST's proposal in this respect was prompted by the expected levels of spectral efficiency of their S-CDMA/FDMA/TDD architecture. Consistent with the intent of the pioneer's preference rules, AMT and DSST thus requested initially only that amount of spectrum which they anticipated as required to construct and operate a viable PCS system employing their system architecture.<sup>25</sup>

AMT and DSST, however, indicated clearly in their Request (Appendix D at 6) that although they advocated an open entry licensing regime, their proposed system architecture "will ... provide the same benefits enumerated [in the Request] with other licensing regimes as well, and the Request is therefore applicable generally to such regime as the Commission may find

---

<sup>25</sup>Pioneer's Preference Order at para. 48.

advisable for PCS services."

By contrast, APC suggested in its Pioneer's Preference Request that the FCC award 50 MHz PCS licenses. APC Pioneer's Request at 36. Omnipoint noted only in its Request that its spread spectrum system employs 10 MHz and sub 10 MHz frequency channelization. Omnipoint Request at 17. Cox did not make any recommendations to the Commission concerning PCS license bandwidth in its Preference request. Subsequent to the FCC's tentative grant of APC's, Cox's and Omnipoint's preference requests, each of these applicants advocated the allocation of at least 40 MHz PCS licenses. See Comments of Cox Enterprises, Inc., GEN Docket 90-314 (November 9, 1992); Comments of Omnipoint Communications, Inc., GEN Docket 90-314 (November 9, 1992); Comments of American Personal Communications, Inc., GEN Docket 90-314 (November 9, 1992). Omnipoint actually opposed the allocation of 30 MHz PCS licenses.<sup>26</sup>

The Third Report and Order, however, does not penalize APC, Cox or Omnipoint for the inconsistencies between their spectrum proposals and that adopted in the Second Report and Order. Thus, to the extent that the Commission's denial of the AMT/DSST Request is premised upon a difference in spectrum proposals, its grant of preferences to APC and Omnipoint, which also had substantially different spectrum proposals, and to Cox,

---

<sup>26</sup> Omnipoint advocated the allocation of 40 MHz or 60 MHz licenses in General Docket 90-314. Comments of Omnipoint Communications, Inc., Gen. Docket 90-314 (November 9, 1993) at 9.

which had no spectrum proposal, affords dissimilar treatment to similarly situated applicants. See Cotton Petroleum Corporation, et.al. v. U.S. Dept. of the Interior, supra.; Green Country Mobilephone, Inc. v. FCC, supra.

The Commission further has erroneously concluded that AMT's/DSST's open entry proposal is incompatible because it would require the issuance of more than one license per spectrum block per service area. To the contrary, as described in the Second Report and Order (at para. 44), open architecture licensing would require only that the licensee of the PCS spectrum block provide access to spectrum and essential facilities to permit the provision of service by unlicensed providers under its host license.

Finally, denial of the AMT/DSST Request for spectrum incompatibility appears to penalize AMT and DSST for spectrum efficiency contrary to the principal intent of the pioneer's preference rules and established Commission policy. In particular, AMT and DSST requested the least amount of spectrum of any preference applicant, less even than the 10 MHz minimum PCS allocations provided in the Second Report and Order. Denial of the AMT and DSST Request because of spectrum incompatibility under these circumstances will establish a precedent that will deter innovation in the future development of spectrally-efficient technologies.<sup>27</sup>

---

<sup>27</sup>Finally, in view of its proposals in ET Docket 93-266, the FCC's analyses of all of the broadband preference requests appear tainted by the preliminary decisions reached in the Tentative

III. Grant of a Preference to AMT and DSST Is Warranted by their Development of Specialized PCS

In their Joint Comments on the Tentative Decision, AMT and DSST noted that, unique among the preference applicants, their cooperative PCS experimentation targeted the research and development of advanced and specialized PCS services. To this end, AMT and DSST proposed a highly-spectrally efficient architecture employing fundamental design principles proven in the commercial marketplace capable of addressing immediate specialized PCS demand and ultimately providing full featured region-wide PCS service. In addition, AMT submitted research demonstrating a need for spectrum to support wireless PBX service (Request, Appendix C) and identifying with particularity a host of emerging specialized services.<sup>28</sup>

In its Second Report and Order in this Docket, the FCC departed from the PCS spectrum allocation plan proposed in the PCS Notice of Proposed Rulemaking to provide license allocations in 10 MHz and 20 Mhz Blocks. One of the principal stated reasons for this departure was the recognized need to provide for "the more specialized services that can be accommodated in smaller blocks of spectrum," thus confirming a seat at the table for the emerging services that have been the focus of the

---

Decision. Because the Tentative Decision was reached without the benefit of the final PCS service rules, the affirmation of those tentative conclusions in the Third Report and Order absent a de novo review is also flawed.

<sup>28</sup>AMT/DSST Joint Petition For Further Rulemaking, Gen Docket 90-314 (August 25, 1993) at Exhibit 1.