

The EAGE logo is located in the top left corner. It consists of the letters "EAGE" in a bold, white, serif font, set against a green rectangular background.

EAGE

EUROPEAN
ASSOCIATION OF
GEOSCIENTISTS &
ENGINEERS

The background of the top half of the poster is an underwater photograph. It shows a sandy seabed with a single, dark, spiky sea urchin in the center. The water is a deep blue, and there are some faint, white, geometric lines in the upper right corner, resembling a network or a star map.

Third EAGE Seabed Seismic Today Workshop

SEABED SEISMIC: EVOLUTION THROUGH INNOVATION

24-26 NOVEMBER 2025 • MANAMA, BAHRAIN

- **Programme**

WWW.EAGE.ORG

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James Wallace (Co-Chair)	BGP CNPC
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OVERVIEW

The Third EAGE Seabed Seismic Workshop reflects on the evolution of acquisition and processing through technology over the past few years, which has seen seabed seismic sought after for imaging the subsurface for field exploration and development, evergreening legacy data through velocity model building and becoming the gold standard for 4D. The workshop will look at the innovations and step-changes in design and applications that will shape the future of marine seabed seismic.

From acquisition to processing, the workshop will cover all applications and technological advances, including sources, traditional and distributed acoustic sensing (DAS), deployment innovation, novel survey designs and case studies, applications for emerging markets such as carbon storage and new processing and imaging solutions enabled by high-quality multi-component seismic data.

We are excited to have the third edition being held in Manama!

TOPICS

1. Advances in Seabed Acquisition

- On the source side
 - Source Technology – Inc. New Source Technology, Low Frequency, Frequency Controlled, Marine Vibrators, Non-conventional/ Non-Pneumatic, Autonomous Technology, Source Steering/ Wide-Tow
 - Source Acquisition Designs – Simultaneous Shooting, Hybrid / Mixed Sources, Blended Seismic
- On the receiver side
 - Receiver Technology – Inc. New Receiver Technology, Receiver Handling, Autonomous Technology, Automation, IFQC/ML/AI for Data Harvesting and QC, Surface/Vertical DAS, SPNs (Semi-Perm), PRMs, Environmental Monitoring
 - Receiver Acquisition Designs – Inc. Sparse Nodes,

Innovative Geometries, Hybrid / Mixed Technology Designs, Compressive Sensing

- Case studies for Seabed Acquisition

2. Advances in Seabed Processing, FWI and Imaging

- Processing
 - Inc. Emerging Technology and Applications for Seabed Seismic Processing and Processing Mixed Datasets Inc. DAS and OBN, Streamer and OBN.
- FWI
 - Inc. Advances in FWI, Multi-Parameter FWI, Sparse Nodes for VMB, FWI for 4D Applications and Elastic FWI, Full Waveform Impedance Inversion, FWI derived reflectivity
- Imaging
 - Inc. Migration (Inc. RTM and Least-Squares Migration), NFH Imaging, and Multiphysics Imaging
- Data
 - Inc. AI and ML in Processing and Imaging, Handling Big Data, Data Transmission and Reprocessing, Rejuvenating and Repurposing Legacy Seabed Datasets
- Case studies for Seabed Processing, Imaging and FWI

3. Cooperation and Collaboration between Acquisition and Processing/Imaging

- **Acquisition**
 - How are Advances in Seabed Acquisition influencing Seabed Processing, FWI and Imaging.
- **Processing, FWI and Imaging**
 - How are Advances in Seabed Processing, FWI and Imaging influencing Seabed Acquisition.

4. Seabed Seismic and The Future

- Panel Session
 - The Path to Achieving Global Environmental Goals and Vision.
- Quick-Fire Techbyte
 - 5 minute Presentations on New / Crossover Technology
- Brainstorm Session
 - Seabed Seismic and Applications in the CCS/CCUS lifecycle “Screening, Selection, Injection, Monitoring” and Wind Farm “Feasibility and Hazard Assessment”.
- Innovation
 - Acquisition, Processing and Imaging Solutions for Alternative Markets Inc. Site Surveys, Offshore Wind, Marine Minerals, CCS/CCUS, TZ and ultra-shallow water, Co-located Fields.

