International Association of Oil & Gas Producers

IOGP Geomatics Committee

Geomatics in the Energy Transition:

Delivering innovative and competitive solutions for oil and gas, and new energy business.

IOGP / bp / Shell 11th Geomatics Industry Day

7-8 December 2022 (online event)

The Geomatics discipline plays a pivotal role in the Energy Transition to net zero, from site characterisation, data acquisition, engineering and construction, and asset integrity inputs; to the management and analysis of geospatial data for projects. It encompasses situational awareness, opportunity screening, site selection and emergency preparedness and response.

The value proposition for Geomatics has seldom been more compelling, with the economic climate and drive for change accelerating project timelines, demanding greater operational efficiency and increasing the need for geospatial data and new technology. Technical capability, personnel competency and delivery workflows developed in support of oil and gas projects are easily adapted and applied to the new energy businesses. This allows the Geomatics discipline to meet different challenges and create new opportunities for existing professionals and new talent.

The 11th IOGP Geomatics Industry Day will be co-hosted by IOGP, bp and Shell. The focus of this year's event will be the role that Geomatics plays in the Energy Transition through delivery of cost competitive and operational efficiency, management of HSSE risks and geospatial data solutions, as enablers for existing oil and gas and future energy business.

To register, please visit www.iogp.org/event/11th-geomatics-industry-day

For more information, please contact the Geomatics Committee Manager, Lucyna Kryla-Straszewska, at lks@iogp.org

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Programme – Day 1: 7 December 2022

TIME (UTC)	PRESENTATION	SPEAKER
Day 1 – Part 1		
12:30 - 12:35	**Welcome**	Yen Puasa, Shell & IOGP Geomatics Committee Chair
12:35 - 12:50	**Word from IOGP Engineering Director**	Adri Postema, IOGP Engineering Director
12:50 - 13:10	**Introduction to IOGP Geomatics Committee**	Yen Puasa, Shell & IOGP Geomatics Committee Chair
13:10 - 13:15	**Setting the scene for Day 1**	Mark Poole, bp
13:15 - 13:35	**IOGP Geo-Information Subcommittee - supporting the energy transition**	Ian Milligan, Woodside Energy & IOGP Geo-Information Subcommittee Chair
13:35 - 13:55	**IOGP Remote Sensing Subcommittee - maximising the benefits**	Steven Williams, bp & IOGP Remote Sensing Subcommittee Chair
13:55 - 14:15	**InSAR solutions for wide area reservoir monitoring in oil & gas, reservoir triage from space**	Jennifer Scoular, SkyGeo
14:15 - 14:35	**Managing QGC's biodiversity commitments through remote sensing**	Shane Barrett, QGC Pty Ltd
14:35 - 14:40	**Discussion / Wrap up**	Mark Poole, bp
14:40 - 15:00	**BREAK**	
Day 1 – Part 2		
15:00 - 15:05	**Welcome**	Mark Poole, bp
15:05 - 15:25	**Keynote speech from bp**	Miranda Jones, bp, Vice-President Health, Safety, Environment & Carbon
15:25 - 15:45	**Surveying is no breeze in the transition to renewables!**	Craig Allinson, bp
15:45 - 16:05	**Dire straits - geodetic lessons from an exploration well project in Malacca**	Puguh Sarwanto, Pertamina
16:05 - 16:25	**Innovative marine life monitoring solution to support future energy**	Blanca Montoya, Oceaneering
16:25 - 16:45	**Marine Autonomous Survey Ships - is it plain sailing?**	Sophie Salway, Qatar Shell Service Company W.L.L / Gareth Edwards, Brunei Shell Petroleum
16:45 - 17:05	**GIS supporting carbon capture**	Chris Richardson, bp
17:05 - 17:10	**Discussion / Wrap up**	Mark Poole, bp
17:10 - 17:15	**Closing remarks and adjourn for Day 1**	Walter Jardine, IOGP Geomatics Committee Vice-Chair

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Programme – Day 2: 8 December 2022

