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ASSOCIATION OF
GEOSCIENTISTS &
ENGINEERS

Second EAGE Data Processing Workshop

INNOVATION AND ADVANCEMENTS IN MULTI-DOMAIN DATA PROCESSING

6-8 OCTOBER 2025 • BARCELONA, SPAIN

- **Programme**

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OVERVIEW

Building upon the successful first EAGE Data Processing Workshop in Cairo we are excited to explore yet further into the depths of data processing in all its domains. In the first workshop we discussed how Seismic Processing has become a foundation stone for all the activity related to the energy industry of the future and the energy transition. Moving from the evergreen 2D and 3D time processing it has been relentlessly evolving into 4D then 4C, becoming an even larger domain via Data Processing inversion techniques and calibration to geotechnical integration in a never slowing pace of innovation. The Energy transition with all the requirements from renewables, critical minerals, decarbonisation, transition fossil fuels is demanding of a huge amount of data processing. The demand for de-risking of multiple ventures requires high resolution data processing of a very thin layer portion of our earth's crust where the integration of geological and geotechnical data is paramount.

In this second workshop we will be seeking more emphasis on other forms of data processing. For instance, Satellite imageries and data will become more and more widespread as a backbone for accurate site characterisation in the domain of agriculture and forestry allowing the industry to respect the challenging targets of the decarbonisation pathway.

The significant leap forward in data processing in all its domains has been possible via two main enabling factors: Data acquisition technology advancements and the availability of an unprecedented amount of Computing Power. It is this latter aspect which gave us the idea to join forces with our co-conspirators in high performance computing in Barcelona, enabling us to jointly explore new options for data manipulation.

The healthy debate on data processing kicked off in Cairo with valuable input from many experts in their respective fields. Come to Barcelona and enjoy a stimulating discussion which promises to open new insights to data processing being the life blood of the energy industry and beyond!

TOPICS

06 & 08 October 2025

- Advancements in acquisition technologies and their implications for enhanced data processing
- Pushing the boundaries of Data Processing
- Innovations in Seismic Imaging and Evolving Data Processing Workflows
- Addressing regional data processing and imaging challenges - Europe, Africa & the Middle East
- Advancements and future direction of AI/ML in data processing and imaging
- Advances in Reservoir Characterisation and Reservoir oriented processing
- Challenges and Enhancements in Velocity Model Building
- Processing and imaging applications for the energy transition
- Data processing & imaging - quantifying improvements in quality
- Lessons to be learned from space/ Earth observation data processing
- Non-seismic Data processing technology
- Processing and imaging benchmarks: benchmarking approaches and results
- Computer science case histories on the industrial implementation of new processing and imaging technologies

07 October 2025: Joint Session: Leveraging the Computing Revolution in the AI era

The relentless pace of change of HPC technologies, to which the Geosciences have always been accustomed to, is now compounding with the extraordinary acceleration brought about by artificial intelligence. Every day new opportunities for innovation in data processing pipelines emerge, very often accompanied by new technological challenges. At the same time, data density and resolution are constantly increasing, and the latency between data acquisition and processing is constantly shrinking and even becoming non-existent when we process data on the edge. This joint session will try to address the landscape of this new and unprecedented scenario. How are the HPC and data processing communities reacting? Is there a convergence path that can maximize benefits without disrupting established data processing ecosystems? Are there any lessons we can learn from past revolutions, such as when we borrowed GPUs from game consoles? Has generative AI already had a transformative impact on our data, just like it is having on text, sound, images, and video? As the evolution of HPC hardware is inevitably increasingly driven by AI requirements, is there a viable way to leverage it to speed-up conventional and well established data processing approaches, or is it time for a radical paradigm change?

Join us for a groundbreaking joint session, featuring an exclusive guided tour of the Barcelona Supercomputing Centre—an experience like never before!



