

The Course

The two day short course on “Advanced RTK: Concepts and Operations” is intended to give an update on the latest developments in Real-Time Kinematic (RTK) GPS techniques. The typical in engineering survey operations and field equipment automation have only been addressed in the last decade with the development of RTK techniques. Over the next 5 years there will be a number of dramatic developments in GNSS technology and methodologies that will make RTK techniques even more productive high accuracy users.

Who Should Attend

This course is intended for those interested in RTK-GPS techniques. These include surveyors/geomatic engineers, civil engineers, system integrators responsible for the implementation of RTK-GPS in farming and construction equipment, GIS professionals, and anyone with an interest in high accuracy GPS.

Course Presenters

Chris Rizos is a professor and head of the School of Surveying and Spatial Information Systems (SSIS), The University of New South Wales (UNSW), Sydney. He graduated with a B.Surv. and a PhD from UNSW in 1975 and 1980 respectively. Chris has been researching the technology and high precision applications of GPS since 1985. He has published over 200 papers, as well as having authored and co-authored several books relating to GPS and positioning technologies. He is a fellow of the Australian Institute of Navigation, a fellow of the International Association of Geodesy (IAG), chair of the IAG’s Commission 4 “Positioning and Applications”, member of the Council of the U.S. Institute of Navigation, a member of the Australian GNSS Coordination Committee, and a member of the Governing Board of the International GPS Service. Chris is also the program manager within the CRC for Spatial Information responsible for research on permanent GPS station methodologies and systems.

Craig Roberts is a lecturer in the School of SSIS, UNSW. Craig graduated from the University of South

Australia with a B.Surv. in 1988 and began his career as a private surveyor in Adelaide. He has since worked as a Geodetic Engineer at UNAVCO (University NAVSTAR Consortium), Colorado, USA, involved with GPS for geodynamic studies in Nepal, Ethiopia, Argentina and Indonesia. Craig was most recently a lecturer at RMIT University in Melbourne, where he was involved in several projects relating to Victoria’s GPSNet. His current research interests include continuously operating reference station (CORS) infrastructure, notably SydNet, atmospheric modelling in support of CORS networks, and GPS-based deformation monitoring.

Thomas Yan is a research assistant in the School of SSIS, UNSW, currently implementing the Sydney CORS network known as SydNet. He graduated with a B.E. (Elect. Eng.) in 2002. Thomas is currently pursuing a M.E. (by research) into the telecommunications aspects of CORS networks and RTK-GPS systems.

Program

The course is conducted in four daily time slots, 9.00-10.30am, 11.00-12.30pm, 1.30-3.00pm and 3.30-5.00pm over a two day period. There will be ample opportunities for discussion and demonstrations of GPS equipment by vendors. Morning and afternoon tea/coffee and a light lunch will be provided. Extensive workshop materials will be made available to participants.

Day 1

- Principles of carrier phase-based GPS positioning
- Impact of baseline length on ambiguity resolution for single-reference station positioning
- Introduction to RTK-GPS operations and constraints
- Planning, standards & specifications and quality control procedures for RTK
- Communications issues, including comms link choice, data rates, internet-based correction transmissions, data formats (RTCM, CMR, etc.)

Day 2

- The impact of Continuously Operating Reference Station (CORS) networks
- Introduction to the SydNet CORS infrastructure
- Network-based RTK, including VRS and FKP implementations
- Demonstrations of current RTK-GPS systems by equipment vendors

About the School of Surveying & Spatial Information Systems

The School of Surveying & Spatial Information Systems has made a strong commitment to provide advanced research training and graduate education of students and professionals. The School’s strengths are in GPS and wireless positioning technology, image processing, digital photogrammetry and radar remote sensing for geodetic applications.

The School is currently assisting the NSW Department of Lands in the installation of the “SydNet” GPS network across the metropolitan area of Sydney.

Venue:

This course will be held at the
School of Surveying and Spatial Information Systems, University of New South Wales.

Tel: 02 9385 4182

Fax: 02 9313 7493

Accommodation:

Participants will need to arrange their own accommodation. Details of accommodation options around UNSW can be obtained by contacting Maria Ponce on 02 9385 4182, or m.ponce@unsw.edu.au.