TIME (UTC)	PRESENTATION	SPEAKER
Day 2 – Part 1		
12:30 - 12:35	**Welcome**	Yen Puasa, Shell & IOGP Geomatics Committee Chair
12:35 - 12:55	**Keynote speech from Shell**	Syrie Crouch, Shell, Vice-President Carbon Capture, Utilisation & Storage
12:55 - 13:00	**Setting the scene for Day 2**	Yen Puasa, Shell & IOGP Geomatics Committee Chair
13:00 - 13:20	**IOGP Geomatics Committee - panel discussion on industry-wide technical specifications**	Walter Jardine, IOGP Geomatics Committee Vice-Chair / Greg Pilgrim, ExxonMobil / Guy Berridge, Shell / Malcolm Gauld
13:20 - 13:40	**Geospatial data sharing to optimise design and operation of infrastructure**	Bill Russell-Cargill, Inpex
13:40 - 14:00	**Enabling informed decisions and safer offshore operations through Geospatial data adoption**	Saiful Nizam Mustafa / Tham Siew Kee, Petronas
14:00 - 14:20	**GECO: Geospatial Electrical Component Optimiser**	James Kerr, bp
14:20 - 14:40	**Reshaping Geospatial as part of the TotalEnergies energy transition**	Veronique Miegebielle / Camille Jaganathen, TotalEnergies
14:40 - 14:45	**Discussion / Wrap up**	Yen Puasa, Shell & IOGP Geomatics Committee Chair
14:45 - 15:00	**BREAK**	
Day 2 – Part 2		
15:00 - 15:05	**Welcome**	Yen Puasa, Shell & IOGP Geomatics Committee Chair
15:05 - 15:25	**Transforming downstream assets – a GIS Solution**	Robert Everts, Shell
15:25 -15:45	**Geospatial - developing offshore wind**	Stephen Hogg, bp
15:45 - 16:05	**Supporting the energy transition - Geomatics inputs to a Pertamina CCS project**	Puguh Sarwanto, Pertamina
16:05 - 16:25	**An integrated approach to de-risk & deliver CCS project**	Steve Long, Shell
16:25 - 16:30	**Discussion / Wrap up**	Yen Puasa, Shell & IOGP Geomatics Committee Chair
16:30 - 16:35	**Closing remarks and adjourn for Day 2**	Yen Puasa, Shell & IOGP Geomatics Committee Chair

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Welcome

Zurinah Yen Puasa
Chair of IOGP's Geomatics Committee

When people ask me about my profession, I often start by asking: "Do you ever use maps? ", and if they say: "Yes", then I say: "That's the discipline I'm in. We measure and survey the real world and then make a map or models out of the data we collect". If they are still nodding encouragingly, I add: "With these representations of the real world, we can make better decisions". And if they say: "No, I don't use maps," I smile and say: "Well, you should try it, as that's an easy way to find out how to get from A to B."

As IOGP Geomatics Committee Chair, I am delighted to be part of the 11th Geomatics Industry Day, to share and to showcase the values we deliver to our businesses, and the capabilities we offer to the industry and beyond. We have progressed a very long way from the first ever chain survey I carried out on the moorlands near Newcastle University back in 1992, being pelted by large hailstones, shivering in my soaking boots, standing in a huddle with my first-year surveying classmates under a bridge, dreaming, I believe, of better ways to acquire data without such personal sacrifice!

Geomatics is the most adaptive and practical discipline I know of, and I am very proud to have chosen it as a profession. In our industry, we continue to leverage developments in surveying and positioning and GIS technologies, tapping into big data that remote sensing offers, and taking advantage of the processing power of computing, interoperability, and analytics. In upstream, we have been the bridge between the geoscience and engineering world, and we are stepping up with our highly transferable skills and geospatial insights into the world of new energies. I hope our 11th Industry Day, "Geomatics in the energy transition" will help to crystalize how we continue to secure our licence to operate in the upstream business, how we play an increasingly important role in the decarbonization of our environment, and how we enable energy transition in safe, efficient, and cost effective ways. I hope you will take away some key lessons from the great line up of presentations we have, and feel energized from the keynote addresses, and the transition progress we have made thus far.

I hope you will enjoy learning!

