

# PROGRAM TIMELINE

- 1963** The first geosynchronous communication satellite is launched
- 1966** NASA launches the Application Technology Satellite 1 (ATS-1)
- 1967** NASA completes weather information experiments on ATS-1
- 1968** Dr. John Bystrom, University of Hawaii responds to the NASA RFP for innovative uses of ATS-1
- 1971** NASA approves Dr. Bystrom's proposal to initiate PEACESAT. The original purpose was "...to demonstrate the benefits of currently available telecommunication technology when applied specifically to the needs of sparsely populated, less industrialized areas."

Dr. Bystrom, Dr. Paul Yuen, University of Hawaii Engineering, and Professor Katashi Nose, University of Hawaii Physics, designed and built the first PEACESAT earth stations. Total cost was approximately \$3000 US per terminal (yagi antenna and push-to-talk simplex circuits).

- 1972** PEACESAT becomes the first educational satellite network in the world linking the University of Hawaii at Manoa, the University of Hawaii at Hilo, Maui Community College, Wellington Polytechnic and the University of the South Pacific.

The PEACESAT Network supports more than 100 earth stations and becomes the umbrella network for regional sub-networks such as the USPNet (University of the South Pacific Network), Micronet (Micronesian Network), AsiaNet (Japan, Indonesia, and Thailand), Kangaroo-Net (Australia) and DOINet (Department of Interior Network).

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- 1985** ATS-1 station keeping fuel is depleted. The PEACESAT program under the leadership of Dr. Donald M. Topping, Principal Investigator, and Ms. Lori Mukaida, Director, continue to seek a technical solution for the Pacific Islands.

- 1987** U.S. Congress authorizes \$3.4 million to re-establish the PEACESAT program and assigns stewardship to the National Telecommunications and Information Administration (NTIA) of the U.S. Department of Commerce.

- 1988** NTIA and PEACESAT initiate the re-establishment of PEACESAT. The re-establishment was undertaken through a Cooperative Agreement. A separate agreement among the NTIA and the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration provides authorization for the use of the GOES-3 satellite.

- 1990** PEACESAT initiated dial-up bulletin board information service. The electronic bulletin board was useful for electronic messaging and file transfers among sites.

- 1992** Internet electronic mail and information services are rolled-out for PEACESAT Sites with funding from the U.S. Department of Agriculture. A Sun Sparc computer is installed with the assistance of the UH Office of Information Technology Services.

- 1993** PEACESAT develops a "Services Improvement Plan" (PEACESAT SIP) and submits a proposal for implementation to the NTIA. The design of the SIP calls for the establishment of digital carriers with time division multiplexing for concurrent voice and data. The SIP also provides for compressed video teleconferencing at 128 Kbps.

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- 1993-94** PEACESAT in collaboration with the Forum Fisheries Agency unveils a UUCP-based batch electronic mail system. The batch mail system essentially queues up mail for transfer into the PEACESAT-HQ electronic mail system. Essentially, the system functions as an electronic post office. This electronic post office enables FFA to serve many users at a time.

**1994**

The PEACESAT SIP plan is approved for the next phase of detailed design and testing. The plan calls for digital carriers as an "overlay" to the existing network which relies on analog (narrowband frequency modulated) carriers.

In collaboration with the Agricultural Development in the American Pacific Program (ADAP), PEACESAT tested and rolled out remote access to Internet and information services. The development has mixed success owing to level of Site support and local communication links.

**1995**

PEACESAT transitioned to the use of the GOES-2 satellite with the collaboration of NOAA. The transition was transparent and all users were able to align their antennas to see GOES-2.

**1994-95**

In collaboration with the Pacific Basin Development Council, Federal Emergency Management Agency, and the Department of Interior, PEACESAT worked with the Pacific Caucus of Emergency Managers to implement an Emergency Management Network. The EMN was installed in 1996 in eight locations: the Commonwealth of the Northern Mariana Islands, Federated States of Micronesia (Chuuk, Kosrae, Pohnpei and Yap), Guam (University of Guam), the Republic of the Marshall Islands, and the Republic of Palau. American Samoa is expected to come on-line some time in early 1997.

