

SMALL SATELLITE MISSIONS SYMPOSIUM (B4)
Design and Technology for Small Satellites (6A)

Author: Mr. Philip Davies

Surrey Satellite Technology Ltd (SSTL), United Kingdom, philip.davies@deimos-space.com

Dr. Mike Cutter

Surrey Satellite Technology Ltd (SSTL), United Kingdom, m.cutter@sstl.co.uk

Mr. Alex da Silva Curiel

Surrey Satellite Technology Ltd (SSTL), United Kingdom, a.da-silva-curiel@sstl.co.uk

Prof. Martin Sweeting

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

MAXIMISING RE-USE THROUGH A MODULAR RANGE OF SMALL SATELLITE PLATFORMS

Abstract

There is a growing interest in the provision of low cost small platforms for Earth Observation and other applications with relatively short delivery periods and with the capacity to carry single payload modules for dedicated missions. This applies to both the Earth science missions, typically funded through the international space agencies, such as ESA, and commercial operators. Example missions included the ESA Sentinel 5 Precursor Mission, many of the candidate entries for the current ESA Earth Explorer 8 announcement of opportunity call, high resolution imaging missions now being developed for the emerging nations and constellations such as RapidEye.

Over the last 10 years SSTL has extended its capabilities of small satellite provision from the standard 100kg class of platforms for the Disaster Monitoring Constellation programme to platforms that are in 150kg class such as the platform used for the 5 RapidEye satellites and the DMC+4 mission. Through the NigeriaSat-2 programme SSTL has now developed a 300kg platform with payload mass carry capacity in excess of 100kg. Extended variants of the 300kg platform are now being designed for missions with launch mass up to 500kg.

To date SSTL has launched 34 satellites including the 600kg GIOVE-A Galileo platform and has a suite of options available for potential customers offering high pointing accuracies and agility, high downlink data rates and long operation life times, all at exceedingly competitive prices and short delivery periods.

Whilst the masses of these platforms cover quite a different range of missions the electrical architecture is common and allows significant reuse of equipment across the range of platforms.

This paper will summaries our approach to reuse and the consequent portfolio of platforms that are available for Earth observation as well as space science missions, indicating the scope that is available to adapt the new and heritage SSTL systems to the customers requirements.