

# Subsea Awareness Course

3rd–7th February 2014

Parmelia Hilton Hotel (Karri Room)  
Mill Street, Perth, Western Australia

This five-day Course has been designed to be suitable for contractors, engineers, operators and those new to the offshore industry, those transferring from other disciplines within the industry and those who have worked in subsea previously but would benefit from a refresher course and exposure to the latest technology.

Whilst most of the course will be presented in a ‘classroom’ environment, the sessions will be interactive, with the opportunity to ask questions and discuss what has been learnt. In particular, hands-on and visual components have been included wherever possible to enable delegates to view software models and products destined for subsea service.

The course also hosts two site visits, taking delegates out of the classroom and into the real life subsea industry including a chance to test your skills as an ROV Pilot on the ROV Simulator.



# PROGRAMME— Subsea Awareness Course



Day 1 08:45 – 16:45

08:45 Registration

09:00 General Introduction to the Subsea Sector

*Neil McKay Woodside Energy Ltd.*

Overview:

- ◆ Why subsea?
- ◆ What other options are available, including option evaluation and selection?
- ◆ Examples of different systems used on existing fields.
- ◆ What are the current design philosophies and the technology drivers?

Subsea development options

- ◆ Single well tieback
- ◆ Template
- ◆ Cluster/manifold etc

10:15 Tea/Coffee

10:30 Components of subsea systems 'building blocks'

*Kevin Mullen, Intecsea*

- ◆ What is the purpose of each and how do they fit into the overall system?

Development areas:

- ◆ Deep water/ultra deep water
- ◆ Complete subsea solutions

12:15 Lunch

13:15 Flow Assurance

*Julie Morgan, Woodside Energy Ltd.*

- ◆ Understanding the nature of fluids
- ◆ Thermal management of subsea systems

15:00 Tea/coffee

15:15 Flow Assurance (cont.)

- ◆ Deep and Ultra deepwater development.
- ◆ Seabed Processing

16:45 Day end

17:30 Course Dinner

Day 2 09:00 – 17:00

09:00 Subsea Wellheads/Trees Introduction 3D Interactive Subsea Systems Overview

*Mike Robinson, FMC Technologies*

Getting to know the Technology and Terminology

- ◆ Drilling Vessels
- ◆ The basics of Drilling a Well
- ◆ An overview of Key components and their methods of operation
- ◆ Subsea Tree Applications
- ◆ Completion risers

10:30 Tea/coffee

10:45 Wellhead Systems

- ◆ UWD-15 Wellhead System Overview
- ◆ UWD-15 Wellhead Installation Animation

Tree systems

- ◆ EHXT, EVDT and EVXT Tree System Overview
- ◆ EHXT, EVDT & VXT Installation & Tooling Overview
- ◆ EHXT Installation Animation
- ◆ EVDT/EVXT Installation Animation

12:00 Lunch

13:00 Manifolds and Pipeline Sys.

- ◆ HOST Template/Off Template/Cluster

Tie-In & Connection System

- ◆ KC/KL/Connectors
- ◆ ROVCON
- ◆ SPOOLCON
- ◆ STABON
- ◆ UCON-H
- ◆ Animations

14:00 Tea/coffee

14:15 Depart Hilton for FMC's base at Henderson

17:00 Back at Hilton - Day end

Day 3 09:00 – 16:30

09:00 Subsea Control Systems

*Greg Ross, Aker Solutions*

Introduction

- ◆ Overview, what does the control system do

Types of Control System

- ◆ Advantages/disadvantages of each type

10:30 Tea/coffee

10:45 Typical Equipment

- ◆ Hydraulic Power Unit
- ◆ Electrical Power Unit
- ◆ Master Control Station
- ◆ Subsea Control Modules

Subsea Options

- ◆ Hydraulics
- ◆ Electrics
- ◆ Umbilicals
- ◆ Sensors

Operator Interface

- ◆ Master Control Station, functionality and options

Future

- ◆ Technology Drivers

12:15 Lunch

13:15 Subsea Control Fluids

*Sam Johns, Castrol Offshore*

- ◆ The control fluid as a component of the system
- ◆ Anatomy of a control fluid
- ◆ Environmental impact

14:45 Tea/coffee

15:00 Umbilicals

*Mahna Mehdizadeh, Aker Solutions*

- ◆ Design
- ◆ Manufacture
- ◆ Project Uses

16:30 Day end

SUT reserves the right to change/amend the programme as it sees fit.

Presenting Companies Include:



# PROGRAMME— Subsea Awareness Course

Day 4 09:00 – 16:30

09:00 Installation

*Andy Buck, Technip Oceania*

Field Architecture Overview

- ◆ Subsea Tieback
- ◆ Subsea Floater

Installation Vessels

- ◆ Vessel Types
- ◆ Positioning
- ◆ Critical Success Factors

Structures

- ◆ Structure Types & Installation
- ◆ Foundations, Types & Installation
- ◆ Critical Success Factor

10:30 Tea/coffee

10:45 Pipelines - Flexibles

- ◆ Flexible Types
- ◆ Critical Success Factors
- ◆ Factors
- ◆ Installation methods

Pipelines – Rigid

- ◆ Flexible Types
- ◆ Critical Success Factors
- ◆ Installation methods

Tie Ins

- ◆ Rigid Spools
- ◆ Flexible Jumpers
- ◆ Flying leads
- ◆ Critical Success Factors

12:15 Lunch

13:15 Remote Intervention Introduction

*Norman Mackay, DOF Subsea*

- ◆ Safety
- ◆ Current Environment
- ◆ Technology Drivers
- ◆ Water Depth

Day 4 (Cont.)

