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

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the matter of )  
)  
Amendment of the Commission's )  
Rules to Establish New Personal )  
Communications Services )

GEN Docket No. 90-314

**UTAM REPORT TO THE FCC**

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July 3, 1995

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UTAM, Inc. ("UTAM"), the frequency coordinator for Unlicensed Personal Communications Services ("UPCS"), herewith submits its first Report on progress achieved in implementing the UTAM Plan for Financing and Managing 2 GHz Microwave Relocation from spectrum allocated for UPCS<sup>1</sup>. As detailed below, UTAM has completed many of the challenging tasks necessary to allow UPCS devices to be deployed and begin generating revenues for spectrum clearing. As a result, UTAM is pleased to announce that manufacturers or other parties desiring equipment authorizations for UPCS products and devices may begin submitting certification requests and signed Subscriber Agreements to UTAM effective July 31, 1995. With the submission of such agreements and the grant of UTAM certification, UPCS products that have received FCC equipment authorizations will be ready for deployment

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<sup>1</sup> UTAM Plan for Financing and Managing 2 GHz Microwave Relocation, GEN Docket No. 90-314 (filed Aug. 1, 1994)[hereinafter "UTAM Plan"]. On April 19, 1995, the Commission formally approved UTAM as the UPCS frequency coordinator. As part of its responsibilities, UTAM was charged with submitting biannual progress reports with the initial report due July 1, 1995. Amendment of the Commission's Rules to Establish New Personal Communications Services, GEN Docket No. 90-314 (Apr. 19, 1995)(Fourth Memorandum Opinion and Order).

pursuant to UTAM coordination procedures.<sup>2</sup> At that time, deployment through site-specific coordination can occur anywhere in the United States, and Zone 1 deployment can occur immediately within approximately 100 counties. In anticipation of such approvals, UTAM has worked aggressively to test and finalize its processes for the deployment of UPCS systems and devices. UTAM believes that the past and ongoing efforts of its members have established a sound framework for bringing the benefits of UPCS to the American public as rapidly as possible

## **I. EXECUTIVE SUMMARY**

Under FCC rules, no UPCS system or device can be sold, marketed, distributed or deployed until several important conditions are met. First, a Subscriber Agreement with UTAM must be executed.<sup>3</sup> Second, UTAM must certify that the system or device meets compliance procedures and passes UTAM's Location Verification and Disablement Test Suite.<sup>4</sup> Third, and separate from UTAM approval, FCC equipment authorizations must be obtained. Fourth, UPCS deployment must be consistent with coordination procedures established by UTAM to ensure that when activated, systems or devices will not cause harmful interference to microwave licensees.

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<sup>2</sup> Under FCC rules, parties must execute a signed Subscriber Agreement with UTAM, receive UTAM certification and, obtain FCC authorization before marketing or installing a UPCS product or device. See 47 C.F.R. § 15.307.

<sup>3</sup> See Section II.A.

<sup>4</sup> See Appendices B and C.

In response to its responsibilities as the UPCS frequency coordinator, UTAM is pleased to report that the following tasks have been accomplished:

- UTAM will begin accepting executed subscriber agreements effective July 31, 1995. A final draft of the Subscriber Agreement is set forth at Appendix A. UTAM's Board will formally consider its adoption on July 14, 1995.
- Trials of UTAM's certification procedures and Location Verification and Disablement Test Suite for UPCS equipment have been completed, and the procedures will be formalized this month. UTAM will begin accepting requests for compliance certification and showings under its Location Verification and Disablement Test Suite effective July 31, 1995. Drafts of these documents are set forth at Appendices B and C.
- Communications Certification Laboratory ("CCL") has been retained by UTAM to evaluate systems and devices for compliance with the Location Verification and Disablement Test Suite. CCL is an independent laboratory and will adhere to strict confidentiality guidelines.
- Zone 1 and Zone 2 prior coordination notification procedures are being reviewed and finalized. A Zone 1 PCN was issued on June 9, 1995, for Washington, D.C. and several surrounding counties. It is expected that Zone 2 processes will be completed this quarter.<sup>5</sup>
- UTAM is finalizing expected classifications of U.S counties as Zone 1 pre-coordinated or Zone 2 site-specific coordination areas. UTAM will announce county classifications as soon as the PCNs are completed. It is anticipated that at least 100 counties initially will meet Zone 1 criteria.
- A Prime Frequency Coordinator will be selected and will issue all Zone 1 PCNs and oversee Zone 2 site-specific coordinations.
- The database management system has been installed at UTAM's office to maintain relocation and deployment information. Radio Dynamics was retained to design the database system

