EAGE Workshop on Broadband Marine Seismic Data
Adding Value to Offshore Exploration and Production

11-13 May 2015
Kuala Lumpur, Malaysia

www.eage.org
**Technical Committee**

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
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<tr>
<td>Helmut Jakubowicz</td>
<td>PETRONAS</td>
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<tr>
<td>Ian Anstey</td>
<td>Total E&amp;P</td>
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<tr>
<td>Craig Beasley</td>
<td>WesternGeco/Schlumberger</td>
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<td>Sandeep Chandola</td>
<td>PETRONAS</td>
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<td>Philip Fontana</td>
<td>Polarcus DMCC</td>
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<td>Gary Hampson</td>
<td>Chevron</td>
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<td>Henning Hoeber</td>
<td>CGG</td>
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<td>Matthew Lamont</td>
<td>DownUnder GeoSolutions</td>
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<td>Jan Erik Lie</td>
<td>Lundin Norway</td>
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<td>Jan Willem de Maag</td>
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<td>David Monk</td>
<td>Apache</td>
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<td>Joseph Reilly</td>
<td>ExxonMobil Upstream Research</td>
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<td>Cyril Reiser</td>
<td>Petroleum Geo-Services</td>
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<td>Johan Robertsson</td>
<td>ETH-Zurich</td>
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<td>Robert Soubaras</td>
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<td>Paulus Tangke Allo</td>
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<td>Michelle Tham</td>
<td>Schlumberger Geosolutions</td>
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<td>Riccardo Vercesi</td>
<td>Talisman</td>
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<td>Gareth Williams</td>
<td>Dolphin Geophysical</td>
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**Workshop Overview**

Marine broadband seismic data first became available in 2007 and are now accessible through a variety of new acquisition and processing techniques. The First EAGE Asia Pacific Broadband Marine Seismic workshop, held in Kuala Lumpur in May 2013, focused on emerging broadband solutions, together with the benefits of broadband techniques for stacked data. Since then, the importance of broadband data has progressed from enhanced resolution and imaging, through to applications in reservoir characterisation, quantitative interpretation and full-waveform inversion. Furthermore, broadband acquisition has been applied to nearly every form of marine survey, including wide-azimuth, rich-azimuth, coil shooting and 4D data. The pace of these developments has been very rapid and the time is already ripe to reassess both the status and potential of broadband marine seismic technology.

This workshop returns to Kuala Lumpur, but with the benefit of substantially more experience in the use of broadband data, as well as recent developments in data acquisition, processing and analysis. The programme will have a strong emphasis on case histories with the goal of sharing successful applications of marine broadband technology, as well as highlighting areas that need further development. It will also include the latest advances in the application of broadband techniques for seismic imaging as well as the use of broadband data for pre-stack analysis, including reservoir characterisation, reservoir monitoring, and inversion. The workshop will also look at new acquisition technologies for extending seismic bandwidth at both high and low frequencies as well as the potential benefits these could provide.

**Target Audience**

The target audience is geophysicists and interpreters who have experience with or an interest in all aspects of marine broadband technology. Although centred on presentations, the format will provide ample opportunities for extended discussion and interaction, and all attendees are encouraged to be active participants.

**Venue**

The Saujana Hotel Kuala Lumpur  
Jalan Lapangan Terbang SAAS  
40150, Shah Alam, Selangor Darul Ehsan, Malaysia  
http://www.shr.my/

The Saujana Hotel Kuala Lumpur is strategically located 30 minutes from Kuala Lumpur city centre, 35 minutes from the Kuala Lumpur International Airport (KLIA) and only 5 minutes from the Subang Skypark.

<table>
<thead>
<tr>
<th>Room Type</th>
<th>Rate (inc breakfast)</th>
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<tr>
<td>Superior King Room (Single Occupancy)</td>
<td>MYR310++/night</td>
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<tr>
<td>Superior King Room (Double Occupancy)</td>
<td>MYR340++/night</td>
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<tr>
<td>Club Room (Single Occupancy)</td>
<td>MYR475++/night</td>
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<tr>
<td>Club Room (Double Occupancy)</td>
<td>MYR505++/night</td>
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Participants who would like to avail themselves of these competitive rates should download the Hotel Booking Form and confirm their reservation by 30 April 2015.
### Technical Programme

#### Monday 11 May 2015

**Zamrud**

**OPENING SESSION**

09:00  Safety Briefing  
09:10  Welcome & Opening Speech  
09:20  Keynote 1 - Broadband Technology, Historical Context and Remaining Challenges from an End-user Perspective - J.M. Reilly* (ExxonMobil Upstream Research Company)

