

# SERVICES

Through partnerships with the National Telecommunications and Information Administration (NTIA), the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), and the International PEACESAT Users Group (IPUG), PEACESAT is able to provide voice, video, and data services for public service telecommunications.

## **PEACESAT Voice Teleconferencing Services** **PEACESAT Video Teleconferencing Services** **PEACESAT Data Services**

### **PEACESAT Voice Teleconferencing Services**

VOICE SERVICES -- There are three voice services available (1) Teleconferencing, (2) Point-to-Point, (3) Phone Patching/Bridging. Users can teleconference with 52 Sites in 22 countries or states in the Pacific Islands region. PEACESAT can link these Users in a large teleconference or as a point-to-point call.

The multi-point teleconferencing uses a simplex communications link that can be accessed by all sites and the point-to-point teleconferencing uses a full-duplex link.

TELECONFERENCING -- This service is needed for communication with multiple sites. PEACESAT teleconferencing service enables all sites to participate in a single voice teleconference. This is accomplished through a simplex circuit on the satellite that all sites can receive and transmit on. It operates like a radio system. One station transmits at a time and all the Users will all hear the voice transmission.

There is a protocol for passing the transmission from Site to Site. There are no technical limits to the amount of sites capable of joining a teleconference, however for a practical interactive teleconferencing it is more manageable to have a maximum of approximately 7 sites.

Teleconferences require a minimum of one week to schedule and to confirm participation.

Teleconference request involves the completion of a STAN Teleconference System Use Form. This form should be submitted to the local PEACESAT Operator who will conduct a preliminary check to see if the suggested time is free.

POINT-TO-POINT -- This service is needed for communication between two sites. This type of service request does not require a STAN Teleconference System Use Form. However it must be coordinated via the PEACESAT operators. The PEACESAT operators will receive a request and facilitate a schedule available to both parties involved in the Point-to-Point call.

PHONE PATCH/BRIDGING -- A User does not have to be within a country or state to use PEACESAT. A User, accessible by telephone anywhere, may call a PEACESAT Station to be connected to the network-- this service is called a phone-patch. A User should determine which PEACESAT Station would be the most appropriate and inexpensive to call.

The PEACESAT Headquarters in Honolulu operates a Westell Audio Bridge that enables PEACESAT to link external calls to the PEACESAT network. A User could arrange for teleconference participants from a non-PEACESAT location to call into the PEACESAT Headquarters audio bridge for connection to a PEACESAT teleconference. The audio bridge can support up to 10 callers.

TELECONFERENCING PROTOCOL -- The user protocol is based on basic radio communications. Users in conferences must signal that they are done speaking by saying "over" or "back to you" or directing the speaking to another user on the conference. If a user wishes to say something but is not recognized, the user must break into the conversational chain by saying "Breaker." The conference chair will usually pass the conference on to the "breaker."

NETWORK CHANNEL ALLOCATIONS -- There are 9 teleconferencing (or half-duplex) channels and 3 point-to-point (or full-duplex) channels available for voice services. The 9 half-duplex channels are also used for point-to-point calls. The full-duplex channels are reserved for facsimile and data communications.

### **PEACESAT Video Teleconferencing Services**

During the PEACESAT Policy Conference at Sendai, PEACESAT users expressed a strong requirement for video teleconferencing (VTC). This requirement became a reality through the design of Digital PEACESAT (aka PEACESAT Services Improvement Plan or SIP), the Distance Education Learning Technologies and Applications (DELTA-Hawaii) grant from the U.S. Department of Commerce, and the development of the State of Hawaii Telehealth Access Network or STAN.

With a digital modem, a Site can communicate at speeds of 64 to 256 Kbps, depending on the type of PEACESAT

earth station that is used (e.g. 3m, 3.5m or 6 meter) and whether the earth station is maintained and aligned properly. This data rate will support compressed video teleconferencing among sites.

To take advantage of this capability, however, a Site must have a video teleconferencing system that will enable video inputs and outputs to be converted into digital data, a properly aligned antenna, and a digital satellite modem and interface to the PEACESAT Earth Station.

Through partnerships PEACESAT is able to access two VTC Bridges that can connect VTC's via ISDN, Internet Protocol (IP), ATM, and Satellite. PEACESAT can accommodate VTC's at varying data rates with any entity that possesses compliant VTC equipment.

The first step to coordinating a VTC is to fill out and submit both an Account Request Form and a VTC Request Form to STAN Operations. This step is vital as a STAN operator will check on the availability of the requested PEACESAT sites and the status of the VTC Bridges. For more information please contact STAN Operations at (808) 956-6668 or stan@tipg.net.

### **PEACESAT Data Services**

**ELECTRONIC MAIL POST SERVER WITH ANALOG MODEM** -- An electronic mail server is basically a computer and software that is able to store many messages and electronic files. These files are transferred to a user computer through a local telecommunications connection that links a user computer to the electronic mail server.

**Local telecommunications link** - The communication connection may be made through a direct connection between computers, a leased telephone line connection that uses modems over the telephone lines provided by a local telephone company, or through a dial-up capability that enables a user computer to dial through the telephone network to enable the modems to communicate. Once the modems are connected, the user is now linked to the electronic mail server for electronic mail.

Through a software capability that is provided for in electronic mail servers, the electronic mail and files are transferred back and forth between systems. This means that mail that is to be addressed outside of the local Site environment will be transferred to the PEACESAT host system in Honolulu and mail addressed to the local Site will be automatically transferred to the electronic mail server.

Once the transfers have occurred, the following will happen. The mail that is transferred to PEACESAT Headquarters will be automatically sent out via the Internet to addressees around the world. The mail that is transferred to a local Site will then be made available for local distribution through whatever networks users access the server from.

**DIGITAL SATELLITE MODEM FOR HIGHER SPEED COMMUNICATIONS** -- The design of Digital PEACESAT provides an upgrade option for existing PEACESAT Sites. The option enables a Site to acquire a digital satellite modem or "DSM" for higher speed communications. The current analog modems support a speed of up to 14.4 Kbps. A digital satellite modem supports speeds of up to 64-128 Kbps. The variation in the speed of a modem will be dependent on location of the Site, whether the terminal has been maintained well, and whether it is operated well (e.g. alignment of antenna).

A DSM would then enable the user to transfer more and larger files. The DSM also does not rely on the full-duplex channel assignments and would therefore not be limited to the current time slots that are available to the analog users. PEACESAT Sites that acquire these modems must work with PEACESAT Headquarters to obtain time slots and capacity allocations.

The Emergency Management Terminals will all have digital satellite modems.

**Internet ACCESS** -- PEACESAT is also enabling users to have access to Internet and other services. For these sites, 32-128 Kbps links will be activated to the Internet link at the University of Hawaii. These sites will be required to obtain a "router" that will enable multiple concurrent accesses.

**SITE NOTES:** To develop an electronic post office and/or to upgrade the speed for data communications will require Sites to purchase software (purchase item: electronic mail software), support local dial-in capability (purchase item: telephone lines and modems), digital modem interface (purchase item: DMI manufactured by Marine-Air Systems), a digital satellite modem (purchase item: DSM manufactured by Radyne), and, possibly, a Cisco router. It will also require installation of the system and training of operators.