

NARRATIVE STATEMENT

Pursuant to Section 5.3(d) and (i) and Section 5.61 of the Federal Communications Commission (“FCC” or “Commission”) rules, 47 C.F.R. §§ 5.3(d), (i), 5.61 (2009), the Alameda County Sheriff on behalf of the San Francisco Bay Area Urban Area Region (hereinafter the “Bay Area”) hereby respectfully requests an experimental license to operate in the 763-768/793-798 MHz band from **August 15, 2010 to May 15, 2011**, for the purpose of developing and evaluating the functionality and acceptability of broadband Long-Term Evolution (“LTE”) equipment during a pilot (hereinafter the “BayWEB pilot”) to be conducted at a limited number of sites, identified, below located in the San Francisco/Oakland metropolitan area.

A. Purpose of Operation

In an *Order* released on May 12, 2010, the FCC granted a conditional waiver to Bay Area for early deployment of a 700 MHz LTE Public Safety wireless broadband communication network.¹ The Bay Area is moving forward expeditiously to address provisions in the *Order* relating to public safety interoperability. In addition, the Alameda County Sheriff, as the Regional Mutual Aid Coordinator, and on behalf of the San Francisco Bay Area Urban Area Region, is moving forward aggressively to execute a spectrum lease with the Public Safety Spectrum Trust (“PSST”), which holds the nationwide license for the 763-768/793-798 MHz spectrum.

The Bay Area BayWEB pilot will evaluate LTE performance with real-world public safety applications and users, thereby providing invaluable engineering and operational data to the public safety community, the FCC, the Emergency Response and Interoperability Center (“ERIC”), and the Department of Commerce Public Safety Communications Research (“PSCR”) Project.

The Bay Area is relatively unique among the waiver grantees in that funding to conduct the proposed pilot has been allocated through the Urban Area Security Initiative (“UASI”). This funding will be jeopardized, however, if not expended prior to the end of the 2009 UASI Grant performance period. In addition to helping take advantage of the UASI funding, the experimental license will enable the Bay Area to conduct tests that will provide valuable insight for the Commission and all waiver grantees about the functionality and acceptability of LTE technology. This insight may also help expedite full deployment of regional interoperable broadband systems in a manner that meets public safety requirements once Commission approvals to do so are finalized.

Although LTE is a new technology to be deployed in the public safety community, public safety entities have conducted only minimal testing to date of broadband operations in the 700 MHz band using this platform. It is essential that new technologies provide reliable service in

¹ *Requests of Various Petitioners To Allow the Establishment of 700 MHz Interoperable Public Safety Wireless Broadband Networks*, PS Docket 06-229, *Order*, 25 FCC Rcd. 5145 (2010)(hereinafter “Order”)

real-world public safety environments. The proposed pilot will serve the public interest by permitting the evaluation of a number of technical and operational parameters critical to reliable public safety broadband communications. More specifically, grant of the experimental license will allow the Bay Area to test the following parameters:

- Seamless multi-jurisdictional communications
- Handoff across multiple broadband sites
- Public Safety Managed Regional Core Network Architecture
- Priority access and Quality of Service (“QoS”)
- Coverage, capacity and throughput
- System traffic, bandwidth, reliability and availability
- Average downlink/uplink speeds as well as speeds at the cell edge
- Security
- Utilization of Public Safety applications:
 - Automated Report Writing
 - Remote booking with the Jail Management Systems
 - Existing Public Safety Information Sharing Applications:
 - ARIES
 - CALGang
 - CALPhoto
 - Mugshots
 - Mobile ID and Biometrics (fingerprint and Iris scan)
 - Email
 - Mapping
 - CAD/RMS
 - Automatic Vehicle Location (“AVL”)
 - General Internet Access and VPN
 - Middleware – FIPS140-2 security and IP optimization

B. Locations of Proposed Operation

The Bay Area proposes to conduct the test with ten transceiver sites, each deploying fixed LTE eNodeB transmitters. Each site will consist of a radio controller, three base station radios and three dual polarity sectorized antennas mounted at the sites. Deployment of the pilot test system will not increase the height of any antenna structure. Pilot test antennas will be deployed at existing public safety-hardened transceiver sites. The eNodeB LTE sites will use existing, city/county owned microwave, fiber, or other backhaul to aggregate data to the existing regional BayLOOP microwave system that connects to the Evolved Packet Core located at the Alameda County Emergency Operation Center, a hardened facility.

The ten sites are listed below. Site coordinates and antenna height information are provided on the accompanying FCC Form 442.

In Alameda County/City of Oakland (1 site):

- Glenn Dyer Detention Facility – 550 6th Street, Oakland

In the City and County of San Francisco, Downtown and the Financial District (4 sites):

- 1 South Van Ness
- Twin Peaks – 1 Christmas Tree Point Road
- South Hill – 57 Alta Vista Way
- Bernal Heights – 1100 Bernal Heights Blvd

In Contra Costa County (3 sites):

- Cummings Peak
- 651 Pine Street, Martinez
- 40 Glacier Dr., Martinez

In City of Santa Clara/Sunnyvale (2 sites):

- 1900 Walsh Ave., Santa Clara
- City of Sunnyvale Corporation Yard – 221 Commercial Street, Sunnyvale

The Evolved Packet Core which manages the pilot system resources will be located at the Alameda County Emergency Operations Center at 4985 Broder Road, Dublin, California. No transmitters operating under the requested experimental license will operate from that location.