**CASE HISTORIES I**  

10:00  25805 - Broadband Seismic Imaging and Analysis of Offshore Thrust Belt for Frontier Exploration - M. Fujimoto* (Inpex Corporation) & A. Fatwa (Inpex Corporation)  
10:30  25545 - Broadband Seismic Processing enhances Illumination of Deeper Targets on Shallow-waters off India - R. Fainstein* (Cairn India Ltd.), L. Bubeq (Cairn India Ltd.), S. Mathur (Cairn India Ltd.), S. Dutta (Cairn India Ltd.), M. Lennane (Cairn India Ltd.), D. Bakshi (Cairn India Ltd.), N.J. Whiteley (Cairn India Ltd.), S. Chacko (Cairn India Ltd.), Y. Xiao (CGG), Y. Guo (CGG), P. Lim (CGG), S. Chauhan (CGG), P. Lam (CGG) & J. Sun (CGG)

11:00  Break

**CASE HISTORIES II**  

11:30  25730 - Deepwater Turbidite Reservoir Delineation utilizing Quantitative Seismic Characteristics in Multi-Azimuth and Broadband Survey, Offshore Malaysia - I. Takahashi* (Inpex Corporation)  
12:00  25804 - Broadband Seismic Imaging, a Case Study Offshore Malaysia - W.K. Chia (PETRONAS Carigali Sdn Bhd), A.R. Sharizmi (PETRONAS Carigali Sdn Bhd), Y. Guo (CGG Services (Singapore) Pte Ltd), Y. Li (CGG Services (Singapore) Pte Ltd) & N. Li* (CGG Services (Singapore) Pte Ltd.)

12:30  25807 - Demonstrating the Benefits of Dual-Sensor GeoStreamer(R) Broadband on the Characterization of the Caswell Sub-basin - D. Rajeswaran* (Petroleum Geo-Services)

13:00  Lunch Break

**ACQUISITION METHODS**  

14:00  26029 - Evaluation of a Broadband Marine Source - R. Telling* (Dolphin Geophysical), S. Denny (Dolphin Geophysical), S. Grion (Dolphin Geophysical) & R.G. Williams (Dolphin Geophysical)

14:30  25701 - A Client's Perspective of Recent Learnings and Improvements from a 3D Survey Using Highly Sampled 3C Marine Streamers - K.J. Kolb* (ExxonMobil Exploration Company), M.J. Parry (ExxonMobil Exploration Company), A.P. Shatilo (ExxonMobil Upstream Research Company), E. Neumann (ExxonMobil Exploration Company), J. Perdomo (Schlumberger), Z. Kriseman (Schlumberger) & A. Imamshah (Schlumberger)

15:00  25854 - Dual Sensor Towed Streamer: From Concept to Fleet-Wide Technology Platform - M.T. Widmaier* (Petroleum Geo-Services)

15:30  Break

**SURVEY DESIGN**  

16:00  25824 - Deep Water Survey Design Issues - R. Hardy* (Tonnta Energy Limited)

16:30  25808 - Redefining Broadband – Effective Spatial Resolution - M. Francis (Schlumberger), C. Cunnell (Schlumberger), S. Hydal* (Schlumberger) & M. Tham (Schlumberger)

#### Tuesday 12 May 2015

**Zamrud**

**BROADBAND PROCESSING I**  

09:00  25838 - Broadband, Experience, “Grey Zone” and Expectation - P. Charron* (Total HQ), I. Anstey (Total E&P APC), E. Zamboni (Total E&P Angola), E. McManus (Total E&P UK) & T. Cheriyani (Total E&P USA)

09:30  25974 - Wave Equation Deghosting: Application to Field Data - C. Beasley* (WesternGeco), R. Coates (WesternGeco) & P. Flath (WesternGeco)

10:00  25585 - Adaptive De-ghosting by Kurtosis Maximisation - S. Grion (Dolphin Geophysical)

10:30  25812 - Application of Ghost Removal for Broadband Processing on Various Marine Recording Configurations - O. Yilmaz* (Paradigm Geophysical) & E. Baysal (Paradigm Geophysical)

11:00  Break

**BROADBAND PROCESSING II**  

11:30  25770 - Broadband Data Aided Velocity Model Building and Imaging - O. Vigh* (Schlumberger), N. Moldoveanu (Schlumberger), J. Kapoor (Schlumberger), K. Jiao (Schlumberger) & G. Menzel-Jones (Schlumberger)

12:00  25802 - Full Broadband Processing including Total Q Compensation - X.S. Wang (CGG), B. Hung* (CGG), Y.P. Phan (CGG) & R. Alai (PETRONAS Carigali Sdn Bhd)

