

IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)  
Mobile Satellite Communications and Navigation Technology (3)

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DESIGN OF AN ENHANCEMENT SYSTEM FOR PERSONAL SATELLITE COMMUNICATION

**Abstract**

Personal satellite communication(PSC) has applications ranging from sensitive information transmission to emergency communication in the cell network unavailable area. It is of particular interest because it has features such as high reliability, high mobility and independent from ground infrastructure. However, existing personal satellite communication technologies suffer from some inherent limitation in that the working hours of the personal terminal are not long enough and the communication could be affected by weather. Here, we propose a personal satellite enhancement system to transceive the data between satellite and personal terminal. The enhancement system, which is installed on the solar energy unmanned aerial vehicle, could provide multi-users' access and high data rate personal communication data link. We analyze the frequency planning, access control, bandwidth effectiveness and transmission delay of the enhancement system. The proposed system could reduce the complexity of personal terminal and the adverse effect of weather condition effectively. We anticipate that the proposed system could provide new ideas on improving the PSC user experience.