Remote Intervention Systems

- ◆ Tooling Standards
- ◆ Interfacing
- ◆ Component Replacement systems
- ◆ Connection systems
- ◆ Diverless Pipeline Repair

ROV Technology

- ◆ Introduction
- ◆ System Types
- ◆ Typical System Components
- ◆ Operational systems and capabilities
- ◆ Launch and Recovery systems

14:30 Tea/coffee

14:45 AUV Technology

- ◆ Introduction
- ◆ System Components
- ◆ Capabilities
- ◆ Sensors
- ◆ Trials and Testing

Diver Intervention

- ◆ Air and Saturation Diving
- ◆ Safety
- ◆ Diver Tasks
- ◆ Support Vessels

16:30 Day end

Day 5 09:00 – 16:00

09:00 Risks, Reliability & Availability

*Ewan Rowell, Chevron*

- ◆ Basic background
- ◆ Predictions and Modelling
- ◆ Design Techniques
- ◆ Practical Reliability

10:15 Tea/Coffee

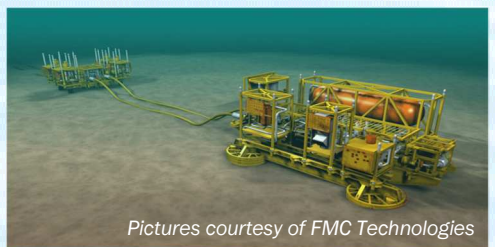
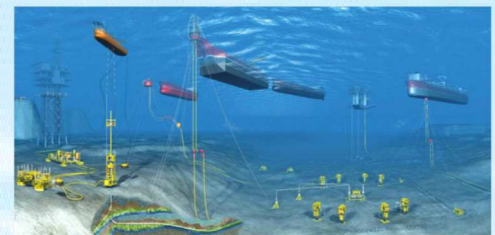
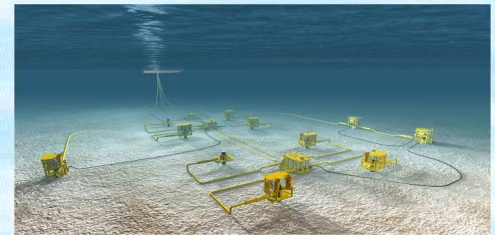
10:30 Angel Case Study

*Harry Mackay, Woodside Energy Ltd.*

12:00 Lunch

12:45 Depart Hilton for workshop tour at Oceaneering

16:00 Back at Hilton - Course Certification and Course Conclusion



SUT reserves the right to change/amend the programme as it see fit.

Presenting Companies Include:

**DOF**subsea

**INTECSEA**  
WorleyParsons Group

**AkerSolutions**<sup>™</sup>

**FMC Technologies**

**OCEANEERING**<sup>®</sup>

**Castrol**  
Offshore

**Technip**  
take it further.

**Chevron**

**woodside**

## Registration Information

Subsea Awareness Course Feb 2014

Should you require further information on this event, please contact Jennifer Maninin on [j.maninin@sut.org](mailto:j.maninin@sut.org) Tel +61 8 9446 9903  
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 8 9446 9905

### Registration Fees

SUT Members - \$2,625.00 + GST = \$2,887.50

Non Members - \$3,150.00 + GST = \$3,465.00

**Fee includes** - All refreshments during the course including dinner on the first night, handout notes of the presentations & DVD containing PDF versions of the presentations available, videos and transport to site visits.

### Preferred Payment Methods:

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

**\*Please note if paying by AMEX there will be a 2.75% surcharge.**

**Cheque:** Australian Dollar only, made payable to The Society for Underwater Technology  
Send to, SUT, 5/5 Hasler Road, Osborne Park, Perth, WA 6017

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

**Invoice:** Please tick here to be invoiced

### Joining Instructions:

Joining instructions will be e-mailed to the registered delegate (as shown on the registration form). All details of presenters and updates to the programme will be included in the joining instructions.

### Course Dinner:

An informal dinner will be held in a local restaurant on the first night of the course (details with joining instructions).

### Transport During the Course:

Delegates are responsible for their own travel arrangements at the beginning and end of each day. Transport will be arranged by the SUT from the Parmelia Hilton Hotel for site visits.

### Cancellations:

Refunds will be made on written cancellation received up to ten working days in advance of the event, but will be subject to a 15% handling charge. 50% will be deducted up to three working days in advance and 100% thereafter up to the start of the event. No refund will be given for non-attendance. Delegates may wish to nominate a substitute in their place.

Please tick box if you do not wish to receive further SUT information

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## Registration Form

Please e-mail details to [Perthevents@sut.org](mailto:Perthevents@sut.org) or fax the completed form to +61 8 9446 9905

Please tick to indicate your preferred payment method: \_\_\_\_\_ SUT Member No. \_\_\_\_\_

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

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

E-mail address \_\_\_\_\_ Tel No. \_\_\_\_\_

Credit Card No: VISA, MASTERCARD or AMEX\* \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

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

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

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

E-mail address where receipt should be sent for credit card payment \_\_\_\_\_

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