

66th International Astronautical Congress 2015

SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
Integrated Applications End-to-End Solutions (2)

Author: Mr. Avi GAL
Gilat Satellite Networks Ltd., Israel, avig@gilat.com

Mr. Yosy Hecht
Gilat Satellite Networks Ltd., Israel, Yosyh@gilat.com

REAL TIME DELIVERY OF “SITUATIONAL AWARENESS PICTURE” FOR RESCUE FORCES

Abstract

“In disaster and emergency situations, telecommunications can save lives.” (ITU). This ITU statement speaks for itself. “When disaster strikes, communication links are often disrupted”. Real time and accurate information is essential for effective rescue operations and can save human lives. Many efforts are being invested in gathering earth observation information, getting data from different sensors and analyzing the information to get a full situation awareness picture. It is of utmost importance that the rescue forces will get the full picture at the right time. Recent developments in satellite communication, including low profile tracking antennas and high performance MODEMs pave the way of proof of concept for bidirectional broadband communication that serves the first responders needs. Satellite communication on the move enables the first responders to be connected all the time even while they are on their way to the disaster area. This allows them to get the most updated situation awareness picture (that integrates downstream information with sensors data, GIS and most updated maps) in their vehicles. Complimentary terrestrial ad hoc communication relays this information to the other rescue vehicles. On the return channel, the communication allows the center to get the forces location at any given moment, to feedback real time data and video from the field to the center for further integration, analysis and updates. Satellite communication serves as backhauling for different terrestrial public safety communication including LTE and legacy. This paper describes the achievements of the RESCUE consortium (Israeli Academy and Industry) complimented by further developments. It describes the end to end solution architecture, the proof of concept that was demonstrated and outlines recommendations for further research and developments directions.