

EARTH OBSERVATION SYMPOSIUM (B1)
Future Earth Observation Systems (2)

Author: Ms. Stefanie Kohl

Surrey Satellite Technology Ltd (SSTL), United Kingdom, s.kohl@sstl.co.uk

Mr. Zeger de Groot

Surrey Satellite Technology Ltd (SSTL), United Kingdom, z.degroot@sstl.co.uk

Mr. Andrew Cawthorne

Surrey Satellite Technology Ltd (SSTL), United Kingdom, a.cawthorne@sstl.co.uk

Mr. Luis Gomes

Surrey Satellite Technology Ltd (SSTL), United Kingdom, L.Gomes@sstl.co.uk

Prof. Martin Sweeting

Surrey Space Centre, United Kingdom, m.sweeting@sstl.co.uk

THE FIRST SSTL 300S1 CONSTELLATION: 1-METRE RESOLUTION IMAGERY AT THE LOWEST
COSTS**Abstract**

Surrey Satellite Technology Limited's DMC3 mission is one of the most promising small satellite constellations to be launched in the next 18 months. Owned by Surrey Satellite Technology Limited's subsidiary, DMCii, the imaging capacity of the constellation is already leased to a commercial organisation and will be operated as a managed service. Built around three SSTL300S1 spacecraft, the constellation is adequate for high resolution mapping of vast areas of landmass by imaging strips with a length of up to 4000 km. Compared to its predecessor SSTL300i which was first launched in 2011, the onboard storage and downlink capability of the 300S1 spacecraft has increased the maximum strip length by 75%. The image product is ideal for applications such as monitoring land and water resources, precision agriculture, urban development, disaster monitoring and disaster analysis. The imager used in the 300S1 spacecraft is a modified Newtonian telescope which gives the best optical image quality within the constraints of the platform structure and launch accommodation. The focal plane makes use of a Time Delayed Integration sensor which gives a good Signal-to-Noise Ratio for low albedo targets over extended periods of time independent of seasonal variations. Compared to its international competitors the DMC3 constellation has the best ratio of cost per square kilometre of image. An SSTL 300S1 satellite has a fast production time around only 24 to 30 months from kick-off to launch and gives the platform owner affordable, private and high priority access to satellite imagery.