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<sup>5</sup> See Section II.C.

While the foregoing actions focus on initial deployment challenges, UTAM also is working on its ultimate responsibility of relocating microwave links. UTAM is in the process of ranking all microwave links in the unlicensed band by their clearing priority and expects to begin its first microwave link relocation negotiations in the fourth quarter of this year.

As summarized above and detailed in the Report, UTAM has achieved substantial progress in meeting its obligations as the UPCS frequency coordinator. It should be noted that this progress was only possible due to the voluntary contributions of its members. UTAM is confident that it will continue to successfully fulfill its obligations and facilitate the expeditious delivery of unlicensed PCS products to the public.

## **II. DEPLOYMENT ACTIVITIES**

### **A. Subscriber Agreement**

All manufacturers intending to seek FCC equipment authorization will be required to sign a Subscriber Agreement acknowledging their responsibility to comply with FCC rules and UTAM requirements regarding the deployment of unlicensed devices and systems. UTAM has spent considerable time studying the issues facing manufacturers and made significant improvements to the draft filed with the UTAM

Plan.<sup>6</sup> A copy of the final draft of the Subscriber Agreement is attached as Appendix A. The final draft will be considered for adoption at UTAM's July 14, 1995, Board meeting. Thereafter, UTAM will begin accepting executed Agreements by July 31, 1995 which will allow manufacturers to begin the equipment authorization process.

**B. Coordinatable Equipment Certification**

In order for an unlicensed PCS device to be certified by the FCC, UTAM must ensure that the device complies with its certification procedures as well as location verification and disablement requirements.<sup>7</sup> UTAM has developed Certification Procedures outlining the methods by which the testing will be conducted. It also has continued development of the Disablement Test Suite and Location Verification Procedures which outline the requirements that unlicensed products must meet. UTAM expects that these documents will be completed this month and that certification requests will be accepted by UTAM effective July 31, 1995<sup>8</sup>

To assist UTAM, a laboratory specializing in certification was selected to evaluate manufacturers' methods for fulfilling the Location Verification and

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<sup>6</sup> See Section E below

<sup>7</sup> "An application for certification of a PCS device that is deemed by UTAM, Inc. to be noncoordinatable will not be accepted until the Commission announces that a need for coordination no longer exists." See 47 C.F.R. § 15.307(c).

<sup>8</sup> Copies of drafts of the Certification Procedures and the Location Verification and Disablement Test Suite are attached as Appendices B and C.

Disablement Requirements. A request for proposal was distributed, and after careful evaluation of the responses. Communications Certification Laboratory (CCL) was chosen. CCL will afford strict confidentiality to competitively sensitive information.

UTAM and CCL recently completed a trial using unlicensed devices submitted by manufacturers. These tests have been completed, and after a review of the results this month, CCL will begin testing additional equipment. As these tests are conducted, UTAM will continue to review its procedures to ensure that they are sufficient to meet the needs of the unlicensed PCS industry.

### **C. Coordination of Early Deployment**

After receiving equipment authorization from UTAM and the FCC, the next step in the deployment process is coordination with UTAM so that harmful interference is not caused to microwave incumbents. UTAM has developed the processes necessary to begin deployment and expects to be ready to begin coordinating the deployment of unlicensed products as soon as manufacturers receive equipment authorization.

Because of the complex nature of the coordination process, UTAM is preparing a concise, step-by-step roadmap for manufacturers explaining what submissions to UTAM are necessary and how to obtain approvals required to begin deployment. The major elements of these procedures are highlighted below.

