Special Temporary Authorization
File No.: 0788-EX-ST-2011

Exhibit 1: Spectrum Requirements, Antenna Pointing Information, and Stop Buzzer Contacts

L-3 Communications
Communications Systems – West
Salt Lake City, Utah
December 22, 2011

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Applicant Background:

L-3 Communication Systems-West is an industry leader in developing communications systems for high-performance intelligence collection and dissemination, imagery processing, and satellite communications for Department of Defense (DoD) and other government agencies.

Spectrum Requirements and Test Scheduling

The maximum necessary bandwidth of any of the waveforms planned for transmission is 28.7 MHz. However, the radio manufacturer (Cambium Networks) states that the "30 MHz transmission" (i.e., 28M7D1D) operates in a 40 MHz channel within the government's 4400-4940 MHz band plan. Given the manufacturer's specifications for the PTP45600, the valid center frequencies of these channels are 4420 MHz, 4460 MHz, 4500 MHz, 4540 MHz, and 4580 MHz. Any one of those center frequencies and associated 28.7 MHz bandwidth is sufficient for the planned tests. We can use whichever of these is least likely to cause interference to other users. We assume that operation will be on a non-interference basis. Test schedules will be coordinated with other identified users prior to any radiation.

Location of Testing and Antenna Pointing

All testing covered by this STA will be performed in the vicinity of Tucson, Arizona, within Pima County. The locations of the antennas are shown in a Google Earth map in Figure 1, and listed along with angles and ranges in Table I. While the application shows 4 antennas, only two will operate at any one time. The pairings are antenna 1 operating in a time-division duplex link with antenna 3, and antenna 2 operating in a time-division duplex link with antenna 4. The antenna azimuth orientations provided in the STA application reflect these pairings. Elevation angles are all essentially 0 degrees, and will not be varied.

Table I. Antenna locations and pointing angles

	Latitude	Longitude	Site Elev. (m)	Range to Ant. 1/2 (km)	Azimuth to Ant. 1/2 (deg)	Azimuth from Ant 1/2 (deg)	Elevation Angle from Ant. 1/2 (deg)
Antennas 1 & 2	32° 10' 11" N	110° 54' 11" W	794.0	-	-	-	-
Antenna 3	32° 25' 26" N	111° 10' 44" W	619.1	38.3	137.4	317.4	-0.4
Antenna 4	32° 04' 56" N	110° 53' 20" W	835.2	9.78	352.2	172.2	0.2

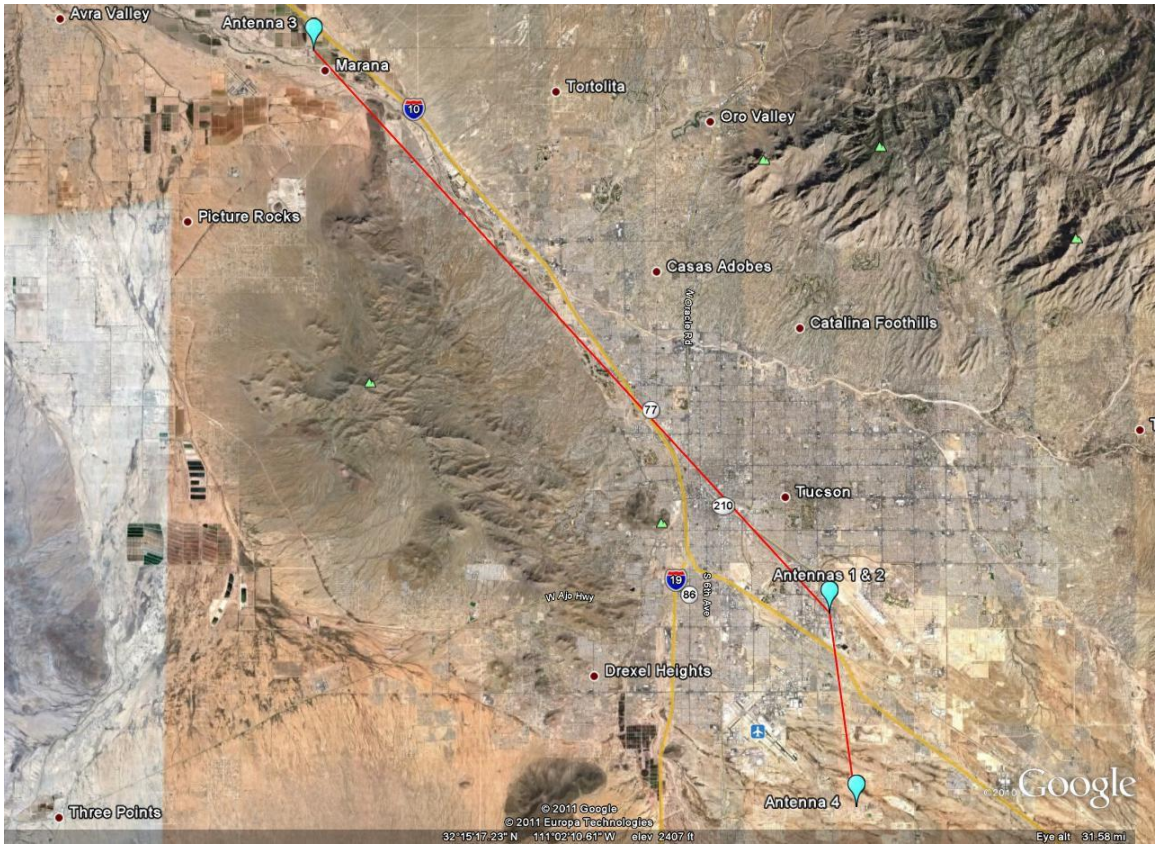

Figure 1. Antenna Locations.

Stop Buzzer Contacts:

In the event of interference caused by the experiment, the following individuals will be responsible for ensuring that transmissions cease as soon as possible after notification:

Primary: Bing Shen (801)706-0270 (cell)
Backup: Rick Kunz (801)628-3602 (cell)