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Organising Committee

Zurinah Yen Puasa, Geomatics Committee Chair, Shell

Yen has over 30 years with Shell in Upstream conventional and unconventional businesses, and also providing support for downstream and renewable energy. She joined Shell in 1991 directly from high-school, and awarded in-service scholarships from Brunei Shell to obtaining a degree in Surveying from Newcastle university in 1995 and a Masters in Remote Sensing from University College London in 1998. She started in Mapping & GIS and later created the Remote Sensing section in BSP before embarking on her first international career in the North Sea as Portfolio Advisor and Project Surveyor in 2001. Until 2014, Yen held various global discipline and regional leadership roles of increasing seniority in Shell International and Asia Pacific Region, and further broadened as a Development Planner for Integrated Gas in Shell Technology Center Bangalore. At this point Yen was focusing on driving decision quality for Shell Integrated Gas projects in Sakhalin and Australia. Yen returned to lead Geomatics Hub team in the Americas, before taking her current role as Geomatics manager in Shell Global Solutions B.V, providing geospatial solutions for Subsurface and Integrated gas Growth team in Europe, Nature Base Solutions and Renewable Energy business. She took on the IOGP Geomatics Committee Chair role in 2022. Born in Brunei, Yen is a single parent of her 15 year old son. Outside work, Yen loves spending time with her friends and family and investing time in her passion for travelling and seeing the world.

Walter Jardine, Geomatics Committee Vice-Chair

Walter Jardine has over 30 years' experience in providing survey & positioning and geospatial information management support across the full exploration & production field life cycle. This has included support to land and marine seismic operations; site and route survey acquisition; rig and well positioning; many facets of project construction, installation and decommissioning; asset integrity management; and operations support & mapping. Prior to retiring in October 2020, Walter provided 20 years of resident survey and positioning operations support and management for bp in the North Sea, Trinidad and Azerbaijan, before taking up bp's Global Survey Authority role in 2014. Prior to joining bp, Walter worked as a land and offshore survey contractor for 12 years, including stints in many corners of the world. He is currently Vice-Chair of the IOGP Geomatics Committee, having chaired the committee between 2016 and 2019. Walter has an honours degree in physical Geography, and diploma and masters degree in Surveying, and was chartered in 1992 (RICS).

Mark Poole, bp

Mark is Survey and Positioning Technical Manager for bp. A land and hydrographic surveyor by trade he has worked for organisations across the energy supply chain from oil and gas operators to Engineering Procurement and Construction companies and Survey companies. He is an active supporter of the geospatial survey profession as a chartered surveyor and director of The Hydrographic Society to promote learning and the application of new technology in survey and positioning in support of sustainable development.

Lucyna Kryla-Straszewska, Principal Manager, Digital and Geomatics, IOGP

Lucy Kryla-Straszewska holds a Masters in Physical Oceanography, is a GIS (geographic information system) specialist, and has over 10 years of international project management experience. She joined IOGP in 2012, and managed both the Geomatics and Metocean Committees and over twenty of their global subject matter expert teams until 2022. She has been recently appointed to provide support to newly established Digital Transformation Committee. Lucy served as a company representative for a number of global forums within educational, energy, geospatial and defence industries.

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Keynote speakers

Adri Postema, Engineering & Standards Director & JIP33 Programme Director, IOGP

After completing a PhD in Polymer Physics at the University of Groningen and a post doctorate at the University of California, Adri started his industrial career with Imperial Chemical Industries Ltd in 1989. After two years in product development and customer technical services, Adri joined Shell, where he held roles in technology and innovation, asset support and capital projects development, with stints in new business development and strategy.

Over the years, Adri has had technology leadership roles in downstream, new energies (hydrogen, fuel cells, and solar), shipping and maritime, and discipline engineering. In 2018, Adri was appointed Programme Director of JIP33, a transformative effort to unlock significant value in the oil and gas industry by driving a permanent reduction in project costs through the development and use of technical procurement specifications. In January 2021, Adri was appointed as Director Engineering & Standards for IOGP.

Born in the Netherlands, Adri is married to Patricia and they have two sons. Outside work, Adri loves being active with his friends and family and spending time on the golf course.

Miranda Jones, Health Safety Sustainability & Environment Energy Leader, bp

Miranda is married to her college sweetheart with whom she has three children ages 32, 26, and 19. Her love of family and community serve as a catalyst to her enduring commitment to disrupt generational poverty and provide all people access to safe and affordable energy.

Over the last 28 years Miranda has worked in various leadership roles across the energy value chain in HSSE and Operations, championing leadership tenets that improve performance and support a culture of care for both people and the environment. Miranda was an early influencer in the adoption of operating management systems, human performance principles, and social and environmental policies. She continues to challenge industry norms in the spirit of advancing the development of diverse energy streams that provide cleaner, safer, affordable energy to communities around the world.