OPENING ADDRESS SPEAKER



Prof. Dr. Ir. C.P.A. (Kees) Wapenaar
Emeritus Professor, Section of Applied Geophysics and Petrophysics, Department of Geoscience and Engineering
Delft University of Technology

JOINT SESSION SPEAKERS

Opening Address Speaker



Edmondo Orlotti
Chief Strategy Officer
Core42

KEYNOTE SPEAKER



Song hou
Head of AI Lab
Viridien

Keynote Speaker



Bertrand Duquet
Senior Advisor
TotalEnergies

PANEL DISCUSSION

Panel Session: Innovation and Advancements in Satellite Earth Observation for Geoscience (Missions, Sensors and Application)
Monday, 6 October 2025 | 1600 - 1725 hrs (UTC+2)

Moderator



Giovanni Sylos Labini
Chief Executive Officer
Planetek Italia

Invited Speakers



Matteo Ravasi
Senior Research Advisor and AI/MLOps Engineer
Shearwater Geoservices



Florent Pautre
Manager of Computational Science Team,
Viridien

Panelists



Dell'elce Gianluca
Head of Geodynamics and Geophysical Monitoring Dept.
ENI



Emmanuel Pajot
Secretary General
European Association of Remote Sensing Companies (EARSC)



Juan Tomas Hernani
CEO
SATLANTIS



TECHNICAL PROGRAMME

Oral Presentations | Monday, 6 October 2025

MANILA MEETING ROOM	
08:00	Registration and Welcome Coffee
08:30	HSSE & Opening Remarks by event Co-Chairpersons - Davide Calcagni (ENI) & Steve Pitman (Independent Consultant)
08:40	Opening Address - Prof. Dr. Ir. C.P.A. (Kees) Wapenaar (Delft University of Technology)
Session 1 - Challenges and Enhancements in Velocity Model Building Part I Session Chairs: Davide Calcagni (ENI) & Ali Alfaraj (Aramco)	
09:10	Multi-parameter FWI - Fundamental and Applications - J. Brittan ^{1*} , Ø. Korsmo ² , N. Chemingui ³ , S. Crawley ³ ¹ TGS; ² TGS; ³ TGS
09:30	Application of PS Reflection Waveform Inversion to Ocean Bottom Data from Offshore Norway - O.E. Aaker ^{1*} , Ø. Pedersen ¹ , E.B. Raknes ¹ ¹ Aker BP
09:50	Onshore Complex Fold/Thrust Belts Near Surface Velocity Model Building Effecting Deeper Reservoir Imaging - A. Riaz ¹ , D. Bannister ^{1*} ¹ Eifgeosolutions Ltd
10:10	Unlocking new Reservoir Insights with FWI - S. Masclet ^{1*} , Y. Aziez ¹ , A. Montagud ¹ ¹ Viridien
10:30	Elastic Full Waveform Inversion Workflow for Model Building and High Resolution Imaging - R. Plessix ^{1*} , J. Cao ² , D. Datta ² , V. Goh ² , A. Gomes dos Santos ² , M. Huiskes ¹ , Y. Liu ² , X. Shang ² ¹ Shell Global Solutions International Bv; ² Shell International Exploration and Production Inc.
10:50	Morning Coffee Break & Group Photo Opportunity for DPW
11:20	High-resolution imaging below complex shallow geology in the Barents Sea - J. Morgan ^{1*} , H. Kerrison ¹ , M. Gawron ¹ , P. Fallon ¹ , S. Bretherton ¹ , R. Haacke R ¹ , J. Rokke ² , M. Ackers ² ¹ Viridien; ² Vår Energi
11:40	Data Driven Image Enhancement for the Drilling De-risking in the Pre-salt Exploration,, Gulf of Suez, Egypt - I. Mihaljevic ^{1*} , A. Sazykin ¹ , M. Salheen ¹ , C. Tu ¹ , A. Karvelas ¹ , A. Menari ¹ , G. Busanello ¹ ¹ SLB
12:00	Discussion Session / Session Q & A
Panel Session: Innovation and Advancements in Satellite Earth Observation for Geoscience (Missions, Sensors and Application) - And Introduction Moderated by Giovanni Sylos Labini (Planetek Italia)	
12:15	Panelists: • Dell'elce Gianluca, ENI • Emmanuel Pajot, EARSC • Juan Tomas Hernani, SATLANTIS
13:00	Lunch Break - EL NIDO Restaurant (Seated Buffet Lunch)
Session 1 - Challenges and Enhancements in Velocity Model Building Part II Session Chairs: Steve Pitman (Business Consultant) & Vanessa Butterworth (TotalEnergies)	
14:30	Unlocking the Complex Subsurface Imaging Offshore Egypt - T. Darwish ¹ , M. Mohamed ¹ , J. Kumar ¹ , J. Brittan ^{1*} ¹ TGS
14:50	Enhanced Seismic Imaging with LAD-Based LSM: a Case Study - I. Sharabi ^{1*} , A. Vigner ² , M. Shustak ¹ ¹ AspenTech Subsurface Science & Engineering; ² AspenTech Subsurface Science & Engineering
15:10	Afternoon Coffee Break