County Classification. As stated in the UTAM Plan,<sup>9</sup> UTAM commissioned from Comsearch a detailed coordination study (referred to as the "Phase II" study) using guidelines from TIA Bulletin 10F and subsequent releases. The Phase II study is a detailed engineering analysis of the microwave receivers in the United States and its territories operating within the 1895-1945 MHz frequency range. From these results, UTAM is able to calculate the aggregate power of unlicensed PCS devices that can be deployed in a county without causing interference to microwave incumbents.

In order to prevent interference to fixed microwave operations while allowing the deployment of coordinatable devices, a two zone coordination system was developed. Zone 1 counties, those distant from existing microwave operations, will be pre-coordinated and the maximum deployable power will be calculated based on TIA Bulletin 10F (and subsequent releases) standards. UTAM will aggregate the power of the unlicensed devices as they are installed and activated by the Location Verification Process (LVP)<sup>10</sup> to make sure that the maximum permitted power levels are not exceeded.

Zone 2 counties have microwave receivers nearby or in the county, and all deployment in those areas must be done with site-specific coordination. As explained above, UTAM has tentatively determined the classification for all counties in the

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<sup>9</sup> UTAM Plan at 31.

<sup>10</sup> See Appendix C.

United States. Those determinations will be confirmed when the PCN process is completed.

PCN Process. UTAM has developed prior coordination notice (PCN) procedures using Bulletin 10F (and subsequent releases) and NSMA guidelines. The PCN process for Zone 1 counties is completed, and to verify the procedures, a PCN was issued for Washington, D C., Montgomery County, MD, and Prince Georges County, MD, and Arlington County, VA. After validation, PCNs will be issued for all counties in the United States that are Zone 1 candidates, and then Zone 1 deployment can begin in these areas. The Zone 2 PCN process is almost completed and will be tested this quarter. The Prime Frequency Coordinator will be given the responsibility of conducting all Zone 1 PCNs. In addition, it will oversee the Zone 2 site-specific coordinations to ensure that proper procedures are used.

#### **D. UPCS and Microwave Database Development**

To complete its deployment and relocation activities, UTAM must organize large amounts of information relating to microwave relocation activities in the unlicensed band. To facilitate this process, UTAM commissioned the design of a database management system which would store both the relocation and the deployment data. After examining several proposals, UTAM chose Radio Dynamics to develop the database management system and has worked with them to establish the technical specifications which will meet all of UTAM's needs.

The database management system designed to organize the relocation information also will be used to store the information collected from all LVPs and Zone 2 PCNs. The system will generate reports indicating the level of deployment in all areas and new Zone 1 areas opened as a result of microwave relocations which will be made available to manufacturers on an expedited basis

In developing the specifications for the database management system, UTAM consulted with Comsearch to ensure that the relocation and deployment information generated by them will be compatible with the database format. The first delivery of the database management system occurred in June 1995, and its operation is planned to begin by the end of July 1995.

#### **E. Clearing Fee Collection**

Relocation activities will be financed through the collection of clearing fees on each coordinatable device deployed in the unlicensed PCS spectrum. In order to collect these fees, UTAM developed a collection mechanism to facilitate this process. Since the Plan was submitted, UTAM has spent considerable time studying the UTAM labelling mechanism proposed in the Plan and incorporated in the Subscriber Agreement.

Fee/Label Approach. In its Plan, UTAM proposed that clearing fees would be collected from manufacturers through the sale of UTAM labels. After studying all of the suggested alternatives, it was determined that the best method for collecting fees is

to require that each month, manufacturers send to UTAM clearing fees for all devices shipped by them during the previous month. Manufacturers are expected to develop internal control systems compatible with their production methods to ensure that at the beginning of each month, they are able to accurately compute the number of unlicensed PCS devices shipped for sale in the United States during the previous month, and then send the appropriate amount of clearing fees, \$20 per intentional radiator, and documentation specifying the number of devices shipped. To verify that manufacturers are complying with the clearing fee requirements, UTAM will reserve the right to conduct audits of manufacturers' unlicensed PCS records. This information will be kept confidential by UTAM.

