



# Tactical Data Information Links (TADILs)

9–10 February 2010

Presenter: Mr Howard Harvey

Holiday Inn, Potts Point, NSW

## 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)

**Early bird fee: AU\$1057 (incl. GST)**  
if registered by Dec 1<sup>st</sup>

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](mailto: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](http://www.nicta.com.au/short_courses)  
or contact the NICTA Industry Education Manager.

## About Tactical Data Information Links (TADILs)

This **two-day** course covers the principles and the technology of Tactical Data Information Links (TADILs). It includes a historical perspective, with a brief introduction to Link-4A, an introduction to Link-11 and a detailed introduction to Link-16, principles of VMF, Link-22, Satellite TADILs and CEC. The course studies data links and the equipment required from engineering and capability aspects, rather than as an introduction for TADIL operators.

### Brief Course Outline

#### Introduction to TADILs

**Link-4A:** A brief introduction; Basic principles; Automatic Carrier Landing System (ACLS); Carrier Aircraft Inertial Navigation System (CAINS); Capabilities and Limitations; Timeslots; Message structure.

**Link-11:** Overview; Tactical Data System; Encryption; Data Terminal Set; Radios for Link-11; Conventional Link Eleven Waveform (CLEW); Single Tone Link Eleven Waveform (SLEW); Data Construction; Data Terminal Set Modes; Net Cycle Time (NCT); Net Efficiency; Doppler effects; Link-11 via satellites.

**Link-16:** A brief introduction; Capabilities; Time Slot Blocks (TSBs); Message Construction; Net synchronization; Frequencies and Interference Protection Feature (IPF); Range Extension by Relay; Time Slot Reallocation (TSR); Precise Participant Location and Identification (PPLI); Link-16 Enhance Throughput (LET).

**VMF:** Derivation from the Link-16 standard; VMF Message Catalogue; Header Layer; Bearer Layer; ASMTF and XML comparisons; VMF Syntax.

**Video on Link-16:** Link-16 capacity; Video stream bandwidth; Compression; Impact on image quality; Impact on Link-16 services; Demonstration of bit errors.

**Link-22:** Introduction; The NILE project; Overview; Timeslots and Minislots; Word Structure; TDMA process.

**Satellite TADILs:** Main modes of communications via satellites; Geosynchronous vs. Low Earth Orbit (LEO); Satellite limitations; Link-11 via satellite; Satellite TADIL-J, JRE; STDL.

**Data Link Integration Issues:** Factors influencing integration options; Impact on future support.

**Cooperative Engagement Capability (CEC):** A brief introduction; CEC concepts; Cooperative Engagement; Cooperative Target Resolution; Composite Tracking.

#### Concluding Discussion, Course Review

### About the Presenter: Mr. Howard Harvey, Haoi Technologies.

**Mr Howard Harvey** has recently retired after 40 years at DSTO, Edinburgh, SA. He received his B Technology (Electronic Engineering) from the South Australian Institute of Technology (now UniSA) in 1971. He developed a range of applications for microprocessing systems both embedded and as PC-based applications. His involvement with avionics since 1983 has included the PC-9 trainer, updates to the F/RF-111C, P-3C, F/A-18 and more recently with the Australian Wedgetail AEW&C. He has worked with engineering aspects of TADILs since 1995 with emphasis towards capability and integration on the AEW&C and other ADF platforms. He was the DSTO representative on the ADF Data Link Working Group for 7 years.

## 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](mailto: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](mailto: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 Tactical Data Information Links (TADILs) on 9-10 February 2010.**

PLEASE PRINT

Date: \_\_\_\_\_

Title: \_\_\_\_\_ First Name: \_\_\_\_\_ Surname: \_\_\_\_\_

Position: \_\_\_\_\_ Organisation/Division: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Telephone No: \_\_\_\_\_ Facsimile No: \_\_\_\_\_ Email: \_\_\_\_\_

Dietary preference: \_\_\_\_\_

Course Fees:  Early bird fee: AU\$1057 (incl. GST)  
(Register before **Dec 1<sup>st</sup>**.)

Full fee: AU\$1320 (incl. GST)  
(Register before **Jan 25<sup>th</sup>**.)

### 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 Ave, 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

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Electronic Funds Transfer

**Please advise by email to Annette Van Bramer**  
[annette.vanbramer@nicta.com.au](mailto:annette.vanbramer@nicta.com.au)  
**when payment is made**

BANK	Commonwealth Bank of Australia
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- Phone NICTA's Industry Education Manager on +61 8 8343 8711.