15:40	Elastic MP-FWI imaging for Vp, P-impedance and Vs/ Vp using OBN data offshore West Africa - M. Kobylarski ^{1*} , J. Chaloner ¹ , M. Micu ¹ , B. Chowdhury ¹ , W. Hickey ¹ , K. Kraus ¹ ¹ DUG Technology
16:00	Discussion Session / Session Q & A
16:15	Panel Discussion / Q&A
16:30	Closing Remarks / Close of Day 1

Oral Presentations | Tuesday, 07 October 2025

MANILA MEETING ROOM	
08:00	Welcome Coffee
SESSION 2 - POSTER SESSION (HOTEL)	
08:30	Reducing Risks through Seismic Inversion and comprehensive Prospectivity Analysis - N. Desgoutte ^{1*} , V. Thomas ¹ , N. Lucet ¹ , R. Baillet ¹ ¹ Beicip Franlab
	Reviving legacy 4D Seismic Data to Reveal Subtle Oil Slumping Signals in the Grane Field - M. Wilk-Lopes ^{1*} , G. Sarsengaliyeva ¹ , A. Handzlik-Walat ¹ , H. Neffati Rouai ¹ , G.R. Hall ² , F. Bükler ² , M. Beiki ² ¹ SLB; ² Equinor
	PVA Method - a New Approach for Phase Velocity Analysis of Rayleigh Waves - A. Costa ^{1*} , P. Pizzuti ¹ , R. Costa ¹ , F. Rodrigues ¹ , M. Tschoepke ¹ ¹ AFC Geofisica Ltda
	Pitfalls and Limitations in the Statistical Analysis of High-Frequency Imaged Data - M. Hussein Kamel, W. Mohamed Mabrouk, A. MOHAMED ^{1*} ¹ Sawaed UAE
	Optimizing Reservoir Simulations with Cloud-Based HPC: A Scalable and Cost-Efficient Approach - G.A. Haugland ^{1*} ¹ Cegal
	A Modified Sobolev-Norm Loss for Physics-Informed Seismic Wave Modeling - R. Rodrigues ^{1*} , G. Araujo ¹ , H. Yviquel ¹ , J. Costa ² ¹ State University of Campinas; ² Universidade Federal do Pará
	Enhancing Energy sector Cloud-based Computer Vision with Multi-Instance GPU - L. Boillot ¹ , A. Amrani ¹ , D. Klahr ^{1*} ¹ TotalEnergies
	Acoustic Wave Modeling Using the Astaroth Framework - O. Ladino ¹ , B. Spinelli Coelho ¹ , A. Brasil Vieira Wyzkowski ^{1*} , L. Soares ² ¹ Supercomputing Center for Industrial Innovation, SENAI CIMATEC; ² Repsol Sinopec
Session 2 - BSC/CNS Guided Tour / Poster Session	
08:30	Bus departs Hotel H1898 with Groups A & B
09:00	Arrival at BSC grounds - Groups A & B
09:00	Group A - BSC visit / Group B - wait at Vertex/ Garden
09:45	Group A - Finish BSC visit
09:45	Group B - BSC Visit / Group A returns to hotel
10:30	Bus departs hotel with Groups C & D
11:00	Arrival at BSC grounds - Groups C & D
11:00	Group C - BSC visit / Group D - wait at Vertex/ Garden
11:45	Group C - Finish BSC visit
11:45	Group D - BSC visit / Group C- wait at Vertex/ Garden
12:30	Group C&D finish; bus returns to hotel
13:00	Lunch Break at EL NIDO Restaurant (Seated Buffet Lunch)