SHORT COURSE

Sunday 23 November 2025

State of the Art in Full Waveform Inversion



Instructed by
Ian Jones (Independent Consultant)

About the instructor

Ian received a joint honours BSc in Physics with Geology from the University of Manchester, UK, in 1977, an MSc in Seismology from the University of Western Ontario, Canada, and a PhD in Geophysical Signal Processing from the University of British Columbia, Canada.

After working for 'Inverse Theory & Applications' in Canada for two years, he joined CGG, where for 15 years he was involved in R&D in the London and Paris offices, latterly as manager of the depth imaging research group. In 2000 he joined ION GX Technology, as a Senior Geophysical Advisor in London, and in 2021 joined BrightSkies Geoscience as a Consultant Senior Geophysical Advisor.

His interests include velocity model building and migration, having written the text books: 'Velocities, Imaging, and Waveform Inversion: the evolution of characterising the Earth's subsurface' published by the EAGE in 2018; 'An Introduction to Velocity Model Building' published by the EAGE in 2010; and co-editing the SEG Geophysics Reprints series volumes 'Classics of Elastic Wave Theory' and also 'Pre-Stack Depth Migration and Velocity Model Building', as well as contributing the chapter on model building to the SEG online encyclopaedia. He has served as an associate editor for the journals 'Geophysics' and 'Geophysical Prospecting', and teaches the EAGE/SEG/GESGB continuing education course on 'Velocity Model Building and Migration' and was an external lecturer at the University of Leeds and Imperial College London.

Ian was awarded the EAGE's Anstey Medal in 2003 for "contributions to the depth imaging literature", made the SEG European Honorary Lecturer in 2012 for "contributions to advancing the science and technology of geophysics", conducted the 2018-2019 EAGE International Education Tour, and was made an Honorary Life Member by the EAGE in 2018, and received the best paper award for his 2019 First Break tutorial on FWI.

Short Course Overview

Over the past ten years, full waveform inversion (FWI) has emerged and developed to the point that it is now the main technique of choice for detailed model building and reflectivity estimation for complex geological environments. In this review, I will outline the underlying principles involved in FWI, detailing the use of RTM to estimate the location of subsurface parameter error, and introduce the many and varied 'flavors' of FWI, noting their limitations and benefits. Use of FWI for model estimation, reflectivity generation, and pre-stack attribute analysis (AVA) will be covered, and demonstrated with field data examples.

For the topics listed below, real data examples will be used to demonstrate the application and limitation of each technique.

- Why do we need a detailed velocity model?
- Migration using wavefield extrapolation methods (WEM, RTM, etc.)
- One-way versus two-way propagation
- Resolving short-scale-length velocity anomalies
- The mechanics of tomographic inversion with wavefield extrapolation theory (FWI)
- The scattering limit
- Refraction versus reflection
- Different 'norms' (dynamic versus kinematic: least-squares, travel time, phase, optimal transport)
- Examples of current industrial practice for various geological settings

KEYNOTE SPEAKERS



Fuad Al-Somali
Geophysicist, Aramco



Ian Jones
Independent Consultant



Ted Manning
Senior Principal Innovation & Technology ,bp

PANEL SESSION

How can Seabed Seismic Achieve Global Environmental Goals and Vision

Moderator



Ross Compton
Director of Global Policy
EnerGeo Alliance

Panelist



Ted Manning
Senior Principal Innovation & Technology
BP



Xander Campman
Principal Science Expert
Shell Global Solutions International BV



Chris Walker
Chief Geophysicist
BGP Offshore



Gary Hampson
Advisor
Dug

Oral Presentations | Sunday, 23 November 2025

AL RIFAA BALLROOM	
08:00	Registration & Welcome Coffee
08:55	HSSE From Hotel Intercontinental Bahrain
09:00	Session 1:
10:30	Morning Coffee Break
11:00	Session 2:
12:30	Lunch Break - Selection Restaurant (Seated Buffet Lunch)
13:30	Session 3:
15:00	End of Short Course

