

## **Exhibit 1: Purpose of Experiment**

### **a. Complete program of research and experimentation including description of equipment and theory of operation**

#### Facility and position.

Intellectual Ventures Management, LLC (IVM) is applying for an experimental license to operate a directed RF energy transfer system indoors at 14360 SE Eastgate Way in Bellevue, Washington, a laboratory facility (the "Facility") leased by its affiliates. IVM is a privately held US company specializing in creating and building an invention marketplace, and incubating new technology.

The desired experiment would be conducted in the open spaces of the Facility [REDACTED].

#### Experimental system(s).

The directed RF energy transfer system consists of a CW signal generator, RF power amplifier, an experimental directional transmitter antenna, and an experimental receiver with one or more RF-to-DC converting circuits (rectifiers). The experimental transmitter antenna will be a large-aperture antenna designed and configured to produce three-dimensional focusing (RF power density concentration) within the radiative near-field of the antenna. One experimental transmitter antenna ("Transmitter Antenna A") is a static printed circuit board (PCB) patterned as a two-dimensional reflectarray, with fixed beam profiles. A second experimental transmitter antenna ("Transmitter Antenna B") is a linear-array tunable antenna of the Metamaterial Surface Antenna (MSA) type, with beam profiles dependent upon the configuration of the antenna. A third experimental antenna ("Transmitter Antenna C") is a static reflectarray custom-made from 3D-printable dielectrics and a conducting sheet.

#### Theory of transmitter operation.

##### *Transmitter Antenna A (Exhibit 2a)*

[REDACTED]

##### *Transmitter Antenna B (Exhibit 2b)*

[REDACTED]

##### *Transmitter Antenna C (Exhibit 2c)*

[REDACTED]

#### Other parts of the experimental system.

REDACTED

[REDACTED]

Other equipment used includes handheld power meters, spectrum analyzers and probe antennas, which facilitate the measurements of absolute and relative power density levels.

Interference mitigation.

[REDACTED]

**b. The specific objectives sought to be accomplished**

[REDACTED]

**c. 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**

[REDACTED]