Oral Presentations | Tuesday, 07 October 2025

Joint Session - Leveraging the Computing Revolution in the AI era Session Chairs: Davide Calcagni (ENI) & Nicola Bienati (ENI)	
14:00	Opening Address - High Performance Compute in the AI Era - Edomondo Orlotti (Core42)
14:30	Keynote 1 - Turnaround Time Reduction of Velocity Model Building Flows - Bertrand Duquet (Total Energies)
15:00	Next-Gen Geophysics: How AI Hardware is Reshaping Computational Methods - M. Ravasi ^{1*} , I. Vasconcelos ² , L. Casasanta ³ ¹ Shearwater GeoServices
15:20	Technology Roadmap- Where are you Going with an Industry Led by the AI? - F. Pautre ^{1*} ¹ Viridien
15:40	Discussion Session / Session Q & A
16:10	Afternoon Coffee Break
Session 3: Borehole Data Processing & Reservoir Characterisation Session Chairs: Alaa Hassan (Independent Consultant) & John Brittan (TGS)	
16:30	Automated Fracture Identification in Borehole Image Logs Using YOLO and PCA-Based Anomaly Detection - S. Acharya ^{1*} ¹ Norwegian University Of Science And Technology
16:50	Enhancing Far-Field Acoustic Logging Imaging Using Receivers' Rotation Correction Algorithm - M. Alsharif ^{1*} , N. Albasheer ¹ , L. Liu ² , H. AlSalem ¹ , T. Tonellot ¹ ¹ Saudi Aramco, Dhahran; ² Aramco Research Centre - Beijing, Aramco Asia
17:10	Utilizing Surface Distributed Acoustic Sensing (S-DAS) for PP and PS Imaging: A North Sea Case Study - D. Brager ^{1*} , M. Wilk-Lopes ¹ , R. Bachrach ² , S. Sonika ³ , C. Thorgersen ¹ , E.B. Raknes ⁴ , Y. Ivanov ⁴ ¹ SLB; ² SLB; ³ SLB; ⁴ Aker BP
17:30	Discussion Session / Session Q & A
17:40	Closing Remarks
17:45	Close of Day 2
19:30	Gala Dinner - My Way Restaurant

Oral Presentations | Wednesday, 8 October 2025

MANILA MEETING ROOM	
08:00	Welcome Coffee
08:30	Opening Remarks for Day 3 by Co-Chairs & Review of Day 2
Session 4: Innovation in Seismic Imaging - Part II Session Chairs: Sergio Grion (Shearwater Geoservices) & Are Osen (Aker bp)	
08:40	Multi-dimensional Seismic Data Analysis in an Advanced Reservoir Characterization Workflows - C. Reiser ^{1*} ¹ Sharp Reflections
09:00	Beyond Finite-Difference: Spectral Element-FWI for High-Fidelity Imaging - L. Casasanta ^{1*} , C. Purcell ¹ , S. Grio ¹ , C. Boehm ² , L. Krischer ² , M. Afanasiev ² ¹ Shearwater Geoservices; ² Mondaic AG
09:20	Up-going data improvements through the attenuation of converted PS waves - D. Rosa ^{1*} , B. Webb, N. Bienati ¹ Eni S.p.A. E&P
09:40	Discussion Session / Session Q & A