Oral Presentations | Monday, 24 November

AL RIFAA BALLROOM	
08:00	Registration & Welcome Coffee
08:30	HSSE From Hotel
08:35	Welcome by Co-Chairs James Wallace (BGP) & Ed Hager (Shearwater Geoservices)
08:45	Opening Address by BAPCO Representative
Session 1 - Case Studies for Seabed Acquisition Part I	
Session Chairs: Gary Hampson (DUG) & TBC	
09:00	Keynote 1 - Ian Jones
09:30	The Practical Impact of Effective Data Visualization and Analysis on Ocean Bottom Seismic Acquisition Operations - R. Andrews ¹ , G. Pemberton ^{1*} , B. Wereshchuk ¹ ¹ Sercel
09:55	3D OBN Seismic Acquisition with Undershooting Method for Fold Coverage Data Optimization at X Field, Indonesia - R.W. Nurcahyo ^{1*} , H. Asy'ari ¹ , D.E. Putera ¹ ¹ Elnusa
10:20	Morning Coffee Break
10:50	Efficient OBN Surveys with a Single Vessel - E. Hager ^{1*} , C. Strand ¹ ¹ SHEARWATER
11:15	Aramco GID Placeholder
11:40	Discussion Session / Q&A
11:55	Lunch Break - Selections Restaurant (Seated Buffet Lunch)
Session 2 - Cooperation and Collaboration between Acquisition and Processing/Imaging Part I	
12:55	Keynote 2 - TBC
13:25	Are Near Field Hydrophone Recordings Useful - C. Tsingas ^{1*} , D. Zhang ¹ ¹ Saudi Aramco
13:50	Addressing Geometry Variations in a Multisurvey Ocean-Bottom Seismic Surveys using FWI with Illumination Probing Method - Y. Gholami ^{1*} , F. Golfre' Andreasi ¹ , H. Damir ¹ , A. Bullock ¹ , A. Cooke ¹ , S. Christopher Way ² , M. Wierzchowska ² , H. Sese ² , E. Kristin Areklett ² ¹ Slb; ² Equinor
14:15	How High is High Blending Fold? - G. Hampson ^{1*} , G. Watts ² ¹ DUG Technology; ² New Wave Energy
14:40	OBN Data Reconstruction with Physics Informed Neural Networks - F. Brandolin ^{1*} , A. Alfaraj ² , T. Alkhalifah ¹ , C. Tsingas ² ¹ King Abdullah University of Science and Technology (KAUST); ² EXPEC Advanced Research Center, Saudi Aramco
15:05	Bringing High Density Acquisition to Transition Zone - N. Goujon ^{1*} ¹ STRYDE
15:30	Discussion Session / Q&A (Includes all presenters from Sessions 1 & 2)
16:00	Afternoon Coffee Break



Panel Discussion Topic: How can Seabed Seismic Achieve Global Environmental Goals and Vision

Moderator: Ross Compton (EnerGeo Alliance)

16:30	Introduction to Panelists & Discussion - Moderator: Ross Compton (EnerGeo Alliance) - Panelists: Ted Manning (bp), Xander Campman (Shell), Chris Walker (BGP), Gary Hampson (DUG)
17:30	Closing Remarks by Co-Chairs
17:35	End of Day 2

