Validating the role of Mobile Telemedicine Package in Marine Time Teleconsultations

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Abstract
A small and light mobile telemedicine package is quipped with mobile satellite communications and can be used anywhere in the world except in polar zones. The system aims to establish telemedicine linkages between remote areas and specialized centers and also between disaster-stricken district and non- devastated district using satellite communications. The purpose of this study was to verify the role of mobile telemedicine package in marine time telemedicine teleconsultations between Bosemaru, a cruiser in Pacific sea and lifesaving emergency medical center of Tokai University in Japan.
Key Words: Mobile telemedicine package, Satellite Communications, Bosemaru

Background
Various telecommunications tools are currently investigated and utilized for remote telemedicine consultations [1]. Mobile telemedicine package is small, light and handy. It is designed for medical usage and connections to medical terminals are possible via wireless LAN. It is IP based and it can easily establish a flexible network. In this study we have studied the role of mobile telemedicine package in marine time telemedicine consultations via satellite connection between Bosemaru Cruiser at Pacific sea and Emergency Medical Center of Tokai University.

Material and Methods
Equipments
Characteristically this telemedicine package is small, light and handy. The package is suit case sized kit (51cm x 40cm x 22 cm), weighing 10 kg, that contains PC, satellite antenna and modem, equipped with satellite communications and wireless LAN.

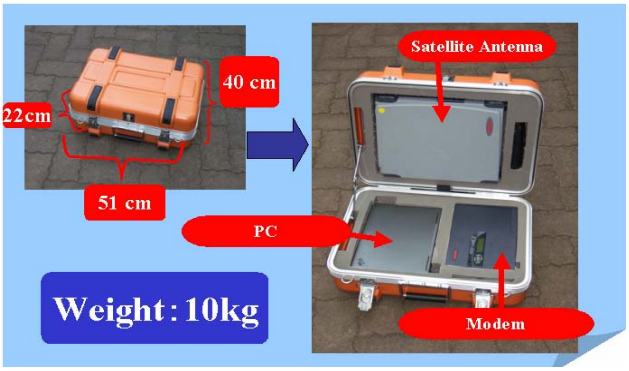

Fig. 1. Mobile Telemedicine Package

Procedure
Telemedicine consultations were made via satellite communication (INMARSAT). The standard data transfer rate was at 64kbps ISDN connection.

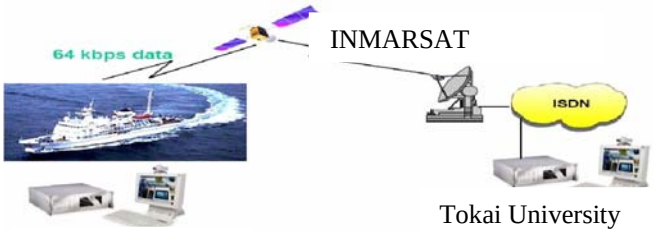

Fig. 2. Portable 64kbps satellite connection.

Results and Discussion
Using mobile telemedicine package, six video conferences were carried out via satellite connection between Bosemaru medical staff and Tokai University's hospital at Isehara city, Japan. Both the audio and video communications were of satisfactory level at transfer rate of 64kbps. It was possible to get the opinion of emergency room doctor including one for a sever motion sickness patient. Although the communication via satellite connections was satisfactory but the cost of communication was relatively high about US$ 250 per thirty minutes. One solution to reduce this high cost is Universal Service Fund (USF) for e-health services. In United States the role of USF has been extended to support cost communications services for schools, libraries and rural health care providers But in Japan USF only includes emergency call via voice, which is 110 and 119. There is strong need to include e-health applications by USF in Japan.

Conclusion
Mobile telemedicine package, equipped with satellite communications and the wireless LAN to support telemedicine communications can be shipped easily to boats and ships for remote marine time telemedicine consultations from anywhere in the world. To reduce the cost of remote teleconsultations there is strong need to cover e-health services under Universal Access Fund.

References
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