### **III. RELOCATION ACTIVITIES**

Since UTAM's primary responsibility is to clear the unlicensed PCS spectrum, UTAM has invested significant resources in determining the best methods and procedures for relocating microwave links. The first step to beginning the relocation process was to identify all of the incumbents in the band, their locations, and the details of their systems which was done in UTAM's Phase II study. The next step is to determine in what order microwave links will be relocated.

Clearing Strategy. UTAM's clearing strategy was developed by combining several approaches. First, in order to generate the large amounts of revenue needed, UTAM determined that segment self-financing, by which the clearing revenues

generated by a band segment will be used to clear that segment, was necessary. This will allow UTAM to clear the markets in which there is the greatest demand for products fastest. This, in turn, will allow for increased sales, greater clearing revenues, and faster clearing of the entire band. At the present time, funds have been pledged by manufacturers to begin clearing both the asynchronous and isochronous bands. To further accelerate the generation of revenues, UTAM will clear the links within each band segment based upon the greatest gain in business population that would be added to the unlicensed PCS market in that band segment for every relocation dollar spent. In order to facilitate the band clearing process, UTAM will coordinate its relocation efforts with PCS licensees also involved in the relocation of 2 GHz fixed microwave incumbents.

Using the results of the coordination study, UTAM is calculating the approximate increase in the business population that would be available for each county cleared of microwave links. UTAM is in the process of ranking all of the links in the United States in the order in which they will be cleared. This list will continue to be refined as additional work is completed. UTAM expects to begin relocating an incumbent in the fourth quarter of 1995. After that, UTAM will continue to relocate links as it has sufficient funds to complete the relocation. No relocation will be started until UTAM has all of the funds necessary to complete it available.

#### **IV. ORGANIZATIONAL AND FINANCIAL STATUS**

##### **A. Membership and Staffing**

Active participation in UTAM by unlicensed device manufacturers has continued to grow since submission of the Plan. UTAM now has eleven voting members and numerous associate members. Voting members include: AT&T Corp.; Ericsson Inc.; Harris Digital Telephone Systems; Motorola, Inc.; NEC America; NorTel; Omnipoint Corporation; PCSI; Siemens Rolm Communications Inc., Sony Corporation of America; and SpectraLink Corporation.<sup>11</sup> With manufacturers and distributors of different sizes with a variety of product lines, UTAM represents a diverse cross section of the unlicensed device industry.

To fulfill its responsibilities, UTAM has hired a Managing Director and established office facilities with full-time staffing.<sup>12</sup> As deployment and relocation

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<sup>11</sup> A complete list of the UTAM Board of Trustees and members is attached as Appendix D

<sup>12</sup> Mr. Willard Nichols has been chosen as Executive Vice President and Managing Director of UTAM, Inc. Mr. Nichols has extensive communications and management experience. He previously held a number of positions at the FCC, including Chief of Staff, Office of the Chairman, and Chief of the Cable Television Bureau. Mr. Nichols also served as Vice President and General Counsel of Communications Satellite Corporation and has been in private practice for the past three years. In addition, Mr. Nichols has retained the consulting services of Ms. Deborah Aubrey Brimmer of Aubrey Brimmer Associates. It is anticipated that Ms. Brimmer will oversee UTAM's deployment and relocation database management system and generate pertinent system reports necessary for management and deployment. UTAM is headquartered in Washington, D.C.

begin, it is critical for UTAM to have its own employees to handle day-to-day operations and safeguard the confidential information that UTAM by necessity will be collecting as part of its frequency coordination activities.

To complete the work necessary prior to beginning full operations, UTAM has formed several working groups. These subcommittees have met each month and then reported their recommendations to the Board of Trustees. Subcommittee membership is open to any interested party and both members and nonmembers have participated. A list of these subcommittees and their responsibilities is included as Appendix E.

