EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Applications and Economic Benefits (5)

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IN ORBIT RESULTS OF THE NEXT GENERATION DISASTER MONITORING CONSTELLATION SATELLITE UK-DMC-2

Abstract

On the 29th of July 2009 Surrey Satellite Technology Ltd. UK (SSTL-UK) launched two new satellites based on the SSTL-100 platform that mark the start of the Next Generation Disaster Monitoring Constellation (DMC-NG). Alongside Deimos-1, which is developed for the Spanish company Deimos Imaging SL, UK-DMC-2 has been manufactured to secure data continuity and a new level of imaging output for SSTL's subsidiary DMC International Imaging Ltd (DMCii).

This paper describes the UK-DMC-2 mission, the technical design and the in orbit performance, focussing on the technical advancements made with respect to the original Disaster Monitoring Constellation launched in 2002-2005. The paper also looks at new applications for DMC data based on the improved quality of the measurements.

A number of newly developed units are described that fly on UK-DMC-2 to gain flight heritage and contribute to SSTL's evolutionary development approach such as an innovative GPS-receiver, enhanced sun sensors and a set of COTS heat pipes. New operational modes such as near real time imaging and downlink and a direct broadcast mode to multiple ground stations provides a substitute service for customers currently receiving Landsat data. Due to UK-DMC-2's wide 600+km swath, improved imagery GSD of 22 m, high downlink data rate of up to 80 Mbps and new near real time and broadcast operational modes it is an ideal space asset for high repeat large area coverage for a variety of applications such as precision agriculture, food security monitoring and rapid emergency response.