Skeyeon, Inc.
Experimental License Application
File Number: 0463-EX-CN-2019

Explanation of Experiment

Skeyeon, Inc. is an entrepreneurial firm launched by an experienced engineering team to create an innovative satellite imaging constellation. This application is submitted to request authorization for the ground-based testing of radio systems that may be incorporated into the satellite systems that are expected to launch starting in 2020.

Grant of this application will advance the development of the Skeyeon system.

Technical Synopsis:

Spectrum Requested:	10.7-11.7 GHz to test downlink; 6.290-6.310 GHz to test uplink
Operations Indoors:	operations will be primarily hard-wired, with occasional over-the-air tests
Narrow beam:	downlink directional transmission – 25 dB of gain, half-power beamwidth 9.9

Description of Experiment:

Skeyeon is in the process of developing prototype satellites for its new satellite imaging constellation. The goal of testing is to design a prototype satellite that will function properly to deliver the performance required for the business model to work. The expectation is that the uplink will ultimately use less bandwidth, but this experimentation is designed to allow for a number of configurations.

The testing will be used to validate the performance of a phased array prototype. Some testing will be done at a bench level, some in an antenna chamber, and some on an open antenna range.

Most of the testing will be conducted using hard-wired connections to minimize over-the-air transmissions.

Location of Operations:

The work will be conducted at four different locations working with some of Skeyeon's development partners.

Those locations are:

1. Jacobs Engineering Building, UC San Diego, La Jolla, California
2. SPAWAR Systems Center, San Diego, California
3. First RF test lab, Boulder, Colorado
4. Birck Nanotechnology Center, Purdue University, West Lafayette, Indiana

Skeyeon will always be in control of the radios, therefore it is the proper applicant for this license. The operations will be primarily indoors. Mostly, testing will be conducted on the test bench using hard wired connections.

Skeyeon wishes to clarify that this application is strictly for ground-based operations in the US. It is not yet ready to file an application for a test launch. As a result, it is not seeking launch authority, it has not yet prepared an orbital debris assessment report, and international coordination is not appropriate in this instance.

Time of Use Is Limited:

The bench level testing could last for some time, but the antenna testing would be for a few days to one week at a time, with multiple iterations expected. The spectrum could be in use for several hours across 5 workdays, but then the spectrum might not be in use for another 4 weeks, while there is additional bench testing.

No Likelihood of Harmful Interference:

Skeyeon's proposed operations will be conducted mostly indoors, and mostly over wired connections. Even when testing is conducted over the air, the characteristics of the spectrum in question are such that the signals are unlikely to propagate very far because of the rapid attenuation of signals at these frequencies.

Stop Buzzer Point of Contact:

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Conclusion:

Skeyeon is requesting experimental authority to design and test a prototype satellite, incorporating the spectrum and camera configuration(s) that could be used when it is ready to launch a commercial remote sensing satellite constellation for earth imaging.

If there are any questions about this application, please contact Anne E. Cortez, Esq. Counsel to Skeyeon, alc@conspecinternational.com or 520-360-0925.