## **Exhibit: Description of Experiment**

Rockwell Collins, Inc. (Rockwell Collins) respectfully requests a new experimental license to develop a return-link waveform, lower-power VLF to HF band transmitter and receiver demonstration platform capable of simultaneous reception of up to 500 signals. Rockwell hopes to start this testing by June 1, 2017.

Although the goal of the testing is to maximize transmit power, it is expected that the EIRP will be less than 1W and the maximum distance of the communication link will be 3000km. The waveform design objective will be to convey a small status message on the order of 8 to 16 bits once every 10 minutes.

The implementation of the system will include the capability to scale the message time of the waveform to accommodate various signal-to-noise ratios for demonstration and analysis purposes.

Rockwell Collins is the leading supplier to the U. S. Military for LF/VLF communications systems. These predominantly use high power transmitters and large antennas to convey messages between various government assets. Rockwell Collins wishes to invest, experiment, and demonstrate new versions of these systems that may be used to move specialized data traffic using less power and more compact antennas.

The availability of modern digital signal processing techniques and antenna theory are useful to move LF/VLF communications into new applications that were not previously possible. Initially, Rockwell will test by transmitting from a given ground location to various test receiver points. If successful, this may lead to other experiments to support U.S. Military applications.