#### **B. Financial Status**

As explained in the Plan, UTAM will fund the relocation of the incumbent microwave users in the band through the clearing fees charged on coordinatable devices. Until sales of coordinatable devices begin, UTAM's operations are being funded by advance clearing fees from UTAM members planning to deploy in the band. UTAM's members have together pledged several million dollars to fund UTAM's administrative expenses until deployment begins with the remainder to be used for actual link relocation.

#### **V. OUTREACH ACTIVITIES**

UTAM continues to generate interest and participation in the unlicensed PCS market and transition in both the PCS industry and the microwave licensees located in

the unlicensed band. To encourage involvement in UTAM and distribute information on its activities, UTAM held an industry briefing on May 19, 1995, in Washington, D.C. for all parties interested in unlicensed PCS. Over forty people attended the presentation which detailed UTAM's activities and schedule for future subcommittee meetings. UTAM Board members also have made presentations on UTAM at other industry meetings. Through these efforts, UTAM has gained several new voting and associate members, while several other interested parties have participated on subcommittees but have not yet joined. This increased participation benefits UTAM and improves its service to the industry as a whole.

UTAM also has made significant efforts to provide information to and receive input from the microwave incumbent community. Several Board members have given presentations at microwave industry meetings. In addition, the Technical Subcommittee has continued to review many of its studies and plans with members of the microwave community to ensure that no difficulties will ensue when coordinatable deployment begins. To inform the incumbents on UTAM's activities generally, UTAM conducted an industry briefing on April 20, 1995, to receive input on the deployment and relocation processes being completed. Several incumbent representatives attended the presentation and made suggestions and comments for the Technical Subcommittee to consider

Since many aspects of unlicensed PCS are new and untested, UTAM has made efforts to review its procedures as well as share its own experience and expertise with

other industry groups concerned with unlicensed PCS. UTAM has a liaison on ANSI C63.7, the ANSI Subcommittee charged with developing testing procedures for ensuring compliance with the unlicensed device etiquette. In addition, UTAM maintains a liaison with NSMA and has reviewed its coordination procedures, some of which are newly developed by UTAM, with that organization.

## **VI. SCHEDULE**

UTAM members have been devoting one week each month to subcommittee and Board meetings. Since UTAM's members are located all over the United States and Canada, members take turns hosting the meetings. Typically, the subcommittee meetings are held at the beginning of the week with the Board meeting held on the last day. This allows the subcommittee chairmen to report their committees' recommendations to the Trustees.

The following chart identifies the major events UTAM anticipates during the remainder of this year:

July 10, 1995	Responses due to first PCN
July 11-13, 1995	Subcommittee meetings held in San Rafael, CA
July 14, 1995	Board of Trustees meeting in San Rafael, CA
Mid July 1995	CCL begins additional tests of unlicensed equipment
End of July 1995	Relocation and Deployment Database Management System will be operational

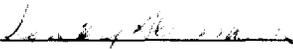
July 31, 1995	UTAM will begin accepting certification requests
July 31, 1995	UTAM will begin accepting executed Subscriber Agreements
August 1995	Begin issuing PCNs for remaining Zone 1 county candidates
August 22-24, 1995	Subcommittee meetings held in Ottawa, Canada
August 25, 1995	Board of Trustees meeting held in Ottawa, Canada
Fourth Quarter 1995	Begin negotiations for relocation of a microwave licensee
January 1996	Submission of UTAM Biannual Report to FCC

## VII. CONCLUSION

As detailed above, UTAM has accomplished most of the work outlined in its Plan and is preparing for the imminent deployment of coordinatable devices. To build on its progress, UTAM will continue to fulfill its responsibilities by assisting the PCS industry in the deployment of products and facilitating the relocation of microwave incumbents currently located in the unlicensed spectrum. UTAM is pleased at having received final approval of its Plan and is eager to begin making unlicensed PCS available to the public.

Respectfully submitted,

UTAM, INC.