C. Technical Specifications

1. Frequencies Desired

The Bay Area requests authorization to operate in the band 763-768/793-798 MHz. This band encompasses the public safety block licensed on a nationwide basis to the Public Safety Spectrum Trust (“PSST”). The Bay Area has also requested a letter of concurrence from the PSST to conduct the pilot.

2. Effective Radiated Power

All power levels will comply with the limits set forth in the FCC’s rules and regulations. The ENodeB base stations will be configured to operate at a peak power level of 59.4 Watts effective radiated power (“ERP”). The LTE USB dongles (*i.e.*, mobile units) to be deployed are configured to operate at an average power level of 200 mW ERP.

In addition, the Bay Area will evaluate environmental considerations to ensure compliance with Section 1.1306 of the FCC’s rules, 47 C.F.R. § 1.1306 (2009), and, in particular, the human exposure requirements set forth in FCC OET Bulletin No. 65.

3. Modulation and Emissions

The Bay Area proposes to operate using OFDM modulation techniques. The primary emission designators are 5M0G7D, 5M0W7W, 5M0G2D, and 5M0D7D. Other emission modes may be utilized, but in no event will the emissions extend beyond the frequency bands requested.

4. Antenna Information

The fixed base station transmitter antennas will be located at the ten sites identified above with coordinates specified in the accompanying FCC Form 442. The dongles will be mounted in vehicles and will operate within a 32 kilometer radius of the base stations. The mobile units will be installed not more than 6 meters above ground. No antennas will be mounted in a fashion requiring separate approval under FAA and FCC rules and regulations.

5. Equipment To Be Used

The BayWEB pilot system will utilize an LTE Evolved Packet Core for management of system resources. The eNodeB fixed transmitters are provided by Motorola, Inc. and received FCC Certification under FCC ID No. IHET4KJ1 on April 29, 2010.

No more than 300 low power LTE USB dongles will be deployed to provide mobile in-car coverage. The dongles conform to 3GPP Band Class 14, but will only transmit in the 763-768/793-798 MHz portion of the Band 14 spectrum. For the purposes of testing, prototype low power LTE USB dongles are being provided to the Bay Area by Motorola in limited quantities at no cost and in accordance with Section 2.803 of the FCC's rules, 47 C.F.R. § 2.803(2009).

D. Protection Against Causing Interference

The Bay Area, with the assistance of Motorola, has searched the Commission's TV database of all co-channel or adjacent channel Low Power TV ("LPTV") stations licensed in the area. The closest co-channel licensed LPTV station is K68AL, licensed to Lake County, on channel 68 in Lakeport, California, approximately 86 miles from the San Francisco/Oakland metropolitan area center.² Two other co-channel stations, K63CE on channel 63 and K67CC on channel 67, are both licensed to Anderson Valley Television, Inc., in Booneville, California, and are located approximately 95 miles away.

The closest adjacent channel licensed LPTV station is K69CU on channel 69, also licensed to Anderson Valley Television, Inc., in Booneville, California, located approximately 95 miles away. Adjacent channel station K69DF licensed to Television Improvement Association in Ukiah, California, on channel 69 is approximately 100 miles away. Adjacent

² This analysis was conducted using the following center coordinates for the San Francisco/Oakland metropolitan area: 37-46-38.7 North; 122-24-43.9 West (NAD83).

channel station K69DI, licensed to Potter Valley Television Association, Inc., on channel 69 is approximately 106 miles away.

Motorola also conducted a search of the Commission's Universal Licensing System ("ULS") database, and it found no active public safety licenses authorizing operation in the San Francisco area on frequencies which are co-channel to those proposed in this experimental license request. All 700 MHz narrowband incumbents and applicants are subject to the revised 700 MHz band plan and, therefore, their operations would be in the 769-775/799-805 MHz band, which is outside the spectrum requested in this experimental license application. The State of California is not listed as a licensee operating under the previous band plan in which narrowband operations would have overlapped the current broadband spectrum block under the revised band plan. Therefore, any operations under the State's area-wide license must conform to the revised 700 MHz band plan, which will not overlap the spectrum proposed here for the Bay Area pilot.

E. Restrictions on Operation

The Bay Area recognizes that the operation of any equipment under experimental authority must not cause harmful interference to authorized facilities. Should interference occur, the Bay Area will take immediate steps to resolve the interference, including if necessary arranging for the discontinuance of operation.

F. Public Interest

The Bay Area submits that grant of the experimental license as requested herein would be in the public interest, convenience, and necessity. Operation under the experimental license will permit the Bay Area to evaluate innovative broadband public safety equipment and operations so that it may obtain valuable insight into accommodating the communications needs of the public safety and homeland security community.

Grant of the requested experimental license under the timeframe proposed would also permit significant operational testing to begin prior to yet another anniversary of the horrific attacks that occurred September 11, 2001. The implementation of public safety broadband communications has been envisioned for approximately the last 5 years and the proposed test would be a major milestone toward that goal.

G. Contact Information

For questions about this application, please contact:

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