Cubic intends to test its Halo multi-beam beam-forming CDL Ku Band payload in both an Air and Ground configuration. Each Halo payload is capable of generating 5 full duplex Ku CDL links. In order to fully test the system capability Cubic requires 8 additional legacy Ku Band CDL datalinks which will be comprised of production MMT and Mantis datalink solutions from Cubic's portfolio, both of these datalink types have achieved Stage 4 status under previous DD-1494s and are deployed with various Government customers. The demonstration system will include one Halo ground system located at Ellington Field connected to the Halo airborne system located on the NASA WB-57 via the Ku Band BE-CDL waveform. Additionally, both the Halo ground and airborne systems will simultaneously be connected to 4 legacy CDL datalinks each also utilizing the Ku Band BE-CDL waveform.

The Antennas used in this test have been assigned names, they are as follows:

Halo:The WB-57 will climb out of Ellington field heading 180 to a minimum altitude of 45,000 ft MSL. WB-57 may request to climb to 50k ft MSL based on ATC requirements. It will then enter a 170nm race track orbit following the coast. The beginning will be over Trinity Bay and extend on the 045 heading for 60 miles. The leg will terminate near Beaumont, Tx. The WB-57 will turn left or right 180 degrees and fly SW for 170 miles, heading 225. This leg will terminate near Blessing, Tx where the WB-57 will again turn 180 degrees to the left or right and fly the NE leg heading 045 and so on. The WB 7 will carry the Halo. It is a Multi-beam, 2-D beam forming array. Capable of establishing 5 simultaneous full duplex Ku Band CDL links.

Echo: MMT with Horn Antenna: 20dB horn antenna with fixed field of view combined with Cubic MMT modem. Capable of establishing 1 full duplex Ku Band CDL link. This MMT will be located on Ellington Field 29◦36’35.02”N, 95◦10’11.64”W. This will demonstrate a data connection to the Halo.

Foxtrot A: Mantis: 48" parabolic dish antenna with Cubic MMT modem. Capable of establishing 1 full duplex Ku Band CDL link will be located on Ellington Field 29◦36’31.19”N, 95◦10’7.97”W. This will demonstrate a data connection to the Halo.

Foxtrot B: MMT with Horn Antenna: 20dB horn antenna with fixed field of view combined with Cubic MMT modem. Capable of establishing 1 full duplex Ku Band CDL link. This MMT will be located on Ellington Field 29◦36’34.08”N, 95◦10’7.51”W. This will demonstrate a data connection to the Halo.

Golf: MMT with Horn Antenna: 20dB horn antenna with fixed field of view combined with Cubic MMT modem. Capable of establishing 1 full duplex Ku Band CDL link. This MMT will be located on Ellington Field 29◦36’34.08”N, 95◦10’7.55”W. This will demonstrate a data connection to the Halo.

Hotel: Halo Ground node Multi-beam, 2-D beam forming array. Capable of establishing 5 simultaneous full duplex Ku Band CDL links.

India: MMT with Horn Antenna: 20dB horn antenna with fixed field of view combined with Cubic MMT modem. Capable of establishing 1 full duplex Ku Band CDL link. This MMT will be located on Ellington Field 29◦36’34.03”N, 95◦10’11.62”W. This will demonstrate a data connection to the Halo.

Charlie: MMT with AC-27 Antenna: 27dB tracking antenna with Cubic MMT modem. Capable of establishing 1 full duplex Ku Band CDL link. This MMT will be located in La Ward, TX 28◦50’39.71”N, 96◦27’50.99”W. This will demonstrate a data connection to the Halo.

Delta: MMT with Horn Antenna: 20dB horn antenna with fixed field of view combined with Cubic MMT modem. Capable of establishing 1 full duplex Ku Band CDL link. This MMT will be located Vinton, LA 30◦11’26.99”N, 93◦34’52.56”W. This will demonstrate a data connection to the Halo.

Juliette: Cessna Citation or UAS will climb out of Ellington or chase filed. field heading 180 to a minimum altitude of 6,000 ft MSL. Aircraft may request to climb to 25k ft MSL based on ATC/test requirements. It will then enter a 30nm race track orbit following the coast. The beginning will be just north of the larger WB-57 orbit over Trinity Bay and extend on the 045 heading for 15 miles. The leg will terminate near Bay Town, Tx. The Aircraft will turn left or right 180 degrees and fly SW for 30 miles, heading 225. This leg will terminate near Manville, Tx where the Aircraft will again turn 180 degrees to the left or right and fly the NE leg heading 045 and so on. The Aircraft will be mounted with a MMT with Omni Antenna: 4dB Ku band Omni antenna with Cubic MMT modem. Capable of establishing 1 full duplex Ku Band CDL link.