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July 3, 1995

# **APPENDIX A**

## SUBSCRIBER AGREEMENT

THIS SUBSCRIBER AGREEMENT (this "Agreement") is made as of the date set forth on the signature page hereof between UTAM, Inc., a Delaware corporation ("UTAM"), and the subscriber set forth on the signature page hereof ("Subscriber").

### RECITALS

WHEREAS, UTAM is authorized by the Federal Communications Commission ("FCC") to manage the transition of the unlicensed PCS spectrum from use by microwave stations to use by unlicensed personal communications services ("UPCS") devices and systems;

WHEREAS, the FCC requires all those who intend to seek FCC equipment authorization for UPCS devices or systems to enter into an agreement with UTAM to assure equitable UPCS industry funding of such transition;

WHEREAS, all Subscribers must follow all FCC product disablement, installation and other rules for the deployment of UPCS devices and systems; and

WHEREAS, Subscriber intends to secure FCC equipment authorization for UPCS devices or systems.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, UTAM and Subscriber agree as follows:

Section 1. Definitions. As used herein, the following terms have the following meanings: (i) "UPCS Radiating Part" means an intentional radiator requiring a Part 15.311 FCC label, and subject to UTAM clearing fees, the operation of which makes use of any part of the unlicensed PCS spectrum; (ii) "Customer" means an end-user or other operator of a UPCS Radiating Part; and (iii) "Frequency Coordination Activities" are the process of insuring that any UPCS deployment shall not cause interference to licensed fixed microwave facilities.

Section 2. UPCS Device Information. Subscriber shall deliver to UTAM reports containing information requested by UTAM which is necessary for the performance of UTAM's frequency coordination responsibilities for the unlicensed PCS spectrum, including where required the number, output power level, where installed, bandwidth used, and band(s) of operation of all UPCS Radiating Parts shipped by Subscriber, together with any supporting documentation. The frequency requirements for the provision of such UPCS device information and the due date and time period covered by such requirements shall be as specified by UTAM from time to time. If Subscriber certifies to UTAM in writing that it has discontinued all manufacture, sale, distribution and activation of UPCS Radiating Parts, then Subscriber shall not be obligated to deliver UPCS device information for any period thereafter during which Subscriber does not manufacture, sell, distribute or activate a UPCS Radiating Part.

Section 3. UPCS Fees. In addition, Subscriber shall pay UTAM a fee in an amount determined by UTAM for each and every UPCS Radiating Part shipped by the Subscriber. The initial fee shall be \$20 per UPCS Radiating Part. UTAM will consult with the FCC prior to making any changes in the initial fee. All UPCS fees paid shall be final and non-refundable. A payment of \$20.00 must be delivered to UTAM by the 21st of each month for each UPCS Radiating Part shipped during the previous month.

Section 4. FCC Rules and UTAM Requirements. Subscriber shall comply with (i) all applicable FCC rules and regulations and (ii) all requirements established and instructions given from time to time by UTAM with respect to unlicensed PCS spectrum frequency coordination, location verification procedures, testing (including UPCS equipment testing and certification procedures), and related customer agreement requirements. Subscriber shall not directly or indirectly sell, distribute or activate a UPCS Radiating Part, except in compliance with such rules, regulations, requirements and instructions.

Section 5. Customer Agreement. Subscriber shall not sell, distribute or activate a UPCS Radiating Part unless the Customer has acknowledged and agreed in writing that the use and operation thereof is subject to all applicable FCC rules and regulations and UTAM requirements and instructions, including without limitation, rules with respect to interference and relocation. Each Customer Agreement shall include the following provision:

[Customer] hereby acknowledges that the use and operation of any intentional radiator requiring a Part 15.311 FCC label, and subject to UTAM clearing fees, the operation of which makes use of any part of the unlicensed PCS spectrum (a "UPCS Radiating Part"), is subject to FCC rules and regulations and UTAM requirements and instructions including without limitation rules, regulations, requirements and instructions with respect to interference to licensed fixed microwave facilities and to the relocation of any such UPCS Radiating Part. [Customer] agrees that [its] use or operation of any UPCS Radiating Part shall comply with all such rules, regulations, requirements and instructions.

