

SUPERBIRD realizes Satellite Remote Monitoring System

SCC Wins Order For The First Satellite System

Of Monitoring Illegal Dumping in Japan

On November 2003, Space Communications Corporation (SCC. Headquarters: Shinagawa, Tokyo. President: Masuyuki Annen) and its subsidiary, Seiryō Communications Inc. (SRY. Headquarters: Shinagawa, Tokyo. President: Tsutomu Kizawa) has constructed the first system of remote-monitoring illegal dumping via a communication satellite for Gifu Prefecture.

Illegal dumping continues to be a serious social problem in Japan, with Gifu Prefecture last year recording 151 complaints involving industrial waste and 1511 complaints involving general waste. Gifu Prefecture has attempted a number of preventative measures, such as nighttime and holiday monitoring, operating a waste Internet hotline and patrolling the skies over dumping sites by helicopter, but it remains difficult to catch illegal dumpers in the act.

Consequently, the Prefecture decided on an approach that is a first for Japan: set up a remote monitoring camera at illegal dumping sites and use an unmanned monitoring system that enables a security company to constantly monitor images of the site through the transponder of the communication satellite “SUPERBIRD,” which is owned by SCC. The system will be in operation from November and if it proves effective, the Prefecture will consider expanding its application.

The system will monitor illegal dumping 24 hours a day in real time. Monitoring equipment with a supersensitive camera will be set up in areas in the mountains of Gifu Prefecture where illegal dumping is frequent, and a security company contracted by the Prefecture will operate the monitoring cameras remotely, via satellite (Figure 1). The monitoring camera can be panned (horizontal rotation), tilted (vertical rotation) and zoomed by remote operation, and it also has an infrared radiation function for monitoring at night. If illegal dumping occurs, the camera can photograph faces and vehicle number plates, transmitting the image to the monitoring center of the security company via satellite at approximately two to three frames per second using the ML-JPEG compression method, JPEG compression method or Motion-JPEG compression method. The system can store images for approximately one month and enables search and playback of past images by specifying the time and date or using the abnormality log.

Gifu Prefecture’s illegal dumping Satellite Monitoring System is being constructed by customizing the DIRECWAY (DirecPC-VSAT) service provided by SCC since 2001, which is composed of the Very Small Aperture Terminal (VSAT^[1]) system developed by Hughes Network Systems in the United States, and is now being used for a range of purposes, for example as a corporate and gov-

ernment back-up communication line for emergencies and disasters, as a corporate intranet, for remote education, and for broadband video and audio distribution. Using satellite communications makes it fairly straightforward to construct a communications network even in small islands, mountainous or remote country areas that lack terrestrial communications infrastructure. That in turn makes possible remote, unmanned monitoring of not only illegal dumping of waste but also earthquakes, volcano activities, tidal waves without man 24 hours a day, as in this case.

Other municipalities in Japan are also experiencing growing problems with illegal dumping. Using the first Satellite Monitoring System as a model, SCC will actively approach these municipalities offering the satellite as a solution to the dumping problem.

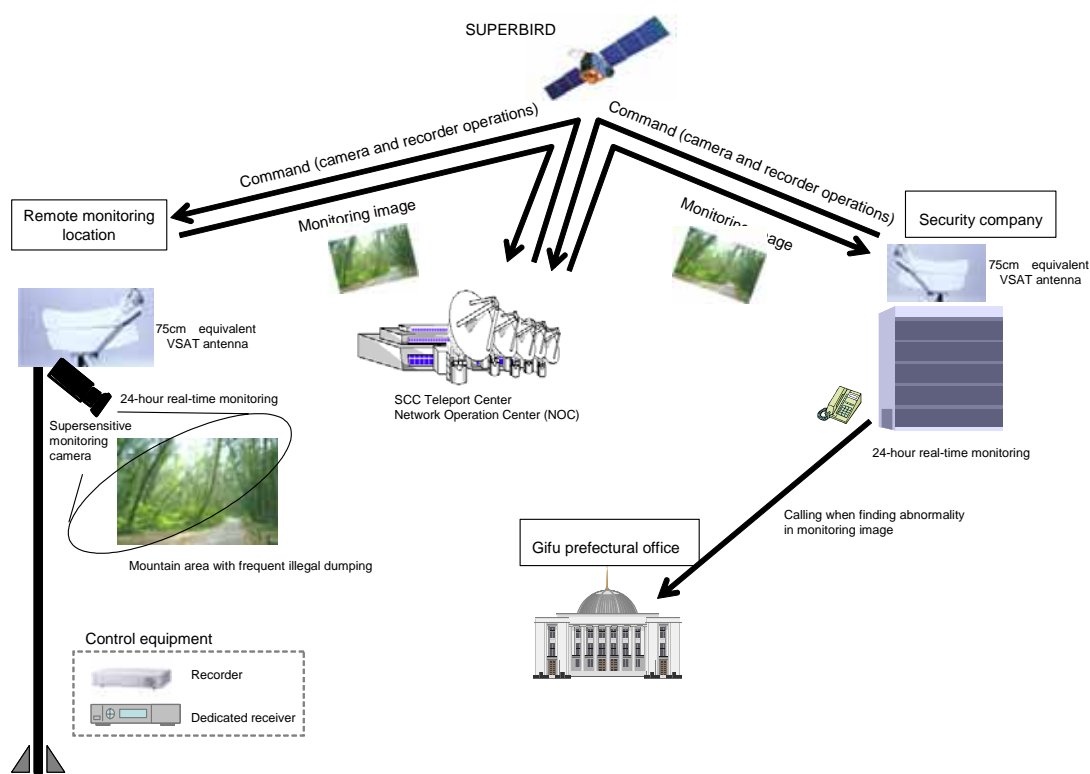


Figure 1: Satellite Monitoring System for Illegal Dumping of Waste in Gifu Prefecture

[1] VSAT (Very Small Aperture Terminal): A small transmission station for interactive satellite communications.