12:30  24289 - FWI and Q-Tomography on Broadband Processed Data - SE Asia Case Study - G. Menzel-Jones* (Schlumberger), P. Petton (Total E&P), I. Anstey (Total E&P), P. Vasilyev (Schlumberger), N.A. Mat Don Ya (Schlumberger) & M.M. Hor (Schlumberger)

13:00  Lunch Break

**QUANTITATIVE INTERPRETATION I**  

14:00  25811 - Added Value of Acquired Broadband Seismic for Interpretation and Quantitative Interpretation: Case Studies Review - C. Reiser* (Petroleum Geo-Services), T. Bird (Petroleum Geo-Services) & M. Whaley (Petroleum Geo-Services)


15:00  25847 - Demonstrating the Value of Full Azimuth Broadband Data from an Inversion Perspective - S.K. Chandola* (PETRONAS Carigali Sdn Bhd), C.F. Low (PETRONAS Carigali Sdn Bhd), T. Kurniawan (PETRONAS Carigali Sdn Bhd), M. Tham (Schlumberger), S. Hydal (Schlumberger), L.S. Ngo (Schlumberger), P. Miller (Schlumberger) & A. Paxton (Schlumberger)

15:30  Break

16:00  Excursion

19:00  Workshop Dinner
Wednesday 13 May 2015

Zamrud

QUANTITATIVE INTERPRETATION II
M. Tham (Schlumberger)

09:00  25639 - Simultaneous Inversion of Marine Broadband Multi-Azimuth Survey Seismic (PreSDM) in a Complex Clastic Field - Calvin Chang* (Shell Sarawak Berhad)

09:30  25646 - Quantitative Inversion Improvements from 3D Broadband Seismic - P. Bouloudas* (Apache Energy Limited)

10:00  25806 - Broadband and QI - A Match Made in Heaven - M.G. Lamont* (DownUnder GeoSolutions) & T.A. Thompson (DownUnder GeoSolutions)

10:30  Break

QUANTITATIVE INVERSION AND INTERPRETATION
C. Reiser (Petroleum Geo-Services)

11:00  25823 - Mind the Gap – Broadband Seismic Helps to Fill the Low Frequency Deficiency - E. Zabihi Naeini* (Ikon Science), N. Huntbatch (Ikon Science), A. Kiellus (Dolphin Geophysical), B. Hannam (Dolphin Geophysical) & G. Williams (Dolphin Geophysical)

11:30  25803 - The Impact of Merging Frequency on the Seismic Inversion Result: A Case Study from Sabah Broadband Data - G.C. Tay* (PETRONAS Carigali Sdn Bhd) & T. Kurniawan (PETRONAS Carigali Sdn Bhd)

12:00  25761 - Frequency Decomposition of Broadband Seismic Data: Challenges and Solutions - P. Szafian* (FFA (Foster Findlay Associates Ltd)), J. Lowell (Foster Findlay Associates Ltd), A. Ekersley (Foster Findlay Associates Ltd) & T. Kristensen (Lundin Norway)

12:30  Lunch Break

13:30  Panel Discussion

WRAP-UP & CLOSING
15:00  Wrap-up & Closing - H. Jakubowicz (PETRONAS)

Social Programme

Workshop Dinner
Tuesday 12 May 2015, 19:00-22:00 hrs
A dinner for all delegates will be held in a premier dining venue. This dinner is included in the workshop fee.

Registration

<table>
<thead>
<tr>
<th>Registered and paid</th>
<th>Until 15/03/2015</th>
<th>16/03/2015-11/05/2015</th>
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<tr>
<td>EAGE member</td>
<td>€ 695/ MYR 2905</td>
<td>€ 795/ MYR 3325</td>
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<tr>
<td>Non-member†</td>
<td>€ 795/ MYR 3325</td>
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All member rates are only applicable if the membership dues for 2015 have been paid and confirmed.

† The non-member fee includes EAGE membership for the remainder of 2015.

How to register

We recommend that you register via the online registration form at www.eage.org. However, a downloadable registration form, which should be completed and returned to the EAGE Asia Pacific Office, is also available on the EAGE website. Please note that offline registration (with the PDF form) is subject to an additional charge of €10.

Sponsoring

This workshop offers excellent sponsoring opportunities. Details on sponsorship options can be found on the website www.eage.org/event/broadband-marine-seismic-data-2015.

Gold sponsor

Notebook sponsor

Contact

For more information or enquiries about this workshop please visit the event’s website (www.eage.org) or contact the EAGE Regional Office Asia Pacific via asiapacific@eage.org.

We hope to see you in Kuala Lumpur!