The Japan Telemedicine Project - FY98

1. Background – In 1997 Akamai received funding from the US Navy Surgeon General's office with instructions to create a Telemedicine solution in the Pacific, in response to perceived needs to better manage medical resources and assist remotely located providers in accessing medical specialty care. Akamai assumed project management duties and restructured the proposed project into a cost-effective solution which addressed real needs and functional requirements in Japan and Diego Garcia. In addition, Akamai contributed approximately $200K towards the project's development.

The Japan Telemedicine Project system is a store-and-forward teleconsultation system that uses a digital radiology backbone married with web-based technologies to move medical information (text and images) over communication systems currently in use by the military in the Pacific. Infrastructure and bandwidth of the current communication lines are extremely limited and site specific. The teleradiology and teleconsultation systems will utilize variable bandwidth and variable rates of compression to send and receive medical information to and from a central server located at USNH Yokosuka. Systems are DII/COE compliant. The technology is COTS-based using a browser interface to the World Wide Web (WWW.) There is no interface with legacy systems such as CHCS.

The Japan Telemedicine Project System serves as a tool, which will provide remotely located primary care providers, the ability to access specialists at major medical centers, for expert consultation regarding the care of patients with dermatologic and orthopedic conditions. Using a structured clinical documentation approach (clinical format) providers can effectively communicate complex medical information to a specialist for assistance in the clinical-decision making process.

2. Organization:

Project Manager: Jim Francoise, Akamai
Naval Hospital Yokosuka,
Branch Clinic Sasebo,
Branch Clinic Iwakuni,
Branch Clinic Atsugi,
Branch Clinic Atsugi,
Naval Clinic Diego Garcia
USS Kitty Hawk (Tele-Dermatology Consultation)

3. **Mission Statement – Implement** a Telemedicine system in naval facilities in Japan and Diego Garcia to provide remote support in Radiology and consultative services in Dermatology and Orthopedics.

4. Goals and Objectives –

Objectives: The Japan Telemedicine Project System was designed to address the following functional requirements:

- Better manage medical resources.
- Decrease transportation's requirements.
- Increase access to specialty care.
- Promote education
- Decrease the professional isolation that occurs with remote deployment.
- Encourage delivery of services at the primary point of care in order to promote continuity of care.
- Research objectives include an assessment of whether such a system is feasible, productive, beneficial to the patient and acceptable to the providers.

Goals: Demonstrate and validate the operational concepts encompassing the virtual radiology environment. Evaluate and determine the benefits of economies of scale, re-engineered business practices and cost avoidance as they improve quality of and access to health care. Document and evaluate the development of clinical and administrative protocols and procedures in support of Tele-Dermatology and Tele-Orthopedics.

5. Current Status –

All Teleradiology, Tele-Dermatology and Tele-Orthopedics systems have been deployed and are operational at all sites.

USS Kitty Hawk has access to Tele-Dermatology consultation with Yokosuka.

6. Strategic Direction - A number of evaluations and investigations are proposed in this project. These are selected and directed on the basis of providing the most return on investment for the proposed research initiative. Major studies to be undertaken under this project are:

1) The technical and operational acceptability of the Japan Virtual Radiology Environment Network

2) The technical, operational, and procedural specifications for image processing and links to other imaging networks.

3) The cost effectiveness and strengths and weaknesses in the Japan Virtual Radiology Environment network Performance.

4) The impact of this network on the practice of diagnostic imaging service.

5) The cost effectiveness and return on investment for the teledermatology and teleorthopedics systems.

7. **Military Significance.** This Telemedicine system once operational can be implemented at any military region where MTFs are scattered and local expertise is lacking. Consultations can be facilitated using the internet.

8. **Budget / Financial Status Information:**

9. **Business Association:**

   IBM Corporation
   Meta Solutions
   CINCPACFLT/MARFORPAC Surgeon's Office (NOIM); LT Doris Nedved
   CINCPAC Surgeon, CINCPAC

10. Project Security: Systems users are managed through two levels of security, usernames and password. The Telemedicine server uses SSL and a request for a X.509 server certificate from DISA is being prepared.

11. Summary: The Akamai Project Office is implementing a Telemedicine system in navy medical treatment facilities in Japan and Diego Garcia. The Teleradiology system supported by the hub in Yokosuka is operational. Tele-consultation systems in Dermatology and Othopedics have also been implemented and are operational. The Japan network along with other Akamai sponsored networks will serve as a models for other DOD, federal and private industry entities in the development of other multimedia healthcare intranets and their integration into the daily delivery of healthcare.