Miranda currently serves as Vice President Health, Safety, Environment, and Carbon for bp. In her role she supports bp's broader distributed businesses across Customers & Products, Gas & Low Carbon, & Regions Corporates & Solutions. These businesses include traditional energy portfolios as well as new lower carbon growth markets.

Miranda holds a bachelor's degree in Occupational Safety & Health and Environmental Management Systems. When she is not in the stands watching sports, she is reading or planning their next travel adventure.

Syrie Crouch, Vice-President Carbon Capture, Utilisation & Storage, Shell

Syrie has over 30 years with Shell, all within the Upstream Development or Exploration Lines of Business. She joined Shell in 1990 after obtaining a degree in Geology from Exeter and a Masters from Imperial College London. Her career started as an Operations Geologist and Petroleum Engineer working offshore in the North Sea.

Until 2006, Syrie held various technical roles of increasing seniority in the geoscience and subsequently the integrated reservoir modeling (IRM) space culminating in being the lead modeler for Shell Deepwater services and finally the head of Integrated Reservoir Modelling in Shell Rijswijk. At this point Syrie expanded her roles from focusing on the subsurface to the full front end development manager positions including opportunities in CO2 EOR in the middle east and Canada. It was during this period that she managed the front-end development, up to and including the public hearing process, as the Sequestration Manager of Shell's QUEST CCS project in Alberta, Canada, which began operations in 2015 and recently reached the 5 Million Tonnes milestone with a 99% uptime.

Currently Syrie is a VP in Shell Upstream, with responsibility to develop and mature Shell's CCUS and Blue Hydrogen portfolio globally. Therefore, she currently has oversight of the Scotford CCS, Northern Lights, and projects in The Netherlands, UK and USA with responsibility to ensure that the projects are a viable addition to the Shell portfolio both technically and commercially and will be an enabler of Shells CCUS ambitions.

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Abstracts and Speaker Biographies – Day 1 Part 1: 7 December 2022

IOGP Geo-Information Subcommittee - supporting the energy transition

The Geo-Information Subcommittee has been working hard on delivering two major work on Land Survey Data Model – LSDM, which will be published this year, and the Offshore Infrastructure Survey Data Model – OISDM, ready for release in Q1 2023. Along with new collaborative work with IOGP Energy Transition Directorate, we produced a significant piece of documentation on CCUS guideline for Seabed Overburden Integrity Monitoring for Offshore CO2 Storage Projects and the Recommended Practice on Measurement, Monitoring & Verification (MVV) Plan (go to the IOGP Bookstore at https://www.iogp.org/bookstore to access the Reports). This paper will share key highlights on these works and what's on the Subcommittee plan for 2023.

Ian Milligan, IOGP Geo-Information Subcommittee Chair, Woodside Energy

Ian is Geospatial Team Lead at Woodside Energy and Chair of the Geoinformation Subcommittee.

He has over 25 years' experience in the geospatial discipline, predominantly in the oil and gas industry, for operators, contractors and consulting organisations, using and integrating geospatial information and data, developing standards and deploying geospatial technology that generates insights, delivers outcomes and aids business decisions.

IOGP Remote Sensing Subcommittee - maximising the benefits

The new Remote Sensing Subcommittee has now formed, with three co-chairs, and 19 members. Its Mission is: (i) to encourage the usage of, and maximize the benefits from, Remote Sensing, from all space and airborne (crewed or uncrewed) platforms in the oil & gas industry and to facilitate communication between service providers and operators in the oil & gas sector; (ii) to assist in the development of industry guidelines, good practice and specifications for the use of remote sensing data and its derived value-added products; (iii) to provide a communication platform to facilitate opportunities for information exchange, and to provide and interface to other organization in the field of remote sensing. This paper will introduce the Geomatics Committee newest Group and its activity plan for 2023.

Steven Williams, IOGP Remote Sensing Subcommittee Chair, bp

Steven Williams is geospatial specialist with over 10 years' experience in geological exploration and operations (Oil & Gas/Mining), working as a GIS/Remote Sensing and G&G data management professional. His current role for bp focuses on providing subject matter expertise in remote sensing in support of bp's integrated energy business through the provision of remote sensing technical services, product development and consultation. Ongoing deliverables encapsulate automation, machine/deep learning, user-centered design with fundamental data management and image processing strategies.

