

Date

Tuesday 17 July 2007

Title of session

Workshop 5 - Reference Frameworks and Active Networks

Name of presenter/chair

Chair: Neil Ackroyd, Director of Data Collection and Management, Ordnance Survey

Presenter: Soh Kheng Peng, Chief Surveyor, Singapore Land Authority

Rapporteurs

Jenny Harding, Ordnance Survey and Nicholas Hutchings, Defence Geographic Centre

Presentation title: GPS reference station infrastructure - Implementation and applications in Singapore.

The presentation closely followed the detailed 27 PowerPoint slides.

The Singapore Land Authority was formed in 2001 from four earlier organisations, including the merger of the Land Registry and the Survey Dept. Existing programmes are being modernised to lead to the new cadastral survey system, SVY21. A leading component of SVY21 is the Integrated Survey Network - 4,000 markers based around the Singapore satellite positioning Reference Network (SiReNT) which consists of five reference stations at the centre and four cardinal points of the main island of Singapore. ISN and SiReNT data are used for a great variety of purposes; examples include planning of taxi routes and bus fares; tracking of hazardous materials and homeland security. Features of particular significance for Singapore are land reclamation and a consequent need for frequent hydrographic surveys. A large proportion of the country's population live in high rise buildings, their construction is both a use and a problem for the GPS network.

In summary, Chairman Neil Ackroyd emphasised that the use of GPS now underpins effective cadastre. Singapore's successful experience challenges other countries to follow suit.

Questions	Answers
<p>Gottfried Konecny (Saudi Arabia) wondered why data is collected using Trimble but distributed via the Internet rather than GSM. He also queried the use of both SiReNT and the 4,000 points.</p>	<p>Soh Kheng Peng stated that this was a simplification. GPRS and the Internet are both used.</p>
<p>Haim Srebro (Survey of Israel) pointed out that in Israel a rule has been established that all new survey points must be linked to a permanent survey station.</p>	<p>Soh Kheng Peng stated that the same rule applies in Singapore.</p>