Rockwell Collins

EXPERIMENTAL LICENSE APPLICATION (OR RENEWAL)

PLEASE FILL OUT YOUR ANSWERS IN A DIFFERENT COLOR FONT.

PART I:

1. Cost Center to charge applicable fees:

   E33

2. Is this application a new license or modification of existing license?

   If this is an existing license, provide the call sign. If this is a modification, please provide a description of the modification:

   NEW

3. Is confidentiality required for this license?

   If yes, then please provide a separate statement explaining why confidentiality is required.

   Please note: There is an additional fee associated when requesting confidentiality.

   NO

4. Is the experimental license to be used for fulfilling a government contract?

   If yes, then include a narrative statement describing the government project, agency, and contract number.

   YES. Cooperative Active Passive Surveillance. (CAPS). Office of Naval Research (ONR). Contract N00014-08-C-0154.

5. Is the license to be used for the exclusive purpose of developing radio equipment for export to be employed by stations under the jurisdiction of a foreign government?

   If yes, please provide the contract number and the name of the foreign government concerned.

NO

6. Is this license to be used for providing communications essential to a research project? (The radio communication is not the objective of the research project)?

   If yes, please provide the following:

   - A description of the nature of the research project being conducted.
   - A showing that the communication facilities are necessary for the research project.
   - A showing that existing communication facilities are inadequate.

   YES.

   Testing operation of Rockwell Collins networking radios, including FlexNet, when they are connected to a wideband antenna.

   Testing operation of CAPS by sending data and beacons between multiple nodes over the air.

7. **Note: This question must be answered with enough detail to explain the research project to someone not familiar with it.** If all the answers to items 4, 5, and 6 are **no,** provide a detailed narrative statement describing the following items:

   - The complete program of research and experimentation proposed including description of equipment and theory of operation.
   - The specific objectives sought to be accomplished.
   - How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion, or utilization of the radio art, or is along a line not already investigated.

   Answered in 4, 5 and 6 above

8. Estimated time required to complete the experimental program:

Through September 2012

9. Start and Finish dates of the experimental program:

July 2009 – September 2012

10. If you answer yes to any of the following questions, an Environmental Assessment will need to be completed and presented to the FCC.

- Will the facilities be located in a wilderness area? **N**
- Will the facilities be located in a wildlife preserve? **N**
- Will the experiment affect threatened or endangered species? **N**
- Will the facilities affect Indian religious sites? **N**
- Will the facilities be located in a flood plain? **N**
- Will construction of the facilities involve filling in wetlands, deforestation or water diversion? **N**

Existing facility, no construction required

11. Provide a list of all transmitting equipment that will be used in the experiment, including: manufacturer, model number, number of units, and whether the equipment is experimental.

FlexNet 4 Radio as previously described in license for Callsign WC9XUV. Manufacturer – Rockwell Collins. Model Number FlexNet-4, Up to five (5) units. Equipment is pre-EDM (Engineering Development Model).

RF Signal Generator. Manufacturer Agilent. One unit.

Ground Mobile Radio (GMR). Manufacturer Rockwell Collins. Up to five (5) units. Pre-EDM or EDM units.

12. Is the transmitting equipment listed in question 10 capable of station identification?

(Each experimental station must, unless specifically exempted, transmit its assigned call sign at the end of each complete transmission. The transmission of the call sign at the end of each transmission is not required for projects requiring continuous, frequent, or extended use of the transmitting apparatus, if, during such periods, the call sign is transmitted at lease once every thirty [30] minutes. The station identification must be transmitted in clear voice or Morse code. All digital encoding and digital modulation must be disabled during station identification.)

NO

PART II:

ANTENNA INFORMATION:

(Note: The FAA may need to be notified in certain instances and additional forms may be required such as: FAA Form[s] 7460-1 and/or 7460-2 and FCC Form 854R. In rare cases, obstruction marking and/or lighting and antenna structure registration number posting may be required.)

*Please provide the following information for **EACH** antenna:*

13. Latitude and Longitude in NAD83, degree-minute-second format.

Richardson (FREESTONE), TX - NL 32-59-42; WL 96-39-44; MOBILE: 3200 East Renner Road, Richardson, TX 75082, within 10 km, centered around NL 32-59-42; WL 96-39-44

17. Will the antenna extend more than 6 meters (19.7 feet) above the ground or above an existing structure?

NO

18. Distance to nearest aircraft landing area in kilometers?

9 NM from Addison Airport,

19. Type of antenna (circle one or add if necessary):

Fixed for both transmit and receive

20. If the operation will be conducted at a fixed site, provide the following:

Physical street address, city, county, and state of the location

Richardson (FREESTONE), TX - NL 32-59-42; WL 96-39-44; MOBILE: 3200 East Renner Road, Richardson, TX 75082, within 10 km, centered around NL 32-59-42; WL 96-39-44

Geographical coordinates exact to the nearest second:

As above

What reference system was used to provide the geographical coordinates (please circle one)?

WSS 84

21. If the operation is mobile or base and mobile, provide the following:

Approximate area of operation (please include unit of measure, i.e.: km, ft):

Fixed

Radius of operation (please include unit of measure, i.e.: km, ft):

10km

22. Is the antenna directional?

No

If Yes, please answer the following 3 questions. If No, move to question #21

Width of beam in degrees at the half power point:

N/A

Orientation in horizontal plane:

N/A

Orientation in vertical plane:

N/A

PART III:

FREQUENCY INFORMATION:

*Please provide the following information for **EACH** antenna:*

23. Frequency Range: Provide the lower and upper frequencies.

2 frequency bands: 240 – 450 MHz and 1700 – 2000 MHz

24. Power Output: Provide the maximum RF power at the transmitter terminals.

44 Watts (both frequency bands)

25. Effective Radiated Power: Provide the maximum ERP from the antenna. If pulsed emission, specify peak power.

46.624 Watts (both frequency bands)

26. Mean or Peak Power: Please state whether the power is the Mean or Peak Power.

Peak Power

27. Please provide the applicable level of frequency tolerance:

The maximum permissible departure by the center frequency of the frequency band occupied by an emission from the assigned frequency or, by the characteristic frequency of an emission from the reference frequency. Note: The frequency tolerance is expressed in percent [%] of the assigned or reference frequency.):

PART IV:

EMISSIONS INFORMATION:

*Please provide the following information for **EACH** antenna:*

28. Provide the three (3) symbols necessary to determine the Emission Designator.

Information regarding emission designators can be found at: http://wireless.fcc.gov/services/ind&bus/licensing/emission.htmlFCC: Industrial/Business Emission Designators

1M20G7D, 1M20G1D, 100HP0N

29. Please provide the following information, as appropriate, for the Modulating Signal:

Maximum speed for keying in bauds:

1M20G7D & 1M20G1D: 512 kbps – data throughput

100HP0N – 10 pulses per second (1 pulse per second typical)

Maximum audio modulating frequency:

N/A

Frequency deviation of carrier:

N/A

1M20G7D & 1M20G1D: CPM waveform

100HP0N: continuous wave (tone) pulses

Pulse duration and repetition rate:

1M20G7D & 1M20G1D: 1ms pulses at 700 Hops per second

100HP0N: 50 ms to 5 second pulses at 0.1 to 10 pulses per second

30. Provide the necessary bandwidth measurement and the units:

1M20G7D & 1M20G1D: 1.6 MHz, (90% OBW = 1.25 MHz)

100HP0N: 100 Hz

Rockwell Collins

Should you have any questions or comments, please contact:

HOLLY RIESZ
Regulatory Affairs
HJRiesz@RockwellCollins.com
(703) 516-8210
VPN 516-8210