Oral Presentations | Wednesday, 8 October 2025

Session 5 - Challenges and Enhancements in Velocity Model Building Session Chairs: Sylvain Masclet (Viridien) & Vanessa Butterworth (Total Energies)	
10:00	4D FWI on 25,000 Nodes – a Clair Case Study - D. Cavalin ¹ , P. Tillotson ² , E. Cho ¹ , F. Gao ¹ , L. Saxton ¹ , D. Davies ¹ , L. Wang ² , A. Vas ^{2*} ¹ TGS; ² BP Exploration and Operating Company Ltd
10:20	Joint 3D Elastic FWI of OBS and DAS-VSP - H.A.E. Malak ^{1*} , G. Apeland ¹ , P.A. Olsen ² , Y. Biryaltseva ² , R. Dehghan-Niri ² , H. Westerdahl ² , A. Cooke ³ , C. Thorgersen ¹ , J. Rickett ³ , J. Xu ³ , X. Zhao ³ , O. Lewis ³ ¹ SLB; ² Equinor; ³ SLB
10:40	Morning Coffee Break
Session 6 - Advancements and Future Direction of AI/ML Session Chairs: Prof. Francesco Grigoli (University of Pisa) & Emilie O'Neill (SLB)	
11:10	Keynote 2 - Transforming Geoscience Workflow with Generative AI: Opportunities and Challenges - Song Hou (Viridien)
11:40	Relevant Training Data for ML - Leveraging the Existing Image - A.K. Evensen ^{1*} , O. Kolbjørnsen ¹ ¹ Aker BP
12:00	A Deep Learning Waveform-Based Earthquake Detector for DAS data - S. Gaviano ¹ , D. Pecci ¹ , E. Rebel ² , F. Grigoli ^{3*} ¹ Seismix Srl; ² TotalEnergies, CSTJF; ³ University of Pisa, Department of Earth Science
12:20	Encoding Spatio-Temporal Coordinates in Convolutional Neural Networks for Seismic Data Processing - M. Fernandez ^{1*} , N. Ettrich ¹ , M. Delescluse ² , J. Keuper ³ ¹ Fraunhofer ITWM; ² École Normale Supérieure; ³ Offenburg University
12:40	Discussion Session / Session Q & A
13:00	Lunch Break -EL NIDO Restaurant (Seated Buffet Lunch)
Session 7 - Processing Applications for the energy transition Session Chairs: Norbert van de Coevering (Oxy) & Anthony Vaz (BP)	
14:00	Hybrid Seismic Data for Overburden and Reservoir Seismic Study over the UK Hewett CCS Project - B. Webb ^{1*} ¹ ENI
14:20	Mitigating Sparse Acquisition Limitations with FWI Imaging for Shallow Hazard Detection in Suriname - M. Aquino ^{1*} , H. Prigent ¹ , N. Salaun ¹ , M. Pouget ¹ ¹ Viridien
14:40	Improved Imaging using Angle Dependent Ray-based Algorithms for 3D Prestack Depth Migration - S. Klarner ^{1*} , A. Elistratov ¹ , M. Baykulov ² ¹ Geogals OU; ² Ad Terra Consultancy
15:00	Afternoon Coffee Break
15:30	Multiparameter FWI Imaging using Full Wavefield in a Shallow Water Environment: Investigations towards Efficient CCS Monitoring - O. Lewis ^{1*} , A. Cooke ¹ , J. Juan ¹ , Y. Biryaltseva ² , F. Agnar Maao ² , R. Dehghan-Niri ² , H. Westerdahl ² , M. Soledad Yanez Sanchez ² ¹ SLB; ² Equinor
15:50	Discussion Session / Session Q & A
16:10	Closing Remarks
16:20	Close of Workshop

REGISTRATION



REGISTERED AND PAID	Early Registration 2/5/25 - 1/9/25	Regular Registration 2/9/25 - 23/9/25	Late Registration 24/9/25 - 8/10/25
EAGE Green Member ^{1,5}	1095	1350	1555
EAGE Bronze/Silver/Gold Member ^{1,5}	940	1195	1395
EAGE Platinum Member ^{1,5}	940	940	940
Non-member ³	1195	1450	1655
EAGE Student Green Member ^{1,2,5}	395	445	495
EAGE Student Bronze/Silver/Gold Member ^{1,2,5}	320	370	420
Student Non-member ^{2,3,4}	420	470	520

