CUBIC BALBOA CAMPUS LTE DEMO

SCOPE

This document captures the LTE network specific elements of the Cubic Balboa Campus Demo for development and demonstration.

DEMO OBJECTIVE

Develop Cubic's LTE capability and integrate into Cubic's products and systems. Demonstrate LTE capability for internal and external customers.

TECHNICAL REQUIRMENTS

Shall = objective

Should = target

Requirement	Description:	Comments:
CD1	The demonstration shall comprise 4 x '4G network in the box' using BlackWolf and Attocore or Quortus embedded EPC	Attocore is work in progress. Quortus does crash. Blackwolf still in development, B28 variant does not yet exist
CD2	Each 4G 'network in the box' shall be linked to each other using either Cambium point to point units or ubiquity point to point WiFi units.	
CD3	The deployment shall support inter network handover.	Complete.
CD4	The 4G network shall radiate in the spectrum band designated as B28.	FFC application submitted
CD5	Each 4G network shall radiate on a specific and unique EARFCN.	FFC application submitted.
CD6	2 of the '4G network in the box' shall be mounted to a tethered drone at a height of no more than 100m and using omni-directional antennas	Integration in progress.
CD7	2 of the '4G network in the box' shall be mounted to a mast at a height of no more than TBDm	Mast height and type information is not yet available
CD8	For the 2 mast mounted '4G network in the box' systems, the antenna shall be: LNX-8513DS-VTM	Ordered
CD9	The antenna feeder cables shall be: https://www.fairviewmicrowave.com/n-male-7-16-female-cable-0.250-formable-low-pim-coax-fmc0136925-100cm-p.aspx	Ordered

DEMO PLANNING

The drone/mast shall be located at location: 34 49’ 17” N, 117 7’ 43” W (Cubic’s Balboa Campus) with operational range within the boundaries of Cubic’s property (~0.25km radius).

Antenna is omni directional.

The BWB281W antenna will be deployed at a height of 7.32m in the areas designated in Figure 1 in blue. These areas will be used for testing and demonstration. Buildings and trees in the area that will shield the antenna from aircraft are designated in Figure 1.

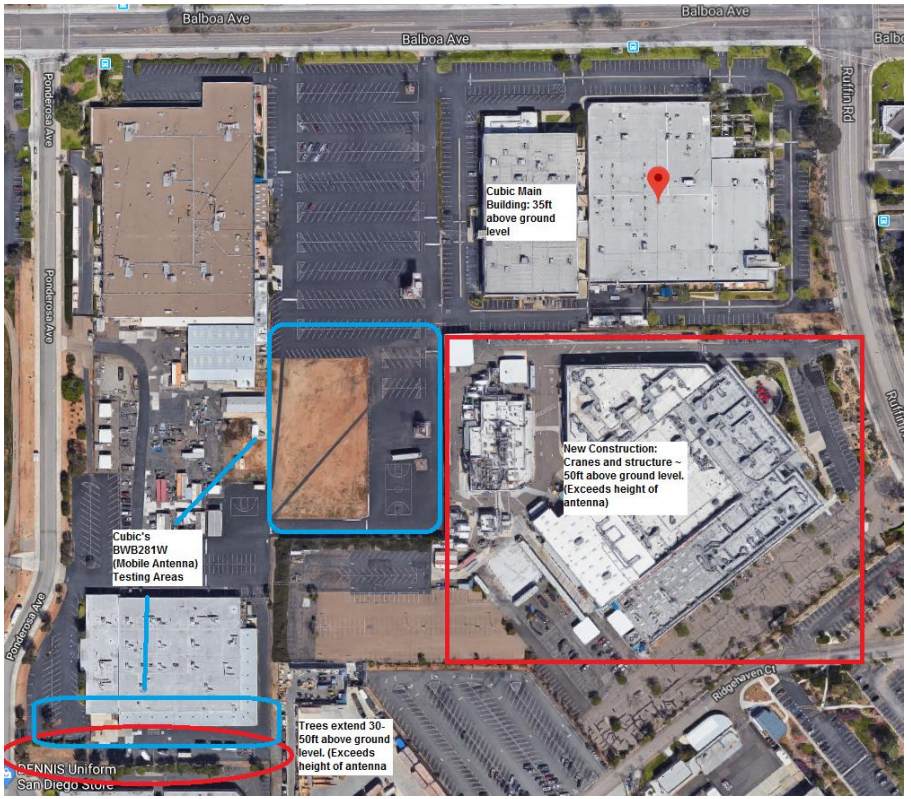

Figure 1: Demo Areas (Blue) and Shielding from Aircraft

LTE EQUIPEMNT

DE1	2 of B28 BlackWolf with integrated EPC plus 2 spare (mast mount)	B28 BlackWolf needs to be built	TBC
DE2	2 of B28 BlackWolf with integrated EPC plus 2 spare (drone mount)	B28 BlackWolf needs to be built – lightweight enclosure for drone	
DE3	4 of LNX-8513DS-VTM plus 2 spare	Antenna order (for 6 antennas) to be placed by 9/Feb/18	TBC
DE4	Drone antenna set	Antenna order (for 4 antenna sets) to be placed by 9/Feb/18	
DE5	https://www.fairviewmicrowave.com/n-male-7-16-female-cable-0.250-formable-low-pim-coax-fmc0136925-100cm-p.aspx	Order to be placed by 9/Feb/18	TBC
DE6	BlackWolf GPS antenna	Order to be placed by 9/Feb/18	

ROLES AND RESPONSIBILITIES

- Network Setup: Cubic
- Network Operation: Cubic
- Equipment: Cubic