Oral Presentations | Tuesday, 25 November

AL RIFAA BALLROOM	
08:00	Registration & Welcome Coffee
08:30	Welcome by Co-Chairs James Wallace (BGP) & Ed Hager (Shearwater Geoservices)
Session 3 - Advances in Seabed Acquisition Part I	
Session Chairs: Tim Bunting (PXGEO) & Xander Campman (Shell)	
08:40	Keynote 3 - TBC
09:10	The Next Level Of Automation For Ocean Bottom Node (OBN) Operations - M. Farine ^{1*} , R. Basili ² , S. Taylor ³ ¹ SAExploration; ² inApril AS; ³ Ocean Infinity
09:35	Dual-Clock Timing Solution for Ocean Bottom Node Acquisition - B. Le Foulgoc ^{1*} , T. GIRARD ¹ , D. BARBOT ¹ , F. BONNEAU ¹ , T. NORMAND ¹ , A. LARLET ¹ , A. DUBOUE ¹ , J. LAINE ¹ ¹ Sercel
10:00	3C-DAS System Development and Field Test for SDAS Measurement - G. Yu ^{1,2*} , Y. Rao ³ , Z. Ran ² , S. An ² , F. Tan ² , Q. Jing ³ , L. Meng ³ , J. Wang ³ ¹ BGP; ² Optical Science and Technology (Chengdu) Ltd.; ³ University of Electronic Science and Technology of China
10:25	Morning Coffee Break
10:55	Comparing Sources and Receivers using Data from an Ocean Bottom Node Survey - S. Ronen ¹ , T. Allemand ¹ , J. Aznar ¹ , M. Benaniba ¹ , S. Darling ¹ , A. Duboué ¹ , T.K.R. Harnar Singh ² , P. Herrmann ¹ , S. Laroche ¹ , G. Malveau ¹ , J. Large ^{1*} , N. Tellier ¹ , S. Shukri ² ¹ Sercel; ² Petronas
11:20	Estimation and Application of Project-wide Coordinate, Clock-drift and Water Velocity Corrections for OBN Datab - I. Gregory ^{1*} , P. Scholtz ¹ , R. Telling ¹ , T. Nguyen ¹ , J. Holden ¹ ¹ Shearwater Geoservices, Gatwick
11:45	Shearwater Placeholder
12:10	Discussion Session / Q&A
12:25	Lunch Break - Selections Restaurant (Seated Buffet Lunch)



Oral Presentations | Tuesday, 25 November

Session 4 - Advances in Seabed Processing, FWI and Imaging Part I	
13:25	Advancing Complex Subsalt Imaging Using Elastic FWI and Sparse Ocean-Bottom Node Acquisition - H. Xing ^{1*} ¹ Tgs
13:50	Imaging Processing of 3D DAS-VSP Data Jointly acquired with a High-Density OBN Survey Offshore Abu Dhabi - G. Yu ^{1*} , S. Zhang ¹ , H. Chen ¹ , Y. Zhang ¹ , H. Chen ¹ , G. Cambois ² , J. Cowell ² , J. Mason ² , M. Waqas ² , X. Li ² , L. Duan ¹ , Y. Chen ³ , J. Wu ³ ¹ BGP Inc. CNPC; ² Upstream Department, Abu Dhabi National Oil Company; ³ Optical Science and Technology (Chengdu) Ltd.
14:15	Accelerated Beam Migration Imaging for Shallow OBN Data - A. Alzayer ¹ , A. Alshangiti ² , C. Tsingas ^{1*} , S. Zainaldin ² , A. Alfaraj ¹ ¹ EXPEC Advanced Research Center; ² Saudi Aramco Geophysical Imaging Department
14:40	Discussion Session / Q&A
14:55	Afternoon Coffee Break
Session 5 - Cooperation and Collaboration between Acquisition and Processing/Imaging Part II	
15:25	OBN Acquisition and FWI - T. Rayment ^{1*} ¹ DUG
15:50	Detailed Ultra-Shallow Seismic Imaging over a Very Large Area using High Resolution NFH Data - S. Babkina ^{1*} , O. Khakimov ¹ , O. Andreeva ¹ , M. Mahgoub ² , G. Cambois ² ¹ Viridien; ² ADNOC
16:15	The Effects of Marine Currents on Seismic Data - G. Hampson ^{1*} ¹ DUG
16:40	Discussion Session / Q&A
17:10	Closing Remarks by Chair/s
17:15	End of Day 3
19:00	Dinner Evening