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Abstracts and Speaker Biographies – Day 1 Part 1: 7 December 2022

InSAR solutions for wide area reservoir monitoring in oil & gas, reservoir triage from space

Engineers, geoscientists and managers – we are all becoming data scientists with access to large amounts of remote and local sensing data. This places new demands on manager's and engineer's time. Another dataset about an O&G field only becomes valuable if it can make a significant contribution to the way the field is managed, and show how the influence of informed operational decisions can impact overall profitability. Satellite-based InSAR (Interferometric Synthetic Aperture Radar) is now a key component in the active management of oil and gas assets. Understanding the data and importing it seamlessly into corporate visualization software allows geoscientists to manage ground motion over an entire field by understanding the impacts of changes to production strategies, manage water use, monitor wellbore integrity and minimize potential damage to the producing horizons. By examining InSAR data regularly, the dynamic motion of an O&G field becomes clearer and the relationship between individual wells, injectors, producers, geology and production becomes more defined. Early detection of problems comes within grasp, and risk can be mitigated more effectively. The understanding of remote sensing data sets now becomes a strategic advantage; opening up the possibilities of projecting surface measurements onto sub-surface assets, and allowing changes in the field response to be identified, measured and managed. This technical presentation provides participants with business cases and examples how InSAR remote sensing measurements can deployment for operational efficiency, asset management and risk mitigation.

Jennifer Scoular, SkyGeo

Jenny is a Solution Engineer in the Technical Services team at SkyGeo and works with customers to configure project-specific remote sensing solutions based on a strong understanding of their geotechnical concerns and monitoring requirements. She is a geologist by background, with an MSci Geology degree a PhD in applied InSAR for geotechnical hazards from the Civil Engineering department at Imperial College London.

Managing QGC's biodiversity commitments through remote sensing

QGC Geomatics collaborated with the QGC Environment Team develop a solution leveraging numerous Remote Sensing technologies to satisfy the monitoring and reporting of QGC (and Shell's) Respecting Nature biodiversity commitments. This project required the identification and quantification of vegetation monitor ground cover and (de)forestation associated with QGC's Upstream field development. Reusing existing data integrated from numerous sensors (traditional fixed wing LiDAR and RGB Aerial Imagery, plus multispectral Satellite data) QGC created a repeatable, scalable and incredibly cost effective process that reduces erosion risks and highlights successful reforestation. This work was also recognised internationally by recently winning the Shell Q2 2022 SEAM (Safety, Environment and Asset Management) Award.

Shane Barrett, QGC Pty Ltd

For the last 15 years, Shane Barrett has been working with and leading Geomatics team members at QGC (a Shell owned and operated asset in Queensland, Australia). Shane has more than 25 years of GIS working experience accompanied by degrees in IT and Surveying. Shane is QGC's Subject Matter Expert (SME) for remote sensing and has delivered over 250,000 km² of aerial imagery, multispectral satellite imagery and LiDAR data to QGC. Shane has also been credited with introducing a structured GIS data model to QGC back in 2008 to facilitate over 500,000 new records per year being appended to the corporate GIS database with only 4 staff. Remote Sensing and data management have matured significantly at QGC under Shane's leadership and now the company is enjoying the benefits of the structured corporate GIS database to assist with daily company operations including the successful vegetation management via remote sensing project that he will discuss today.

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Abstracts and Speaker Biographies – Day 1 Part 2: 7 December 2022

Surveying is no breeze in the transition to renewables!

The transition from the oil and gas industry to renewable energy requires a different, more complex approach to undertaking fit-for-purpose survey work due to the scale of projects and the amount of data required to support design and construction processes. Consenting, the timing of development consent orders, and the pace of activities in renewable projects are all factors that contribute to taking a different approach in planning survey operations and acquiring data. With Oil and Gas projects, early development licence commitments facilitate an approach to gather datasets early with no consequence of over-commitment. Renewable projects generally require an early commitment to facilitate sufficient work to enable a project development plan to be established and submitted for development consent order. Only once this is granted, does the developer have commitment to proceed to construction. As such, doing sufficient work to minimise design and installation risk is important, but balancing this against upfront investment in a project that may not be approved is a careful consideration. A significant difference from typical Oil and Gas projects is the sheer scale of the wind farm sites. Areas in excess of 800km2 require a careful approach to site survey planning, to ensure sufficient quality data can be acquired over such large areas, in short time frames, to meet EIA and engineering requirements. Making use of new technologies and careful acquisition planning jointly with internal stakeholders is vital to ensure the vast datasets can be collected as efficiently as possible, with as little impact to other marine stakeholders as possible. We explore these issues with some insights gained and experiences the joint venture between bp and EnBW has provided in recent projects.

