SMALL SATELLITE MISSIONS SYMPOSIUM (B4)
Small Space Science Missions (2)

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THE UK'S TECHNOLOGY DEMONSTRATION SATELLITE

Abstract

Many platform subsystems and payloads fail to be selected for new missions principally because they lack in-orbit flight heritage. This results in a slow take up of new technologies and compromises the marketing potential of supplied subsystems. There is thus a strong interest in the provision of in-orbit test beds for the qualification of new technologies, both hardware and software. Also, in a rapidly changing technical environment, it is crucial that these in-orbit test beds are available at low cost so that frequent opportunities can be provided for suppliers to evaluate their subsystems in a timely manner.

A joint UK government/industry group known as the "Innovation Growth Team" recently highlighted the need for small space missions to demonstrate new space technologies in advance of their operational use.

In the latter half of 2009 a study was performed to assess a low-cost apporach to providing such a mission. The mission concept for "Techdemosat" was thus born.

Techdemosat will be based on the SSTL-150 platform which formed the basis for the DMC+4 mission launched in 2005 and the five satellite RapidEye constellation launched in 2008. The SSTL-150 is, itself, an enhanced version of the SSTL-100 platform used for the disaster monitoring constellation and other missions in the 100kg class.

The paper will: - describe the platform in terms of its mechanical and electrical architectures - give an overview of the equipment that will be flight-tested by the mission - give a programmatic overview - look at the launch scenarios - look at the operational concept - look to the future techdemosat missions that could follow-on from this one