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**1996**

PEACESAT, in collaboration with the Pacific Islands Health Officers Association (PIHOA), submitted a proposal and has received funding for electronic post offices in health ministries. The electronic post offices are to be established in collaboration with the Emergency Management Network.

PEACESAT collaborated with educational agencies in the Pacific Islands Region and the Pacific Region Educational Laboratories (PREL - Hilda Heine and James Bannan) for a Challenge Grant. The Challenge Grant scores well in regional reviews, but gets low marks for not having innovative technology.

**1997**

The PEACESAT Program of the University of Guam and the University of Hawaii PEACESAT Honolulu submit a grant proposal to the Public Telecommunications Facilities Program (PTFP) of the National Telecommunications and Information Administration for a Hub Site. The application is successful. The Hub Site is installed, but just as tests are to begin, Typhoon Paka destroys the Hub Site antenna. The Emergency Management antenna at the UOG survives.

An Institute of Telehealth and Telemedicine is held at the East-West Center. Over 250 health care and telecommunications and information technology specialists attend. The Institute is sponsored by the State of Hawaii Department of Health, the High Technology Development Corporation, the Social Science Research Institute of the University of Hawaii, and the Department of Business, Economic Development and Tourism. The Co-Chairs of the Institute are Deane Neubauer and Norman Okamura.

The American Samoa Government's Office of Federal Programs and PEACESAT Headquarters submit and receive a grant from the PTFP/NTIA to develop a PEACESAT Hub Site in American Samoa.

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**1998**

The American Samoa Distance Education, Learning, and Telehealth Consortium is formed by the government of American Samoa. A link of 384 Kbps is provided by the American Samoa TeleCommunications Authority (ASTCA). This link is used for voice, data (Internet access), and video teleconferencing. The link uses a Frame Relay Access Device that concurrently supports voice, data, and compressed video teleconferencing. It is the first link in Hawaii the Pacific Islands region that supports such capability.

Senator Daniel K. Inouye, Assistant Secretary of Commerce Larry Irving, and Mr. Stephen Downs, Director of the Telecommunications and Information Infrastructure Assistance Program, visit PEACESAT Headquarters at the UH.

The School of Public Health delivered two graduate courses in telehealth and telemedicine to American Samoa. The Kauai Community College delivered a

non-credit course on cardiac arrhythmia to nurses and physicians at the LBJ Tropical Medical Center. The Telecommunications and Information Policy Group provided some training on the Internet.

PEACESAT interconnects the American Samoa DELTA link to the State of Hawaii Telehealth Access Network that is developed through a PARTNERSHIP among the Hawaii Health Systems Corporation, High Technology Development Corporation, and the Telecommunications and Information Policy Group of the Social Science Research Institute at the University of Hawaii.

The Saskawa Pacific Islands Nations Fund (SPINF) supports the development of Pacific Newsbytes newsletter that is incorporated into the Hawaii Web and Internet News. The newsletter provides perspectives and information on telecommunications in the Pacific Islands Region. The issues cover topics from telecommunications development, distance learning, regional satellite communication networks, telehealth and telemedicine and other topics.

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## 1999

The American Samoa Department of Education received a \$3.5 million dollar E-Rate grant from the Schools and Libraries Program, established by the Federal Communications Commission in accordance with the Telecommunications Act of 1996.

Continues on-going coordination with NOAA to relocate GOES-7 to 175 degrees West.

Negotiated a Memorandum of Understanding with NASA for NASA will provide primary telemetry, tracking and control of GOES-2 and GOES-7.

PEACESAT assists the Guam Department of Education and the CNMI Public School System with the development of E-Rate applications to the Schools and Libraries Consortium of the FCC Universal Services Program.

Assists the University of Guam in initiating the reestablishment of the PEACESAT Hub Site for enhanced services such as higher speed data services, video conferencing and concurrent voice and data communication. This was also supported through a PTFP planning grant to extend PEACESAT services beyond the urban areas.

