

**EXHIBIT 1**  
**Question 7**  
**Description of Experiment, Specific Objectives,**  
**and Its Contribution to the Radio Art**

**Description of the Experiment**

A diagram of the configuration OnSat's network is shown in the below figure.

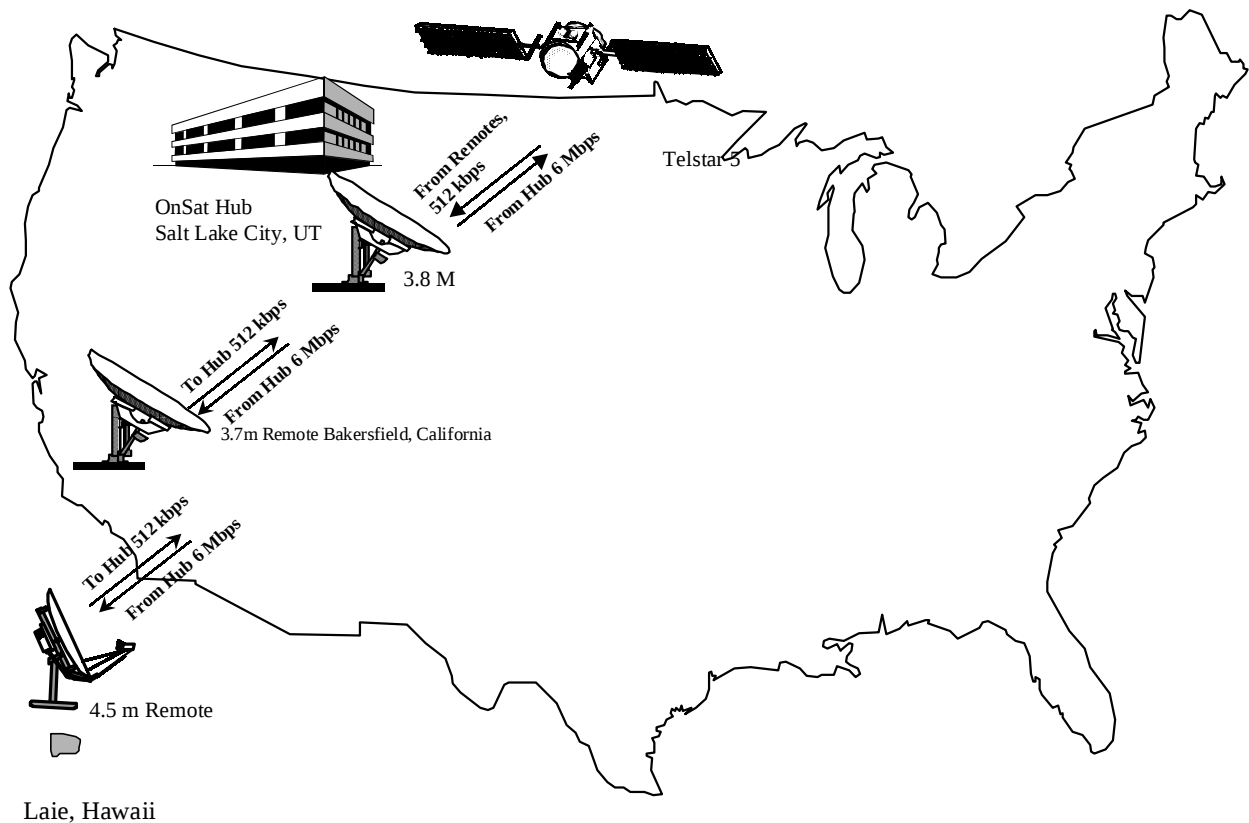


Exhibit 1:: OnSat Network Communications C Band Experiment

The purpose of this application is to conduct three experiments regarding the use of C-Band VSATs. The experiments will utilize C-Band VSATs in three locations: Laie, Hawaii; Bakersfield, California; and Salt Lake City, Utah, the location of OnSat's network hub.

The first experiment will use various customized implementations of videoconference two-way transmissions, including different software packages and hardware manufacturers to determine the applicability of the current state of the art in videoconferencing

to C-Band satellite transmission. A combination of “high end” and “low end” videoconferencing systems will be experimented with to determine bandwidth-efficient videoconferencing solutions via satellite.

The second experiment will attempt to impose “prioritization” on burst transmissions from remotes, in order to determine and optimize the most efficient bandwidth hierarchical levels and tiers of service for a mixed media communications environment. Experimentation with subchannels and priority re-assignment will be made, all in the environment of C-Band VSAT transmission.

The third experiment will test OnSat’s developmental enhanced ISO Layer 6 protocols, in conjunction with TCP/IP port usage, to optimize efficiency of internet traffic via a C-Band VSAT network. OnSat’s hub at Salt Lake City will act as the gatekeeper for internet traffic among remotes in Hawaii and Bakersfield and other sites as available. The enhanced Layer 6 implementation will consist of not only caching, but also switching and selective deferral during peak periods of bandwidth intensive capacity requests from remotes.

### **Specific Objectives**

Specific objectives are related to OnSat’s C-Band VSAT network provision of internet services to areas not normally considered to be cost-effective for such services. These include:

- Maximization of C Band VSAT throughput for various types of content (data, videoconferencing)
- Ability to prioritize satellite accesses to maximize throughput
- Ability to utilize a “high-low mix” of videoconferencing techniques to maximize bandwidth
- Combination of methods to minimize satellite bandwidth in a highly reliable C-Band VSAT environment

### **How the Experiment Has a Reasonable Promise of Contribution to the Development, Extension, Expansion, or Utilization of the Radio Art**

In the past, Ku Band VSATs have been extensively tested in the areas that are related to some of the areas to be tested here. However, no C-Band VSAT tests have been conducted which utilize the unique characteristics of C-Band VSATs: higher reliability of transmission, reduced requirements for data to be stored on site, less computing complexity for satellite protocols, and greater ability to impose transmission priority due to increased probability of communications with the remote VSATs via an overhead channel. It is anticipated that these experiments will provide the basis for improved use of spectrum via C Band VSATs.