

**HARRIS CORPORATION
EXPERIMENTAL STA APPLICATION
FILE NO. 0651-EX-ST-2014
July 2014**

Exhibit 1 - Request for Special Temporary Authority

Harris Corporation ("Harris") hereby requests experimental Special Temporary Authority ("STA") to conduct on site testing in Tullahoma, Tennessee for a six month period with an anticipated start date of September 1, 2014.

Test Description

Harris is developing a suite of airborne networking radios to service various requirements for mission radios in the US Department of Defense. These radios run various networking waveforms including waveforms developed for the Joint Tactical Radio System (JTRS). One such waveform is the Wideband Networking Waveform (WNW) developed to provide wideband tactical internet to the Army ground force as well as Army rotary wing aircraft. The WNW waveform was recently delivered to the Army ground force in the VRC-118 vehicle mount radio. The WNW waveform was designed to support both ground force and rotary wing aircraft. To date, little or no testing has been conducted with WNW in rotary wing aircraft. Harris desires to test the Wideband Networking Waveform (WNW) using the AN/VRC-118 radio in an airborne environment to verify the ability of the waveform to maintain mesh network between aircraft and the aircraft and ground units. The ability to test the waveform at platform velocities commensurate with rotary wing aircraft at extended ranges is not easily done in a laboratory environment, hence the need for an actual flight test.

The test will consist of three fixed ground sites¹ in and around the airport in Tullahoma, Tennessee and up to two aircraft operated by XP Services in Tullahoma, Tennessee. Testing will be conducted to verify the ability of the waveform to provide specific data rates at specific ranges, the ability of the mesh networking to maintain the network topology when one or more of the nodes in the network is moving at velocities commensurate with rotary wing aircraft, and the ability of the waveform to merge network fragments into a larger network and fragment the network as necessary at velocities associated with rotary wing aircraft. The quantitative assessment of the network performance will be determined through engineering tools to monitor packet error rate, offered load, network topology etc.

The fixed sites will be within line of sight of one another and within line of sight of the airport in Tullahoma, roughly within 10km of the airport. The aircraft will be limited to a range of 120 km of the airport due to both the range of the OH-58C and the link budget associated with the WNW waveform and estimated radiated power from both the fixed ground sites and the aircraft. Flight paths of the aircraft will be selected to maintain line of sight with one or more of the fixed ground sites out to a range of 110 km.

¹ Nodes 2 and 3 are contemplated to be fixed nodes. However, these temporary fixed nodes may possibly need to be moved slightly depending on link performance and foliage loss. Accordingly, nodes 2 and 3 have been categorized as base/mobile.

The fixed sites will be provisioned with 75 watt power amplifiers and omni directional antennas with gains of +3 dBi. The aircraft will be provisioned with 75 watt power amplifiers and omni directional blade antennas with gains of less than 0 dBi. The WNW waveform occupies a 5MHz channel and will be used at L-band preferably on a frequency between 1755-1850MHz.

Because the equipment is technically incapable of providing station identification, Harris respectfully requests a waiver of the station identification provisions of Section 5.115 of the Commission's rules, 47 C.F.R. § 5.115.

All network traffic will be simulated traffic only, solely for evaluation purposes and not for the purpose of providing network data communications services to user stations.

Harris submits that a grant of an experimental STA is necessary and in the public interest because it will facilitate developmental improvements in Wideband Networking Waveform technology.

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