

Satellite Communications System in Preparation for Disaster

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SUMMARY

Satellite communications system is being recognized as the only communications measure at the time of large scale disaster such as great east Japan earthquake and tsunami on March 11, 2011, where a lot of terrestrial communications facilities were greatly damaged or destroyed and the communications services were not available.

NTT DOCOMO began WIDESTAR II mobile satellite communications service covering all of the Japan landmass and the maritime area around it in April 2010. WIDESTAR II is the evolved Japanese domestic mobile satellite communications system as a successor of WIDESTAR, and the service area is covered by four beams of the N-STAR c/d geostationary satellites. The new WIDESTAR II system provides all of the previous WIDESTAR services and expands data communications. Satellite base station equipment and satellite mobile stations were newly developed. The core node equipment was efficiently developed to add only the functions specific to the mobile satellite communications system and incorporates IMS (IP multimedia subsystem) and other general-purpose IP technology to commonly use the software in the mobile satellite communications system and 3G/LTE (Long Term Evolution) cellular system. For land mobile use, WIDESTAR II is expected to be used as a solution for data communications services on distant islands, in mountainous regions and in other such areas where cellular phone signals are not available as well as a means of communications for disaster response by local governments.

Wi-Fi interface is implemented by default to a recent communications terminal such as a smart-phone. It will be possible to provide Wi-Fi access environment and to use general-purpose Wi-Fi terminals at the place where the terrestrial data communications service is not available through the use of WIDESTAR II data communications service. This paper overviews WIDESTAR II and explains how WIDESTAR II can be used for disaster. In addition, the paper overviews NTT DOCOMO's system and service that can be used in preparation for disaster, and the effectiveness of satellite communications to apply to a mobile base station vehicle deploying for early disaster recovery and restoration is discussed.