M&A Technology, Inc.
Application for Experimental License
OET File No. 0811-EX-PL-2015

NARRATIVE STATEMENT

Pursuant to Sections 5.3(e) and (f), 5.51, 5.53, and 5.54(a)(1) of the Commission's rules, 47 C.F.R. §§ 5.5(e) and (f), 5.51, 5.53, and 5.54(a)(1), M&A Technology, Inc. ("M&A") respectfully requests experimental authority to operate in the 3550-3700 MHz band in conjunction with the Pasadena, Texas Independent School District ("ISD") for the purpose of demonstrating and testing key functionalities of using existing equipment to deliver high speed Internet connectivity (minimum 6 Mbps download/1.5 Mbps upload) to certain of ISD's student population that is currently unserved or underserved by commercially available broadband service. It has been estimated that approximately 40 percent of ISD's student population of more than 50,000 students have no home access to the ISD's network. M&A seeks to conduct the proposed testing at five sites.

A. Purpose of Operation and Need for Experimental License

The proposed testing and demonstration seeks to prove that satisfactory speed and connectivity together with mandated filtering and school network authentication integration can be delivered and managed by the ISD. The testing is designed to prove that the ISD's network services can be successfully delivered to provide extended reach to its underserved student population, in particular, during after-school hours. Testing will prove that the ISD's approved curriculum can be extended to the large numbers of its student population not presently able to continue to connect to the ISD school network and benefit outside of normal school hours. M&A seeks to verify coverage areas and possible interference patterns, and to demonstrate equipment reliability.

The proposed test will identify the target area (within each of the five proposed test sites) to provide maximum coverage for selected students living in the representative areas of the city of Pasadena, Texas. The selected target areas are projected to have the highest number of students in the target demographic. Each selected student will be supplied with an off-the-shelf approved CPE (customer premises equipment) by the ISD. The CPE is used to convert the LTE signal sent from the antenna (after authentication) to a local Wi-Fi signal that the student can then attach in a normal manner, much like is done with broadband delivered by the carriers. If successful, the student will have access to ISD's network and be able to have an experience that is similar to being connected to the Wi-Fi network during typical school hours.

Testing will enable applicant to verify the coverage area for each site, map the coverage area, and measure the minimum and maximum deliverable data rates. Testing will enable applicant to prove 6 Mbps/1.5 Mbps speeds and to determine the saturation level of the radio under load. Testing will allow applicant to determine the number of users able to receive a specified level of service and under what conditions service begins to degrade.

Applicants propose to use a phased approach to testing. During the first phase, applicants will implement procedures to establish connections to the ISD's network and test basic connectivity, map the radius for connectivity, verify real world delivery rates at local, midpoint, and edge of the radius. Second, each remote radio unit ("RRU") will be loaded with traffic and actual delivered speeds will be measured at the selected student locations that are projected to be representative of the area covered. The RRU is predicted to deliver satisfactory rates at a radius of 2 km from the antenna. However, verification must be verified in the particular terrain. Once the parameters are established and verified, suitable delivery of school curriculum must be proved at the described rate and usage patterns of the testers needs to be established. The test is expected to enable the applicant to measure factors including average connection time, total data usage uploaded and delivered, connection patterns that occur after normal school hours, and weekend usage. Applicants continue to work with the school district on testing parameters to be measured.

B. Request for Expedited Processing

Applicant proposes to start testing on or before March 15, 2016, but not before approval has been granted, and respectfully requests expedited processing to achieve this start date. Applicant needs sufficient time to properly install equipment at the proposed sites, finalize test procedures, and provide training and equipment to the targeted test users that will be attending school during the 2016 Summer School session and during 2016 Fall Semester Session.

C. Locations and Antenna Specifications of Proposed Operations

Location No. 1:
Pasadena High School
206 Shaver St, Pasadena, TX 77506
Lat. Long.: North 29.70951553, West -95.21465153
Ground Elevation: 8 meters AMSL
Building/Antenna Structure Height: 27 meters AGL (pole type)
Antenna Height to Tip: 27 meters AGL
Center of Radiation: 90, 180, 270 degree Azimuth
Distance to nearest aircraft landing area: 10 km from Ellington Field Airport

Location No. 2:
Sparks Elementary School
2503 Southmore Ave, Pasadena, TX 77502
Lat. Long.: North 29.6933839, West -95.17863616
Ground Elevation: 8 meters AMSL
Building/Antenna Structure Height: 27 meters AGL (pole type)
Antenna Height to Tip: 27 meters AGL
Center of Radiation: 0, 120, 240 degree Azimuth
Distance to nearest aircraft landing area: 8 km from Ellington Field Airport

