

15th SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
Small Satellite Operations (3)

Author: Dr. Peter M. Allan
Rutherford Appleton Laboratory, United Kingdom, peter.allan@stfc.ac.uk

Mr. Ian Raper
EADS Astrium Satellites, United Kingdom, ian.raper@airbus.com
Dr. Jolyon Reburn
Rutherford Appleton Laboratory, United Kingdom, jolyon.reburn@stfc.ac.uk

THE INTERNATIONAL SPACE INNOVATION CENTRE: EARTH OBSERVATION HUB

Abstract

The International Space Innovation Centre (ISIC) has been created in response to the UK government's Innovation and Growth Strategy for Space. ISIC is a partnership of the public and private sectors with the aim of creating an environment where innovative applications will be developed. ISIC is based on a hub and spoke model. The central hub is located on the Harwell Campus, which contains the Rutherford Appleton Laboratory. The aim is to have a critical mass of space-related activities on the campus, such that new ideas are constantly being generated. The hub will have links to facilities at other locations, encouraging the development of applications that require a diverse range of capabilities.

The first phase of ISIC has created three core facilities; the Earth Observation Hub, the Visualisation Centre and the Security and Resilience Unit. These facilities have been built in an impressively short amount of time by the partner organisations that form ISIC. This paper will describe the Earth Observation hub in some detail, as well as the links to the other facilities.

The Earth Observation Hub provides a cost effective means of controlling spacecraft and processing the data from them. Surrey Satellite Technology Ltd is a world leading manufacturer of small satellites so it is important to have the capability to operate spacecraft that use their communication protocols. Equally, the international standard CCSDS protocols are used on hundreds of missions and the number is growing rapidly. The solution adopted by ISIC is to support both types of protocols within the basic control system. It is a basic requirement of the Earth Observation Hub to be able to support multiple missions. In order to do this in the most cost effective manner, we have incorporated a considerable degree of automation into the basic design. The payload data ground system is hosted by Astrium-GEO Information Services and is a parallel system to the UK-PAC which they operate. The overall system provides an end-to-end capability within the UK to operate missions of all sizes.