Oral Presentations | Wednesday, 26 November

AL RIFAA BALLROOM	
08:00	Registration & Welcome Coffee
08:30	Welcome by Co-Chairs James Wallace (BGP) & Ed Hager (Shearwater Geoservices)
Session 6 - Advances in Seabed Acquisition Part II	
Session Chairs: James Wallace (BGP Offshore) & TBC	
08:40	Keynote 4 - What's Next for OBN/ Marine Seabed Seismic - Ted Manning (bp)
09:10	"Deep Learning Approaches for Real-Time Quality Control in OBN Acquisition" be - R.K. Kumar ^{1*} ¹ Rajiv Gandhi Institute Of Petroleum Technology
09:35	A Near Seafloor Modelling Study and a Multicomponent Vz Denoising Application - C. Tsingas ^{1*} ¹ Aramco
10:00	Morning Coffee Break
10:30	Innovative 4D Stategy Combining OBN Hybrid Vessel and On-Demand Philosophy - O. LAMERAIN ^{1*} ¹ Totalenergies
10:55	Discussion Session / Q&A
Session 7 - Case studies for Seabed Acquisitions Part II	
Session Chairs: Ed Hager (Shearwater Geoservices) & TBC	
11:25	Quad Source in Middle East Shallow Waters Context - O. LAMERAIN ^{1*} ¹ Totalenergies
11:50	Recent Advancements in Caspian OBN Seismic - C. Cooper ^{1*} , L. Shaw ¹ , P. Tillotson ¹ , M. Soliman ¹ , J. Northall ¹ , V. Orujov ¹ , T.A. Ibrahimzade ¹ ¹ bp
12:15	Lunch Break - Selections Restaurant (Seated Buffet Lunch)
13:15	Exploration OBN Survey Design - M. Cvetkovic ¹ , M. Widmaier ¹ , S. Baldock ^{1*} , G. Nash ¹ , D. Brookes ¹ , C. Udengaard ¹ , C. Schneider ¹ , M. Rocke ¹ , R. Huang ¹ ¹ TGS
13:40	Aramco GID Placeholder
14:05	Afternoon Coffee Break
14:35	Discussion Session / Q&A
15:05	Closing Remarks by Chair/s
15:15	Close of Workshop

REGISTRATION

(All registration rates are in USD)



Registration Fees: Workshop & Short Course

REGISTERED AND PAID	EARLY REGISTRATION 15/8/25 - 13/10/25	Regular Registration 14/10/25 - 04/11/25	Late Registration 05/11/25 - 28/11/25
EAGE Green Member ^{1,5}	1450	1700	1900
EAGE Bronze/Silver/Gold Member ^{1,5}	1290	1550	1750
EAGE Platinum Member ^{1,5}	1290	1290	1290
Non-member ³	1550	1800	2000

Registration Fees: Short Course Only

REGISTERED AND PAID	EARLY REGISTRATION 15/8/25 - 13/10/25	Regular Registration 14/10/25 - 04/11/25	Late Registration 05/11/25 - 28/11/25
EAGE Green Member ^{1,5}	575	675	825
EAGE Bronze/Silver/Gold Member ^{1,5}	525	625	775
EAGE Platinum Member ^{1,5}	525	525	525
Non-member ³	680	780	930

Registration Fees: Workshop Only

REGISTERED AND PAID	EARLY REGISTRATION 15/8/25 - 13/10/25	Regular Registration 14/10/25 - 04/11/25	Late Registration 05/11/25 - 28/11/25
EAGE Green Member ^{1,5}	1150	1400	1600
EAGE Bronze/Silver/Gold Member ^{1,5}	990	1250	1450
EAGE Platinum Member ^{1,5}	990	990	990
Non-member ³	1250	1500	1700
EAGE Student Green Member ^{1,2,5}	375	425	475
EAGE Student Bronze/Silver/Gold Member ^{1,2,5}	300	350	400
Student Non-member ^{2,3,4}	400	450	500

VENUE

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King Faisal Hwy, Manama, Bahrain

