

ACMA takes radiocommunications expertise to Global Navigation Satellite Systems workshops

ACMA joined participants from state and Australian Government agencies, equipment vendors and industry specialists at Spatial Sciences Institute workshops on Global Navigation Satellite Systems (GNSS) in Cairns and Brisbane during May 2009. A high level of interest in the subject was reflected in a turnout of more than 50 delegates at each workshop.

Attendees were keen to learn about recent developments and applications of GNSS for the land surveying industry. The Global Positioning System (GPS) and Real Time Kinematic (RTK) system are forms of GNSS that are now primary tools used by the surveying, civil works, mining and agricultural industries for planning and mapping.

These systems achieve a high degree of technical precision. Location coordinates being read from a GPS can vary from the true location by distances up to several metres. A surveyor can increase the precision of the coordinates of the land being mapped to within several millimetres by adjusting readings presented by a GPS with correcting data provided by a radiocommunications beacon transmitter. This system is sometimes referred to as differential GPS (DGPS). The transmitter is sited at a known reference location close to surveyors and machines roving over a project site. On large project sites, the reference transmitter may be relocated several times as the work progresses.

ACMA's Field Operations Section has responded to several complaints about interference involving reference transmitters in recent years. ACMA welcomed the opportunity for Gary Ryan from ACMA's Interference Management Section to present information about radiocommunication licensing options, interference avoidance practices and other related information as a proactive, educative approach to raising awareness and reducing future complaints.

Operation of DGPS-type transmitters must be authorised by a radiocommunication licence issued by ACMA. The licensing arrangements provide some degree of flexibility according to the intended operation of the transmitter. Licences can be issued for a transmitter to operate from a fixed site, which allows coordination of the radiofrequency being used by the transmitter at that site and offers a high level of protection from interference from other services.

Alternatively, and most commonly, DGPS-type transmitters that are leased to different operators for short periods, moved from project to project or moved regularly around a project site can be authorised by an 'ambulatory'-type licence. These licences authorise operation of a single frequency service anywhere in a wide area, with conditions that mandate low power levels. Operators must also be aware that a frequency allocated with a licence may already be in use by other licensees in a particular geographic area, and that the ambulatory licence does not provide protection from interference in this situation. In addition, the ambulatory licensee must avoid operating the transmitter if it will cause interference to those other services.

Raising awareness among industry participants about these matters is a key strategy toward reducing the incidence of interference involving DGPS and RTK systems. Workshop attendees were also made aware of the current review of the 400 MHz band, including the call for comment from spectrum users.

Further information about radiofrequency spectrum and licensing matters is available on the ACMA website www.acma.gov.au (go to For licensees & industry: Licensing & regulation > Radiofrequency spectrum).



1: GARY RYAN FROM ACMA BEING INTRODUCED BY MATT HIGGINS (QLD DEPT NATURAL RESOURCES AND WATER) AT THE GNSS WORKSHOP.



2: GNSS WORKSHOP PRESENTERS: GARRY CISLOWSKI (QLD DEPT ENVIRONMENT AND RESOURCE MANAGEMENT), GARY RYAN (ACMA), MATT HIGGINS (QLD DEPT NATURAL RESOURCES AND WATER), GARY JOHNSTON (GEOSCIENCE AUSTRALIA).
3: GARY RYAN OPENING THE ACMA PRESENTATION.

