Related to the Nokia application for Experimental License for Customer Testing at the Nokia Facility in Naperville, IL

File No. 0235-EX-CN-2019

Planned accomplishments of the testing

Nokia is a non-traditional vendor supporting the Flight Line Radio Network [FRN] for the US Air Force. The objective of the Flight line Radio Network with Seamless Handoff effort is to develop and demonstrate a prototype flight line radio network operating in non-telemetry spectrum that will seamlessly handoff IP data using enhanced IP Fast Re-Route (IPFRR) techniques in a black router to an in-flight Aeronautical Mobile Telemetry network using user-defined autonomous handoff rules. The use of non-telemetry spectrum during pre- and post-flight activities, as well as during low-altitude activities can significantly reduce the demand on telemetry spectrum by offloading data for these portions of the overall test activities. The flight line radio network will be designed to provide full coverage of the flight line and taxiways. The flight line radio network technology will provide the following characteristics to DoD test ranges:

1. Radio technology agnostic architecture.
2. Seamless handoff of telemetry data streams.
3. Use of commercial radio technology: Commercial radio access technology is widely available in alternate portions of spectrum that should be considered for use by the technology solution.
4. Use of spectrum not allocated for Aeronautical Telemetry: The largest component of the flight line radio network is the use of spectrum not allocated for DoD flight testing. Options being considered are 5 Gigahertz WiFi and leased commercial LTE spectrum.

Testing at Nokia's Naperville Campus will allow for over the air testingprior to initial evaluation and deployment at the customer location.