Rockwell Collins, Inc.
Application for Experimental License
File No. 0580-EX-PL-2012

Exhibit 1: Description of Research and Experimentation

Rockwell Collins, Inc. respectfully requests the issuance of an experimental license using the equipment and operating parameters set forth in File No. 0580-EX-PL-2012.

Rockwell Collins, using independent research and development ("IR&D") funding, has ported the US DoD Soldier Radio Waveform ("SRW") into the ARC-210 airborne military radio. The SRW is a wideband networking waveform developed by the DoD for use in multiple fixed, ground, and airborne radio platforms that conform to software defined radio architectures. The waveform utilizes a 1.2 MHz channel to pass TDMA voice and data between multiple radios within the network. The waveform is used for line of sight communications between nodes.

As part of the waveform porting, field testing of the waveform in the ARC-210 is desired to verify correct operation and performance of the waveform. Testing of the waveform will verify performance of the waveform in the radio in the real world electromagnetic environment. Testing will consist of a fixed network node and up to three mobile radio nodes. The mobile nodes will operate with a 20 nmi range of the fixed network node.

Testing objectives include (1) measurement of network join time for a mobile node; (2) measurement of network stability in an urban multipath environment; and (3) network throughput at varying communication distances. Current DoD testing of the SRW is focused on small area use of the networking waveform. Rockwell Collins' proposed testing is focused on the performance of the waveform and radios at longer distances to demonstrate expanded use of networking waveforms, specifically for eventual airborne applications within the DoD.