Craig Allinson, bp

After graduating from Newcastle University with a degree in Surveying and Mapping Science, and going on to complete a PhD in the Measurement of Ocean Tide Loading from GPS Observations, Craig joined BP in 2005 as a Surveyor. This role took him to a number of locations, with periods spent working from Sunbury, Baku and Aberdeen over the last 17 years. The work has been varied, with a range of activities and roles in the Survey and Positioning discipline. One of the key activities during this period, has been the management of site surveys, including the management of seismic, seabed, geotechnical and environmental data for the first bp/ EnBW Joint Venture wind farm projects in the UK.

Dire straits - geodetic lessons from an exploration well project in Malacca

This is a drama story about lack of Geomatics awareness in an exploration well in the Malacca Strait. Although the well provided good results in terms of discovering hydrocarbons, initial lack of geodetic understanding had a financial impact, and resulted in significant HSSE and business risk, as well as potential communications disruption and degraded relations with neighbouring countries. This presentation provides a recent and real-world example demonstrating that suitable Geomatics input can and does have a significant impact on operations and business efficiency, which in turn leads to a lower carbon footprint, regardless of the activity being conducted. Lack of knowledge of the correct coordinate reference system (despite being correctly identified in the relevant seismic data P-format file), coupled with the utilisation of commercial software with limited / poor geodetic functionality, resulted in a positional error of 280 metres in the target location. This resulted in a requirement for additional marine geophysical site survey data acquisition, to cover the new anchor pattern for the drilling rig, and additional shallow geohazards analysis - all at a cost of $1.5M. The new survey results unfortunately indicated the existence of fibre optic telecommunication cables, belonging to Malaysia and Thailand authorities. As a result, additional communication and coordination was required to ensure that the positions of these cables were fully understood. In turn, this resulted in changes to the rig arrival route and anchor pattern. Despite a good well result, this case provides a valuable lesson on the importance of suitable Geomatics input to operations, in order to avoid potentially significant HSSE, legal, financial and business implications. As around 80% of energy business data is spatially referenced, this type of mis-location could occur in any operational activity, whether in the traditional O&G business, or in Renewables.

Puguh Sarwanto, Pertamina

Almost 30 years' extensive experiences in oil & gas industry with proven track records of exploration & production stage within Asia-Pacific, Middle East, Australia, Europe and Africa while operating and working in geodesy, geomatics, survey-mapping (topography, hydrography & met-ocean), positioning & tracking, cartography, GIS, data management and non-technical sectors (HSSSE/Health, Safety-Security-Societal & Environmental, land management and permitting). Previously working for Total around 15 years and currently working for Pertamina as Lead Specialist Geomatics. Member of IOGP Geomatics Committee and also presenter of publication at national and international conference in oil and gas.

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Abstracts and Speaker Biographies – Day 1 Part 2: 7 December 2022

Innovative marine life monitoring solution to support future energy

The development of innovative solutions for future energy, including offshore wind, is essential to ensuring cost competitiveness and efficiency of operations. The offshore wind market continues to grow globally, and the industry requires alternatives to existing methods of working that overcome current challenges. One area that leverages geomatics is marine life monitoring. Current offshore wind operations are often burdened, through traditional monitoring methods, with inefficient operations, compromised protection of marine life, and slow speed of data delivery and documentation. The proposed presentation will detail a new, patented software solution that leverages remote operations and data streaming technologies along with advanced sensors and visual camera systems to optimize monitoring of marine mammals. Through its sensor-based fusion technologies and data analytics, Ocean Perception provides a map layer of information delivering a situational awareness tool with improved accuracy of marine mammal detections while increasing the efficiency of operations and reducing personnel on board. This mission control center for windfarm construction operations includes artificial intelligence and machine learning for marine mammal detection. The complete platform safely and reliably expands the operational window to 24-hour operations while meeting various regulatory permitting requirements. By expanding the working window and enabling Protected Species Observers (PSOs) to overcome limited visibility, downtime is reduced, and developments are more economical. Ocean Perception can also eliminate the need for passive acoustic monitoring support vessels by using advanced buoy systems for acoustic monitoring, which helps reduce costs and HSE exposure while increasing the accuracy of localization and bearing of mammals as required for monitoring and exclusion zones. This solution has the potential to revolutionize the required marine life mitigation regimes. Ocean Perception, a digital platform of innovation, is ideally positioned to support responsible wind developments to improve precise mitigation decision making and increasing the safety, consistency, and efficiency of operations.