Facilitated distance education programs via satellite between Hawaii, American Samoa, Guam and Micronesia. The undergraduate and graduate courses on telemedicine, telehealth, nursing, basic telecommunications were offered by the University of Hawaii (UH) School of Public Health ('Public Health 791 -A Survey of Telehealth', 'Public Health 792 -Telehealth Systems, Networks and Applications'), the Kauai Community College ('Nursing 259 -Basic EKG Interpretation') and the University of Guam (UOG) ('Nutrition for Health Professionals'and 'Leadership/Management for Nurses').

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## 2001

PEACESAT celebrates its 30<sup>th</sup> Year Anniversary.

Jackson and Tull completes the installation and implementation of a 7.2m satellite earth station at the American Samoa Power Authority on behalf of the American Samoa Distance Education Learning and Telehealth Applications (DELTA) Consortium. This PEACESAT Hub site will provide services to the local hospital, community college, and other government agencies.

PEACESAT Headquarters receives base level training from the NOAA Satellite Operations Control Center on satellite tracking, telemetry and control and satellite navigational engineering.

Assists the University of Guam and the Guam Department of Education with the implementation of a distance learning network with compressed video teleconference capabilities that interconnects the UOG/PEACESAT, Guam DOE, and other agencies to the network.

Assists the Public School System (PSS) of the Commonwealth of the Northern Mariana Islands with the implementation of a distance learning network using the E-Rate network facilities. The video codecs and bridge in this network was funded

under a PTFP/NTIA grant.

Assists with the on-island wide area network extensions of the Samoa (formerly Western Samoa) and American Samoa, referred to as the "SAS Link." PEACESAT worked with the National University of Samoa to establish a H.323 video teleconferencing link over a fractional T-1 connection to the ASG DELTA network. The network enables NUS to participate in region-wide distance learning.

Initiated discussions with the Japan Ministry of Public management, Home Affairs, Post and Telecommunications regarding possibilities for future satellites for public service telecommunication applications, including the Wideband InterNetworking engineering test and Demonstration Satellite (WINDS).

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## **2002**

Jackson and Tull completed the installation of a 7.2m satellite earth station located at the NASA tracking facilities at the Kokee Park Geophysical Observatory in Kauai, Hawaii. This earth station, funded in part by PTFP/NTIA, will provide TT&C functions as well as back-up operational support.

PEACESAT established operational procedures with the Kokee Park Geophysical Observatory (KPGO), NASA and NOAA for special eclipse operations and telemetry tracking and control functions.

PEACESAT and the University of Hawaii enter into a Memorandum of Agreement between the University of Hawaii and the Pacific Missile Range Facility (PMRF) to share resources in support of public service telecommunications. The MOU secures network capacity between PMRF to KPGO.

Establishes a PEACESAT Operations Maintenance and Improvement Program (OMIP), funded in part by the Department of Interior and in cooperation with the American Samoa Power Authority.

Develops agreements with local PEACESAT management for the commitment of a minimum 25% FTE PEACESAT operator/technician.

Assists in the organization of a United Nations World Summit on Information Society (WSIS) side event entitled "Pacific Islands and the WSIS: ICTs for Development: Resources, Needs and Opportunity," to provide an opportunity for Pacific states to share their experiences in communication development, to raise awareness of Pacific states in the WSIS process and support their full and effective participation.

Under a research fellowship with the Japan National Institute of Multimedia Education (NIME), Ms. Christina Higa, PEACESAT Director studied and trialed the integration of the Space Collaboration System (SCS) that connects 123 Japan universities and research institutes with the PEACESAT network. A review of potential program areas between the U.S., Japan and the Pacific Islands was conducted. Network applications include: collaborative research between the Center for Asia and the Pacific Islands Studies of the University of Ryukyus and Pacific Islands, Japanese language courses, cultural exchanges and teacher training programs.

Continues on-going discussions with the Japan Ministry of Public management, Home Affairs, Post and Telecommunications regarding possibilities for future satellites for public service telecommunication applications, including the Wideband Inter-Networking engineering test and Demonstration Satellite (WINDS).

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