DESCRIPTION OF EXPERIMENT

Internal research in Multifunction Radio Frequency technology has enabled Rockwell Collins to develop a small, highly reconfigurable, wideband Software Defined Radio ("SDR") prototype that has current capability in electronic warfare and communications. Throughout the requested period, this radio prototype device, known as "Gecko," will be developed, tested, and demonstrated in various platform configurations, including being installed in small UAVs and/or in Networked Electronic Warfare Testbed pods carried by experimental aircraft. Electronic Warfare sensing and signal processing test events will require emulated or surrogate signals to be present in the electromagnetic environment. Two ground-based SDR emulators will be utilized to provide these signals of interest. This proposed experimentation will be located in the development team's local area, in Eastern Iowa.

Where, in the past, separate functionality in electronic warfare and communications required dedicated hardware, Gecko is able to converge this functionality into one hardware terminal set that is favorable to small form factor constraints, such as Size, Weight, and Power. As a multi-function device, Gecko can complete Electronic Warfare functions while simultaneously communicating with other nearby radios. Interoperability with other, non-Gecko radio hardware will be an experimental test point. All waveforms can be dynamically modified and switched on the fly, without removing Gecko from operation.