Form 442 Confirmation Number:	**EL731366**
Form 442 File Number:	**0100-EX-PL-2005**
Date of Submission:	**03/30/2005**

Exhibit #1 Text and Diagram for Georgetown, NJ License Application

This license application is submitted to facilitate equipment testing and network system developmental testing of emerging Joint Tactical Radio System (JTRS) radios and networking technologies. This license request is for the purpose of equipment/system evaluation, development and testing to allow for equipment/system debugging, corrective actions and then additional testing.

The radio and networking protocols under test are Joint Tactical Radio System (JTRS) prototypes for future use in military environments in accordance with DoD specifications. Future frequency allocation requests and assignments for actual operational use will be in DoD controlled frequency bands. For testing purposes, under any license granted under this request, the maximum transmitter peak power will be 10 watts. For testing purposes, under any license granted under this request for all frequencies, omni directional (horizontal direction) antennas will be used with the maximum antenna gain of 3 dBi (vertical; elevation beamwidth), using commercial off-the shelf antennas; therefore the maximum radiated power will be 20 watts.

CenGen Inc. requests permission to use power amplifiers and directional antenna for communications between mobile ground, fixed wing aircraft and rotary wing aircraft assets in the conduct of experimental efforts to address the equipment/system and network development objectives stated above. Power amplifiers up to 10 watts peak are desired to support testing in locations where propagation is difficult due to foliage or comparable line-of-sight limitations and permission for their use requested. Horizontal, omni directional antennas with elevation beam widths of 55 degrees or less (gain of 5 dBi or less) will be used and permission for their use requested. All antenna placements on the mobile ground systems will be below 6 meters in height. The airborne antennas will be attached in accordance to all requirements and guidance to ensure that safety of flight requirements are satisfied. Maximum elevation of the airborne antennas will be 915 meters (3000 ft).

Permission is requested to use the above components in testing in the vicinity of Georgetown, NJ (40 deg 04 min 46 sec North / 074 deg 39 min 12 sec West) and a radius of 50 km. Testing is planned to continue through May 2007 and permission is requested for this duration.

Figure 1 is a pictorial representation of the testing environment.

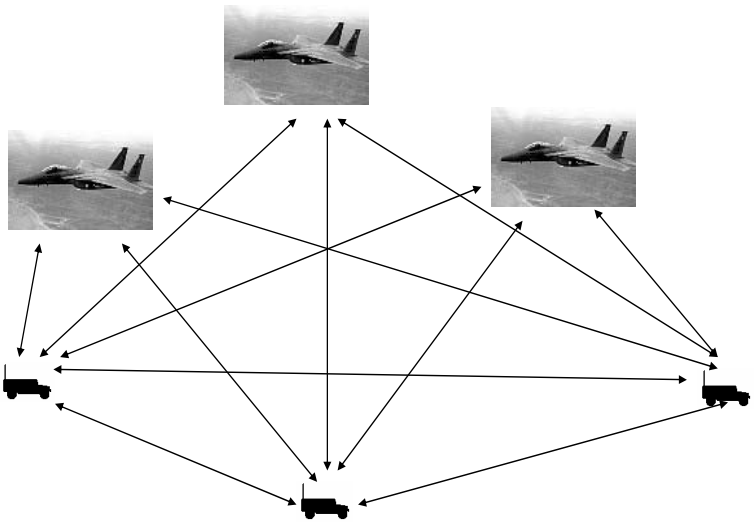

Figure 1: Pictorial representation of the testing environment

Background Information Related the Activities of CenGen, Inc.

Consulting & Engineering Next Generation Networks (CenGen) Inc. is engaged in several government sponsored (e.g. Office of Naval Research (ONR), Defense Advanced Research Projects Agency (DARPA), etc.) and Internal Research and Development (IRAD) efforts to advance wireless communications. Objectives under investigation by CenGen Inc. include:

1) advances to support highly mobile users of wireless connectivity,
2) advanced usage of spectrum to improve spectral efficiency,
3) use of all layers of the protocol stack to improve efficiency and mobile user connectivity, and
4) advances in electronic scanned arrays (ESA, phased arrays, etc.), in particular, to improve spectral reuse through directional antenna approaches.

CenGen Inc. has, and anticipates, contracts, as well as IRAD funding, to support data collection and measurement activities to substantiate, augment, and support modeling and simulation efforts and laboratory type efforts typically undertaken by the Original Equipment Manufacturer (OEM) of particular components of RF technology (i.e. Radios, transceivers, modems, antenna, ESA, protocol stacks, applications, etc.). The ability to conduct testing over a wide frequency range is very important to the advancement of the objectives stated previously. Testing at any particular location or experiment site is typically a few weeks in duration; however locations

change frequently to accommodate a variety of environmental, terrain, propagation, and experimental objectives.

The research and experimentation efforts support data collection in field environments. Advances in modulation techniques to counter multipath, jamming, and interference are being addressed as components of ongoing DARPA sponsored efforts. Advanced ESA to improve spectral efficiency via the use of directional antennas are being developed. Physical layer advances (i.e. modulation techniques and directional antennas) require advances in high layer protocols to enable effective network communication. Recent efforts have indicated that the use of higher layers to form networks consisting of directional antennas may enable significant spectral reuse. A simple example would be a three node network where the middle node can seamlessly relay for nodes on either side of it, allowing all nodes to transmit at lower power than if the end nodes would attempt to communicate directly (i.e. without the relay in the middle). The result of the lower power transmission could result in the frequency being available for reuse by other nodes at shorter distances than are in standard use today. Another example relevant to the FCC would be the more effective use of spectrum by enabling effective use of highly directional antennas to mitigate interference and/or increase range, potentially allowing spectral reuse to a significantly higher degree than is presently implemented. The impact of such a configuration is that higher layer protocols need to be advanced along with the physical layer changes and the impact on the applications (i.e. likely longer latency in the simple example above) need to be addressed, including advances to make the applications more tolerant to mobile wireless networks. Approval of this request will advance physical layer (e.g. radios, ESA), media access control layer, network layer, and application layer efforts presently being address in isolation by enabling them to be tested in a variety of field environments.