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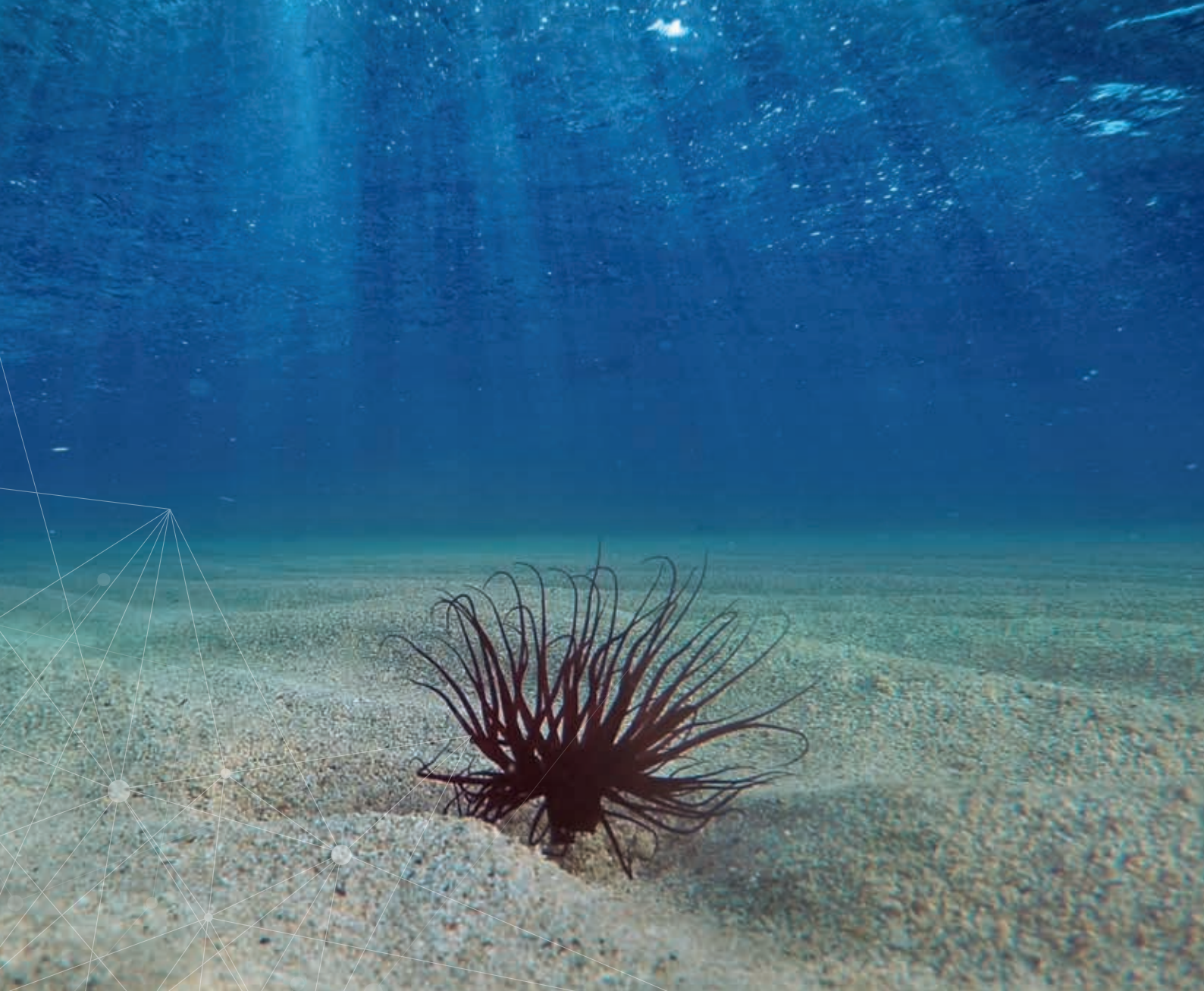


CONTACT

For more information on the workshop, please get in touch with the EAGE MEA team via middle_east@eage.org or +971 4 369 3897.



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