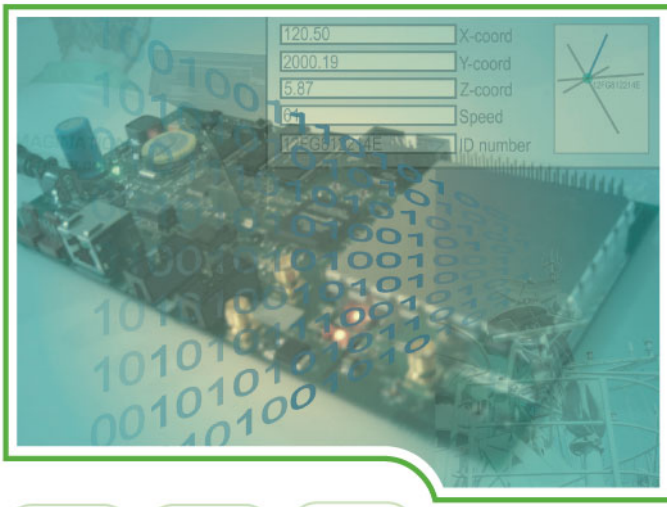

NICTA

Engineering Aspects of GPS Including Receiver Design

4–5 August 2009

Presenters: A/Prof Andrew Dempster

Brisbane

Teaching Arrangements:

The course will be conducted from 9.00am to 5.00pm. Morning tea will be available at approximately 10.00am to 10.30am, lunch from 12.30pm to 1.30pm and afternoon tea at approximately 3.00pm to 3.30pm.

Registration Fee:
AU$1320 (including GST)

Group and PhD student discounts available. Please enquire.

How to Register

To register fill out the registration form (overleaf) and

- fax it to +61-8-8343-8711 or
- scan and email it to industryeducation@nicta.com.au

Cancellation Policy

At least **4 weeks** notice is required for cancellation of a place in a short course for full reimbursement. If cancellation is later than 4 weeks then the place can either be given to another person or the registrant can be provided with a credit towards other NICTA training.

For details of further courses please see our web site: www.nicta.com.au/short_courses or contact NICTA Industry Education Manager.

About *Engineering Aspects of GPS Including Receiver Design*

A **two-day** course covering the basics of the Global Positioning System (GPS), suitable for the novice as well as professionals that deal with GPS technology on a daily basis. Particular attention will be given to the fundamentals of GPS signals, measurement data processing, hardware, and augmentations. The course will cover the current and future system, GPS signals and measurements, satellite constellation, positioning principles, coordinates and reference systems, measurement errors and biases, data processing strategies, accuracy and quality control issues, high precision techniques such as DGPS and baseline determination using carrier phase, receiver hardware components and interfacing to other devices, current and future applications.

Target Audience

This course is intended for those who wish to gain a thorough overview of all aspects of GPS technology and its applications, including engineers, scientists, students, technicians and managers.

Brief Course Outline

Background to Positioning:

- Satellite coordinate & datum systems: ITRS, WGS84 and GDA94;
- Heights and map coordinates;
- The GPS control, space and user segments;
- User issues: receiver development, SPS and PPS, system operations.

Introduction to GPS Positioning:

- GPS signals and measurements;
- Introduction to the GPS receiver, NMEA output and associated integration issues;
- GPS errors and biases, and their impact;
- Positioning principles and scenarios.

Accuracy and Augmentation:

- GPS performance: accuracy, availability, integrity;
- Principles of differential GPS (DGPS);
- DGPS services and augmentation strategies.

Applications and Trends:

- Land, sea and air applications;
- GPS and infrastructure;
- GPS modernization.

Antennas, RF front ends, Digital hardware, Correlators, Special receivers.

Presenter: A/Prof Andrew Dempster

Associate Professor Andrew Dempster is Director of Research in the School of Surveying and Spatial Information Systems, University of New South Wales. He has taught postgraduate courses in GPS for 12 years for the University of Westminster in the UK, and for industrial clients such as Nokia and EADS Astrium, manufacturers of satellites for the new Galileo system. He worked for several years for Auspace Limited in Canberra, as project manager and system engineer on a project developing Australia's first GPS receiver. He is named on four global patents arising from this technology. He has a PhD from Cambridge in signal processing structures for VLSI, and a M.Eng.Sc. and B.E. from UNSW.

About NICTA and Short Course Program

National ICT Australia (NICTA) is Australia's ICT Centre of Excellence and was established to drive innovation through high quality research, research training and technology transfer. As a world-class research institute NICTA uniquely combines excellence in research, education, commercialisation and collaboration. We are working to ensure that Australia is well placed to benefit from the significant opportunities that ICT research delivers.

NICTA is funded by the Australian Government as represented by the Department of Communications, Information Technology and the Arts and the Australian Research Council through *Backing Australia's Ability* and the ICT Centre of Excellence program. NICTA members are the Australian Capital Territory Government, the New South Wales Government, the University of New South Wales and the Australian National University.

NICTA short courses offer scientists, engineers and managers technical training with a leading edge in areas such as telecommunications, transport, security, defence, logistics, e-government, mining, finance and biotechnology.

There will be ample opportunities for discussion and questions and answers. Morning and afternoon tea/coffee and a light lunch will be provided. Extensive workshop materials will be made available to participants.

How to register

Please complete the registration form below and

- Fax it to +61–8–8343-8711 or
- Scan and email it to industryeducation@nicta.com.au.

Send the form as soon as possible to secure your place.

For further information please contact
Anne-Marie Eliseo
Industry Education Manager
Telephone: +61–8–8343-8710
Email: anne-marie.eliseo@nicta.com.au

Registration Form and Tax Invoice* ABN 62 102 206 173

*Upon completion of this form, including the relevant payment, this form will become a Tax Invoice.

Please register me for Engineering Aspects of GPS Including Receiver Design on 4-5 August 2009.

PLEASE PRINT Date:

Title: First Name: Surname:

Position: Organisation/Division:

Postal Address:

Telephone No: Facsimile No: Email:

Dietary preference:

Course Fees: ☐ Full fee: AU$1320 (incl. GST)
(Register before **21st Jul, 2009**.)

Method of Payment (please tick below):

☐ Cheque (payable to National ICT Australia Ltd)
Forward the cheque and a copy of THIS registration form to:
Anne-Marie Eliseo, Industry Education Manager, NICTA, Innovation House, First Avenue, Mawson Lakes SA 5095, Australia.

☐ Credit Card: Credit Card No.: Expiry Date:

☐ Visa ☐ Master Card Name on card:

Amount: AU$ Signature: ☐ Tick if receipt required

Email address of card holder:

☐ Electronic Funds Transfer
Please advise by email to Annette Van Bramer
annette.vanbramer@nicta.com.au
when payment is made

BANK	Commonwealth Bank of Australia
ACCOUNT NAME	National ICT Australia Limited
BSB	062 900
ACCOUNT NUMBER	1032 4576
REFERENCE NUMBER	040809

FAX the form to + 61 – 8 – 8343 8711 or EMAIL it to industryeducation@nicta.com.au