Blanca Montoya, Oceaneering

Blanca Montoya is a Subsea Robotics Product Manager for Oceaneering and has 20 years of industry experience. Blanca is a mechanical engineer with ten years of design engineering expertise. She has a Lean Six Sigma Black Belt certification. Blanca's leadership expertise includes product management and business initiatives delivering process improvements, increased productivity, and new product development. Blanca is a Licensed Professional Engineer in the State of Texas.

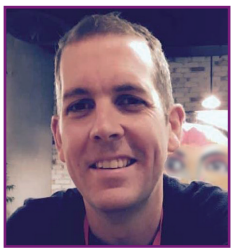
Marine Autonomous Survey Ships - is it plain sailing?

Shell's Powering Progress strategy has set us a challenge to accelerate the transition of our business to net-zero emissions while maintaining our focus on safety and goal zero. This is not an easy feat for Geomatics offshore survey operations which typically deploy diesel burning, manned vessels for weeks and even months at a time. As Geomatics strives to achieve Powering Progress, Marine Autonomous Surface Ships (MASS) offer an attractive solution. Recently MASS has become increasingly popular with promises of reduced emissions, fewer HSSE exposure hours, and significant cost-benefits. This presentation offers an insight into the practical challenges of MASS deployments in Qatar and Brunei. In Qatar, where security is of great concern, implementing autonomous technology and seeking government approval needs care and investment. When coupled with the introduction of new contractors to the local market, the project set up and permitting took much longer than expected. On the contrary in Brunei, although a familiar contractor was used, staff were unfamiliar and inexperienced with the new technology. Moreover, a line-of-sight MASS system meant that a support vessel had to accompany the vessel and an onshore base station was required, negating potential benefits. Despite the challenges faced by the team, MASS stills hold potential for Geomatics operations. The hope is that this presentation can allow others to learn from our experiences and help move MASS forward in the future.

Sophie Salway, Qatar Shell Service Company

Sophie Salway is currently a Geomatics Consultant working for Qatar Shell Service Company based in Doha, Qatar. She joined Shell in 2013, after graduating with a Bachelor's degree in Geography and Geomatics followed by a Master's degree in Geographical Information Science and Systems from University College London. Previously, while working for Shell, Sophie has held positions in the Netherlands and United Kingdom in a range of survey operations and geospatial data roles.

Abstracts and Speaker Biographies – Day 1 Part 2: 7 December 2022



Gareth Edwards, Brunei Shell Petroleum

Gareth Edwards is currently a Senior Offshore Surveyor working for Brunei Shell Petroleum based in Panaga, Brunei. Originally from Perth Australia Gareth undertook a Bach Science in Cartography at Curtin University finishing in 2000 before moving to London working as a GIS Systems Analyst at various companies. Upon moving to Norway in 2007 he started working offshore at DOF Subsea as a Data Processor and then later moving to Statnett managing offshore survey activities as a Survey Engineer. He joined Shell in Perth Australia 2012, working on a range of survey operations and geospatial data project while also undertaking post graduate studies in Hydrography with MLA University of Plymouth.

GIS supporting carbon capture

The East Coast Cluster stands ready to remove 50% of the UK's industrial cluster CO2 emissions, protect thousands of jobs and establish the region as a globally-competitive climate-friendly hub for industry and innovation. bp operates the green hydrogen project (Hygreen), the blue hydrogen project (H2Teesside), as well as the power and CCUS projects NetZeroTeeside and Northern Endurance Partnership. The azure hosted geospatial mapping and analysis portal, OneMap, provides a web-based GIS platform for internal project team collaboration as well as delivering the ability to share and consume data with / from subcontractors. This enables decision making and improves the efficiency of project teams in visualisation and analysis of geospatial data. OneMap also provides a platform for various bespoke applications to be shared, enabling live tracking of project statistics and providing wider context to standalone 3D data sets. These are two examples where traditional delivery of data is enhanced with input from Geospatial.