VENUE

Hotel 1898 LA RAMBLA

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08002 Barcelona, Spain

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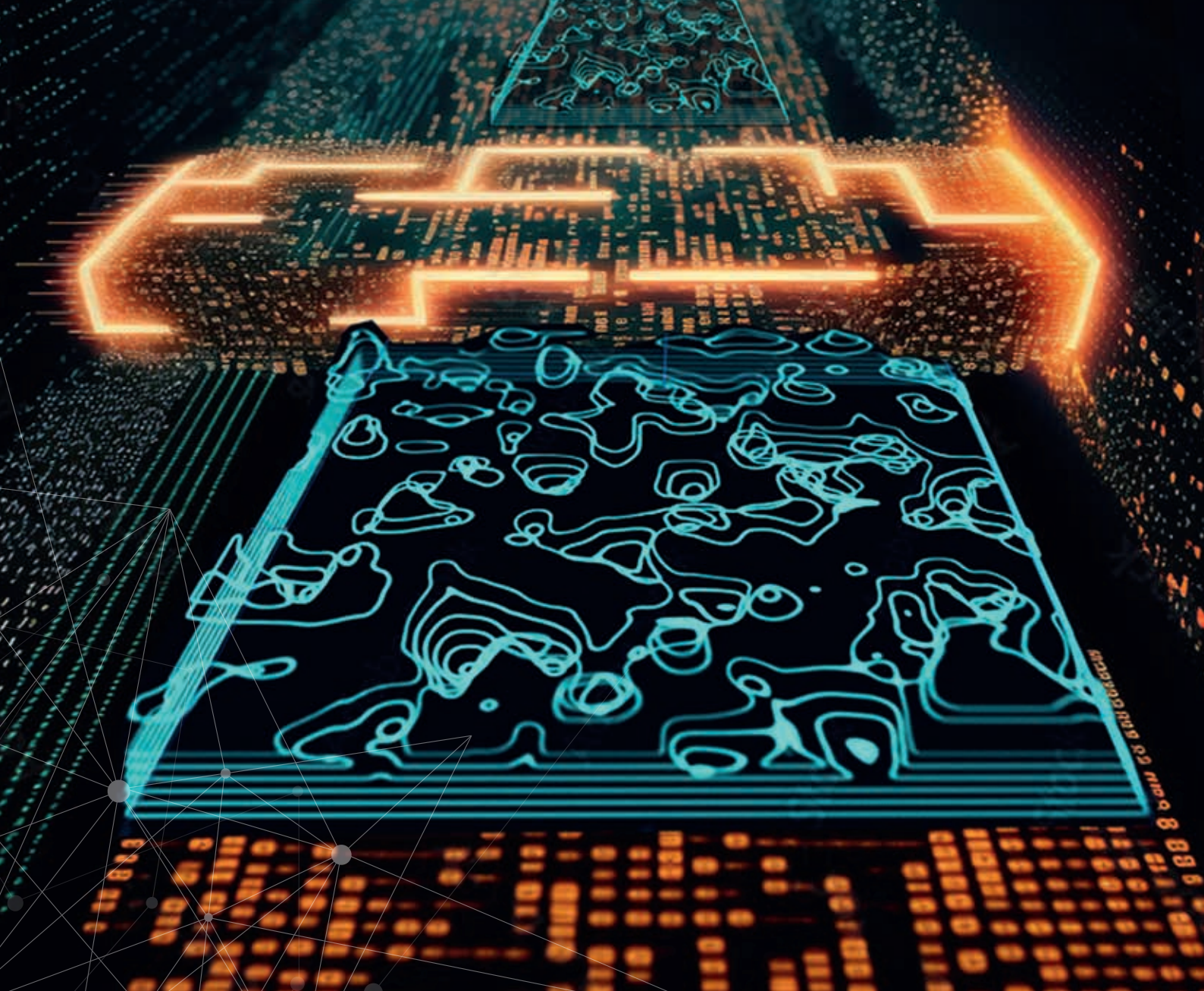


CONTACT

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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