

Exhibit for HiAkaSat Experimental License Application

2a: (A description of the nature of the research project being conducted).

The HawaiiSat-1 mission's 'HiakaSat' satellite is the University of Hawaii's first microsatellite class satellite. The mission will develop and demonstrate an experimental COTS satellite bus which will be carrying an experimental hyperspectral imaging system.

The experimental thermal hyper-spectral remote sensing payload is called the 'Space Ultra-Compact Hyperspectral Imager' (SUCHI). SUCHI is being developed by the Hawaii Institute of Geophysics and Planetology (HIGP) at the University of Hawaii. The key difference that SUCHI has from other similar remote sensing technologies is its ability to operate without cryogenic cooling.

The satellite itself is being built completely with commercial or industrial grade commercial off the shelf components. Operation of the satellite in space will demonstrate whether the components will be viable for use on future flight missions.

The mission development and operations will serve as a learning experience for University of Hawaii students, as well as an outreach tool to promote STEM activities.

#2b (A showing that the communications facilities requested are necessary for the research project)

The HiakaSat satellite is a remote sensing satellite. As such, a large amount of imagery data will need to be transferred down to Earth. Radio communications is the method chosen for command and telemetry. This appears to be the most economical and least risk communication method when compared with other non-RF communication technologies.

#2c (A showing that existing communications facilities are inadequate).

There are no existing communications facilities, this is a new satellite.

Type of Applicant:

The applicant, University of Hawaii, is a state supported institution of higher education.