ABSTRACT

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Sustainable global monitoring: two new 20-metre satellites join the DMC constellation to significantly expand capacity.

Two new 20-metre class satellites, UK-DMC 2 and Deimos-1, launched into the Disaster Monitoring Constellation (DMC) in Spring 2009, add more than 10 million sqkm per day of enhanced imaging capacity to the constellation, increasing its overall capacity by a factor of four. The additional capacity and enhanced resolution of the wide swath optical sensors greatly extends the service offered through DMC International Imaging Ltd (DMCii) for disaster response and commercial imaging campaigns.

The improved SLIM-6 imagers maintain the 650km wide swath of the 1st generation DMC 32 metre gsd satellites, but achieve approximately double the pixel density.

The addition of X-band downlink and increased on-board power and data storage enable imaging to be carried out on almost every orbit, resulting in a much greater coverage. Together with the existing 4 DMC satellites the constellation has the capacity to deliver leaf-on leaf-off global monitoring for vegetation studies and classification.

The DMC constellation is effective at providing high resolution imaging of large areas in short timescales and, in addition to meeting the challenging requirements of precision agriculture, the DMC is regularly used by agencies monitoring major rainforests including the Amazon Basin and Congo for the active detection of deforestation.

This paper presents the in-orbit results from the new sensors, and their application in agriculture, forestry, land cover mapping as well as disaster response.