

# Introduction to Positioning and Survey

28th August 2008  
Parmelia Hilton, Mill Street, Perth



## Programme

**08.15 Registration**

**08.30 Introduction**

**08.45 SESSION 1 - GEODESY and POSITIONING PRINCIPLES**

### Geodesy

- \* Coordinates - Geographical - Grid - Cartesian \* Ellipsoids \* Horizontal Datums
- \* Datum Transformations \* Vertical Datums \* Geoid \* Projections and Grids

**09.40 Positioning Principles**

- \* Range-Range \* Angular \* Range-Bearing \* Pseudo Range \* GPS principles \* Precision
- \* Reliability \* Least Squares Adjustment

**10.25 Tea/Coffee**

**10.40 SESSION 2 - POSITIONING TECHNOLOGY**

### Surface Positioning

- \* History of Surface Positioning Radio Waves \* Principles \* Frequency and Range \* Triangulation
- \* GPS \* GPS Error Sources \* DGPS positioning (Code Phase/Carrier Phase)
- \* Transmitting Corrections \* WAS, SA, RTK \* Correction & Subscription Service

**11.35 Vessel Dynamics**

- \* Centre of Gravity \* Stability \* Pressure Point \* Turning of Vessels \* Squat
- \* Magnetic Compass \* Gyro Compass \* Attitude Sensors \* Attitude Sensor Calibration
- \* Inertial Navigation Sensor

**12.15 Lunch**

**13.00 Underwater Positioning Technology**

- \* USBL \* LBL \* Metrology \* ROV \* INS

**13.55 SESSION 3 - OVERVIEW OF OTHER SURVEY TECHNIQUES**

### Tides and Currents

- \* Tide Measurement \* Current Profiling \* Sound Velocity Profiling \* Prediction \* Temp Salinity

**14.25 Bathymetry and Engineering Geophysics Systems**

- \* SBES \* MBES \* SSS \* SBP \* Magnetometer \* ROV mounted vs AUV

**15.00 Tea/Coffee**

**15.15 Accuracy, Resolution and Error Sources - Roger Loweth, RPS**

- \* Coverage and Resolution \* Positioning Accuracy of survey data \* Error Budgets, Total Propagated Error

**15.45 Survey Data Processing - Martin Watson, Fugro Survey Pty Ltd.**

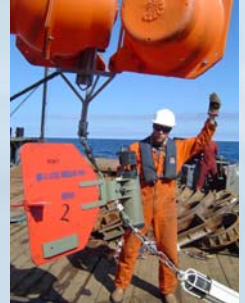
- \* Validation \* Tide Correction \* Interpolation \* Data Modeling - Gridding and Thinning and Countouring
- \* Data Presentation/Visualization

**16.15 SESSION 4 - CASE STUDIES**

**Bayu Undan Installation - Ken Eddy, Fugro Survey Pty Ltd.**

**Angel Installation - Peter Wademan, Woodside Energy Ltd.**

**17.15 Networking over drinks & canapes.**



# Registration Information

To register, either e-mail the information required on the registration form to [perthevents@sut.org](mailto:perthevents@sut.org) or fax the completed form to + 61 (0) 8 9204 3826

## Registration Fees

SUT Members - \$495.00 Inc. GST

Non Members - \$550.00 Inc. GST

**Fee includes - A copy of the Handbook of Offshore Surveying - Book One - value \$200**

All refreshments, CD containing PDF's of the main presentations.

## Preferred Payment Methods:

**Credit Card:** Mastercard, Visa or AMEX ONLY. We cannot accept payment by any other card.

**Cheque:** Australian Dollar only, made payable to The Society for Underwater Technology  
Send to, SUT, PO Box 1107, Kalamunda, WA, 6076

Please make sure you reserve a place by e-mail or fax before sending payment.

## Joining Instructions

Joining instructions will be e-mailed to each registered delegate.

---

## Registration Form

Please e-mail details to [Perthevents@sut.org](mailto:Perthevents@sut.org) or fax the completed form to 61 (0) 8 92043826

SUT Member No. \_\_\_\_\_

Please tick to indicate your preferred payment method:

Credit Card \_\_\_\_\_ (Visa or MasterCard) Cheque \_\_\_\_\_ Invoice (PO No.) \_\_\_\_\_

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Phone no. \_\_\_\_\_ E-mail address (s) \_\_\_\_\_

Credit Card No: VISA or MASTER CARD ONLY. \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Exp. \_\_\_\_\_ / \_\_\_\_\_ Security no \_\_\_\_\_ (last 3 digits on the back of your card)

Name on the card \_\_\_\_\_

Billing Address if not as above \_\_\_\_\_

Amount to be charged \$ \_\_\_\_\_ Signature \_\_\_\_\_