Section 6. FCC Equipment Authorization. Following execution of this Agreement, Subscriber may, if it elects and is otherwise qualified, apply for FCC equipment authorization for its UPCS devices or systems. UTAM does not warrant FCC approval of any such application. An affirmative determination by UTAM that each coordinatable UPCS Radiating Part meets the FCC requirements in Part 15.307(d), (e) and (h) is a prerequisite for FCC equipment authorization. Subscriber is responsible for obtaining such UTAM approval (including the filing of all applications and execution of all liability waivers and other agreements required by UTAM) at Subscriber's cost and expense (including the payment by Subscriber of all fees and other costs and expenses of UTAM's Certification Laboratory) and UTAM does not warrant such approval.

Section 7. Coordination Activities. Following compliance with FCC certification and execution of this Agreement, the Subscriber may begin performing or contracting the execution of site

specific coordinations. As part of these Frequency Coordination Activities, the Subscriber is responsible for notifying UTAM's designated Prime Frequency Coordinator and complying with any procedural requirements as specified by UTAM at Subscriber's cost and expense.

Section 8. UTAM Voting Membership. Entities which execute this Agreement, and which participate in the mechanism devised to recover the costs of clearing the spectrum, relocating incumbent licensees, and achieving the Corporation's other purposes, will become eligible for voting membership in UTAM if it is otherwise eligible under, and complies with, the membership provisions of UTAM's Certificate of Incorporation and Bylaws. Upon becoming a voting member of UTAM, Subscriber will be entitled to the rights and privileges and be bound by the obligations of such members. Without limiting the foregoing, voting membership in UTAM is limited to those who seek or intend to seek FCC equipment authorization for UPCS devices or systems. Consequently, if a Subscriber who is a voting member of UTAM gives written notice that it will no longer be manufacturing or deploying UPCS devices, it will no longer be eligible for voting membership in UTAM.

Section 9. Audit. UTAM shall have the right to audit annually Subscriber's records relating to shipments of UPCS Radiating Parts. All audits will be conducted by a third party auditor, selected by UTAM, who shall provide to subscriber reasonable notice of the date and time that such audit will occur. For such audits, Subscriber shall make its books and records relating to such shipments available during normal business hours to enable UTAM to verify the number and type of UPCS Radiating Parts shipped by Subscriber. The cost of all annual audits shall be paid by Subscriber. Except as required by the FCC or as otherwise required by law or compulsory legal process or to enforce UTAM's rights hereunder, such books and records shall remain confidential and the information contained therein shall not be disclosed by UTAM to any other subscriber or to any third party. It is the understanding of the parties that under current FCC reporting requirements UTAM will be required to disclose only aggregate information with respect to UPCS Radiating Parts sold and UTAM revenues from subscribers. UTAM shall have the right to conduct an audit in addition to the annual audit provided for herein if, based on the number of UPCS Radiating Parts reported to UTAM through Subscriber's LVP process, the amount of UPCS fees owed to UTAM under this Agreement is discrepant with the amount that has been paid

Section 10. Investigations and Inquiries. Subscriber shall reasonably assist UTAM in the conduct of any investigation or inquiry concerning interference to fixed microwave operations or with regard to compliance with UTAM requirements. The costs of any such investigation or inquiry shall be paid for by Subscriber unless the investigation reveals no errors in Subscriber's compliance with UTAM's requirements.

Section 11. Term. The term of this Agreement shall commence on the date set forth on the signature page hereof and shall continue in effect until the date UTAM's FCC designation to manage the transition of the unlicensed PCS spectrum expires, provided however, should a successor to UTAM be designated by the FCC, UTAM will, upon written notice to Subscriber, assign and delegate its rights and obligations hereunder to such successor.

