

12/10/2001

Constellation of satellites in the works: Adviser

Fauziah Ismail

MALAYSIA is expected to be the first country to launch a constellation of Near Equatorial Low Earth Orbit (NeqO) satellites if plans by the Astronautic Technology Sdn Bhd (ATSB) to do so in the next two years materialise. ATSB, the wholly-owned government space research and development company, plans to launch up to eight such satellites in the equatorial belt, with the first few within the Eighth Malaysia Plan (2001-2005) period.

ATSB director Prof Datuk Dr Mazlan Othman said the company has initiated the design and development work of the satellites.

The NeqO satellites will provide earth observation and digital communication services that will best meet the requirements of multiple users in Malaysia including intelligence, health, agriculture, natural resource and environmental management and education sectors.

"The constellation architecture will ensure that earth imaging in the equatorial region, particularly over Malaysia, will be optimised," she said after a reception to commemorate the first anniversary of Malaysia's first micro-satellite, TiungSAT-1, at the Langkawi International Maritime and Aerospace 2001 show in Langkawi yesterday.

At the reception, Kedah Menteri Besar Datuk Seri Syed Razak Syed Zain represented Prime Minister Datuk Seri Dr Mahathir Mohamad in launching a book titled "TiungSAT-1: From Inception to Inauguration".

ATSB is a research and development company involved in the design and development of space qualified systems based on advanced and innovative technologies. It develops its capability for satellite engineering through international cooperation and by utilising interdisciplinary experts. It successfully manufactured and launched TiungSAT-1, which is Malaysia's first microsatellite.

Mazlan said the NeqO project would provide impetus to acquire the transfer of technology and satellite expertise, and enable Malaysia to establish its own new satellite services.

"This would encourage the development of industrial infrastructure, keeping in consonance with the present and future demands of the industries," she said.

She added that the project implementation and technology transfer strategies to be adopted will ensure that all related government agencies and various sectors of industry will be deeply involved in the technology development and will benefit from the services offered by the constellation.

"The data obtained through the NeqO satellites will also benefit other countries in the equatorial belt, which are mostly developing that frequently experience natural and man-made disasters. The constellation allows Malaysia the opportunity to establish close cooperation with them during design, manufacture and operation," she said.

Mazlan also said there are also opportunities for a joint venture on the NeqO satellites as Brazil and Indonesia are also planning to launch satellites in the equatorial belt.

The company is also working with SaTReCi Co Ltd of South Korea on a medium aperture camera (MAC), which is an imaging payload for small remote sensing satellites, and with AeroAstro of the US on the small payload orbit transfer space vehicle (SPORT), which will be used to transfer the NeqO satellites from one common pre-launched orbit into another custom or

specific orbit.

ATSB's collaboration with SaTReCi on the MAC entails system design, module development and assembly, integration and test. ATSB engineers have been sent to South Korea to undertake the task. The programme aims at providing Malaysian engineers and scientists with experience as well as expertise in the development of advanced optical earth observation system for small satellites.

SPORT, meanwhile, is aimed to be a flexible, affordable and highly reliable orbit transfer vehicle ideally suited to deploy a wide range of spacecraft into a variety of orbits. By utilising SPORT, NeqO satellites can be launched through a variety of launch vehicles as low-cost piggyback passengers.

During launch, SPORT will be attached to the launch vehicle. On separation from the launch vehicle, SPORT will carry the satellite from its initial release orbit to the desired orbit.

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