Location No. 3:
Southmore Intermediate School
2000 Patricia Ln, Pasadena, TX 77502
Lat. Long.: North 29.68261815, West -95.19128144
Ground Elevation: 8 meters AMSL
Building/Antenna Structure Height: 27 meters AGL (pole type)
Antenna Height to Tip: 27 meters AGL
Center of Radiation: 100, 180, 310 degree Azimuth
Distance to nearest aircraft landing area: 7 km from Ellington Field Airport

Location No. 4:
Queens Intermediate School
1452 Queens St, Houston, TX 77017
Lat. Long.: North 29.6786013, West -95.22800088
Ground Elevation: 8 meters AMSL
Building/Antenna Structure Height: 27 meters AGL (pole type)
Antenna Height to Tip: 27 meters AGL
Center of Radiation: 90, 180, 290 degree Azimuth
Distance to nearest aircraft landing area: 6 km from Hobby Houston Airport

Location No. 5:
San Jacinto Intermediate School
3600 Red Bluff, Pasadena, TX 77503
Lat. Long.: North 29.68503041, West -95.15912242
Ground Elevation: 8 meters AMSL
Building/Antenna Structure Height: 27 meters AGL (pole type)
Antenna Height to Tip: 27 meters AGL
Center of Radiation: 90, 180, 315 degree Azimuth
Distance to nearest aircraft landing area: 6 km from Ellington Field Airport

D. Technical Specifications:

1. Frequencies Desired

M&A requests an experimental license to operate in the 3550-3700 MHz band.

2. Effective Radiated Power

All power levels will comply with the limits set forth in the FCC's rules, including those relating to human exposure to radiation.

Output Power/ERP: 0.25W

Mean Peak: 1 W
Frequency tolerance: 4.86 Hz.

M&A will evaluate environmental considerations to ensure compliance with Section 1.1307 of the Commission's rules, 47 C.F.R. § 1.1307.

3. Modulation and Emissions

Modulating signal: TDD
Emission Designator: 17M8D9W

4. Equipment to Be Used

Antenna
Equipment Type: Metro Cell
Manufacturer: CommScope
Antenna Brand: Argus
Transmitter Model No.: SSPX310R
No of Units: 15 (3 at each location)

LTE Remote Radio Unit
Equipment Type: LTE Remote Radio Unit
Manufacturer: ZTE Corporation
Antenna Brand: ZTE Corporation
Model No.: ZXSDR R9894E 3600
No of Units: 15 (3 at each location)

E. Restrictions on Operation

Applicant M&A does not propose to market, sell, or lease equipment to end users. No fees will be charged to persons or entities evaluating the equipment during the test. After the experimentation ends, it will recall and recover all unauthorized devices.

Applicant M&A also understands that the proposed experimental operation must not cause harmful interference to authorized facilities. M&A does not anticipate any interference issues. However, if interference occurs, it will immediately take steps to resolve the interference, including discontinuing operation, if necessary. M&A will inform persons and entities using the equipment that permission to operate the equipment has been granted under experimental authority issued to M&A, is strictly temporary, and may be cancelled at any time, and that any unauthorized equipment may not be offered for sale or lease, or sold or leased, until authorization is obtained. M&A proposes to label the ZTE RRU equipment or user information conspicuously with information as follows:

FCC STATEMENT

Permission to operate this device has been granted under experimental authority issued by the Federal Communications Commission to M&A Technology, Inc., and is strictly temporary and may be cancelled at any time.

This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be offered for sale or lease, or sold or leased, until authorization is obtained. Thus, the user does not hold a property right in the device and may be required to return the device.

F. Public Interest Statement

M&A submits that issuance of the requested Experimental License is in the public interest, convenience, and necessity. Grant of the Experimental License will permit applicant to prove that satisfactory speed and connectivity together with mandated filtering and school network authentication integration can be delivered and managed by the ISD. The testing is designed to prove that the ISD's network services can be successfully delivered to provide extended reach to its underserved student population, in particular, during after-school hours. Testing will prove that the ISD's approved curriculum can be extended to the large numbers of its student population not presently able to continue to connect to the ISD school network and thus benefit outside of normal school hours. Grant of this request will enable M&A to verify coverage areas and possible interference patterns, and to demonstrate equipment reliability.

G. Contact Information:

For questions about this application, please contact:

Randall Sifers
Harris, Wiltshire & Grannis LLP
1919 M Street, NW, Eighth Floor
Washington, DC 20036
Telephone: (202) 730-1307
Mobile: (202) 361-6367
Email: rsifers@hwglaw.com

In the unlikely event interference concerns should arise during the period of authorization for this license, please contact:

Val Overbey
Executive VP/CTO
M&A Technology, Inc.
2045 Chenault Drive
Carrollton, Texas 75006
Telephone: (972-490-5803
Mobile: (972) 824-2895
Fax: (972) 490-0616

Email: voverbey@macomp.com