Section 12. Remedies. If Subscriber fails to comply with any covenant or agreement of Subscriber set forth in this Agreement or makes a material misrepresentation to UTAM or omits material information required by UTAM, then UTAM, after 30 day written notice to Subscriber of such failure, misrepresentation, or omission which is not corrected, may suspend or terminate Subscriber's right to sell, distribute, and activate any UPCS Radiating Parts. Upon any such suspension or termination, the provisions of this Agreement shall otherwise remain in full force and effect. Any such failure to comply or misrepresentation could result in the revocation by the FCC of any equipment authorization then held by Subscriber and other penalties under the Communications Act of 1934, as amended, and the rules, regulations and policies of the FCC. If Subscriber fails to comply with any covenant or agreement of Subscriber set forth in this Agreement, then, in addition to any other remedies available to UTAM at law or in equity, UTAM shall be entitled to immediate court ordered injunctive relief to prevent or restrain any such failure, it being understood and agreed that UTAM would suffer irreparable harm in the event of any such failure and that the remedy at law for such failure would be inadequate. If Subscriber does not comply with UTAM's fee requirements in a timely manner for one or more UPCS Radiating Parts, as required by Section 3, then Subscriber shall pay UTAM an amount equal to the fee Subscriber would have paid under Section 3 had it complied therewith plus interest on such amount from the date of noncompliance until paid in full at a rate per annum (the "Default Rate") equal to the highest prime rate published in The Wall Street Journal during the period of noncompliance plus 6%. Subscriber shall also pay UTAM on demand the costs of enforcing UTAM's rights under this Agreement, including reasonable attorneys' fees and costs, plus interest thereon from the date incurred by UTAM until paid in full by Subscriber at the Default Rate. The rights and remedies of UTAM under this Agreement are cumulative and shall be in addition to and not exclusive of any other right or remedy set forth herein or otherwise available to UTAM.

Section 13. Indemnification. Subscriber shall indemnify, defend and hold UTAM harmless from and against any and all loss, claim, damage, liability and expense (including reasonable attorneys' fees) arising from (i) Subscriber's negligence or willful misconduct in any act or omission of Subscriber, including without limitation the manufacture, sale, distribution or activation of UPCS devices or systems or the use thereof provided, however, that Subscriber shall not be obligated to indemnify UTAM for losses, claims, damages, liabilities and expenses resulting from compliance with UTAM requirements where such Subscriber negligence or willful misconduct is not present, or (ii) any failure by Subscriber to comply with any covenant or agreement of Subscriber set forth herein or any misrepresentation made by Subscriber to UTAM. The provisions of this section shall survive and remain in full force and effect following the expiration or termination of this Agreement.

Section 14. Arbitration. Any controversy or claim arising out of or relating to this Agreement or the breach hereof shall, upon the written request of either party, be settled by arbitration in Washington, D.C. in accordance with the Commercial Arbitration Rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction.

Section 15. Miscellaneous. Subscriber shall provide the Subscriber information identified in Appendix A. Notices hereunder shall be effective when delivered personally or by overnight courier or registered mail, return receipt requested, to a party at its address as set forth in Appendix A or to such other address as may be specified by a party by written notice to the other. All UPCS fees to be paid to UTAM pursuant to this Agreement shall be delivered to: UTAM, INC., Department 3465, Washington, DC 20042-3465. This Agreement constitutes the entire understanding and agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings and communications relating thereto. This Agreement and the rights and obligations hereunder may not be assigned or delegated by either party without the prior written consent of the other, except that UTAM may, upon written notice to Subscriber, assign and delegate its rights and obligations hereunder to any successor designated by the FCC to perform UTAM's functions. This Agreement shall inure to the benefit of and be binding upon the parties and their respective successors and permitted assigns. The invalidity of any provision of this Agreement shall not affect the validity of any other provisions. The failure by either party to insist upon the performance of any provision of this Agreement shall not be construed as a waiver of such performance or any future performance.

IN WITNESS WHEREOF, UTAM and Subscriber have executed this Agreement as of the date written below.

UTAM, INC.

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
UTAM, INC.  
1155 Connecticut Avenue, N.W., Suite 401  
Washington, D.C. 20036

NAME OF SUBSCRIBER: \_\_\_\_\_

STATE OF INCORPORATION: \_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_