Narrative Statement

a) Program of Research and experimentation proposed:

Trango has developed a very high-speed full duplex microwave system consisting of an indoor unit, cabling, an ODU and a dish antenna that is designed to send Ethernet data and T1/E1 traffic at up to 305 Mbits/second. The indoor unit combines gigabit Ethernet data, T1/E1 traffic, and management traffic together on the transmitting side before transmitting it to the outdoor unit and extracts this data accordingly on the receive side. The equipment being tested utilizes very high modulation efficiency (256QAM) and is therefore more sensitive to path impairments that lower modulation level equipment may not experience. Lab testing has been completed but there are still parameters that need to be adjusted to make the final design robust. We propose to test these parameters on the experimental link.

b) Specific Objectives:

The experimental link is needed to complete the following objectives: 1) Automatic transmit power control optimization 2) Failover latency optimization (protected configuration) 3) IP throughput optimization 4) T1/E1 latency and jitter optimization 5)Equalizer optimization 6) Ethernet frame latency and jitter optimization 7) Receiver AGC optimization

c) Contribution to radio art

This testing will enable Trango to make improvements to the equipment it is developing to make the link more robust in the real world environment. In addition, failover performance for Ethernet packet radios in a real world environment has not been investigated thoroughly in the industry and can be optimized with this experimental link"