Chris Richardson, bp

Chris has nine years of experience of providing GIS support to the North Sea oil and gas industry, following his graduation from the University of Edinburgh with a Msc in Geographical Information Science. He has worked across the business first at TotalEnergies then bp and is now increasingly supporting various newer parts of bp's business in the energy transition, such as offshore wind and CCUS.

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Abstracts and Speaker Biographies – Day 2 Part 1: 8 December 2022

IOGP Geomatics Committee - panel discussion on industry-wide technical specifications

This presentation and discussion panel will explore the IOGP Geomatics Committee's development of its first two 'Technical Specifications'. These cover 'Calibration and Verification of Ultra Short Baseline (USBL) Positioning Systems' and 'Calibration and Verification of Offshore Surface Survey & Positioning Systems'. Both documents were delivered with strong Supplier representation support from the IMCA organisation. The panel aims to introduce the two specifications, with brief details on their content and intent, and to provide some insights on how they were developed. The benefits and potential pitfalls of such specifications will be aired, along with a discussion on implementation across the industry

Walter Jardine, Geomatics Committee Vice-Chair

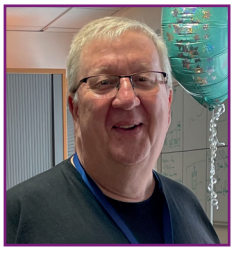
Walter Jardine has over 30 years' experience in providing survey & positioning and geospatial information management support across the full exploration & production field life cycle. This has included support to land and marine seismic operations; site and route survey acquisition; rig and well positioning; many facets of project construction, installation and decommissioning; asset integrity management; and operations support & mapping. Prior to retiring in October 2020, Walter provided 20 years of resident survey and positioning operations support and management for bp in the North Sea, Trinidad and Azerbaijan, before taking up bp's Global Survey Authority role in 2014. Prior to joining bp, Walter worked as a land and offshore survey contractor for 12 years, including stints in many corners of the world. He is currently Vice-Chair of the IOGP Geomatics Committee, having chaired the committee between 2016 and 2019. Walter has an honours degree in physical Geography, and diploma and masters degree in Surveying, and was chartered in 1992 (RICS).

Greg Pilgrim, ExxonMobil

Greg is a geomatics professional, with 20+ years of offshore positioning experience in the Oil and Gas industry. He is experienced in Project Management and Operations Management including LBL / USBL acoustic positioning, training, recruiting, personnel management, HR, and client interaction.

Guy Berridge, Shell

Guy joined Shell in March 2019 and was seconded to Sakhalin Energy as the Technical Advisor for Geomatics Operations where he spent 3 very happy years with his wife (Rachel), two sons (Teddy 8 and Reggie 6) and two Labrador dogs (Mini and Morgan), he is now back living in his family home in rural Cornwall in the South-West of the UK. Guy started his offshore career in the British Royal Navy after leaving school where he completed a 5 year apprenticeship in Marine Engineering and then worked on Nuclear Submarines until leaving the Navy in 2008. He then went back to University and completed a 3 year Bachelor of Science degree in Ocean Exploration (a Category A Hydrography course). After University he worked for a local survey company called Swathe Services which took him all over the world working on many diverse and complex projects including Wind Farm, Pipelay, dredging, nearshore and offshore projects. In 2012 Guy went freelance as a Consultant and started working for Oil and Gas Operators as a Company Site Representative, initially for Shell in the North Sea then to Maersk Oil in Qatar before returning to Shell and giving support as a Project Surveyor to the global Survey Operations Team in Rijswijk. Guy has a love for cooking outdoors both on a barbecue and over an open fire, often cooking pigs, sheep and chickens he has raised himself. He enjoys any sport that takes him onto the water and is a keen hiker, canoeist and cyclist.



Malcolm Gauld, independent

Malcolm is a former Chief Surveyor at Fugro GB North, Aberdeen. He worked in offshore survey and positioning industry from 1983 to 2022.

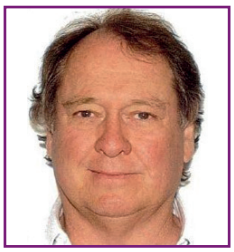
International Association of Oil & Gas Producers

IOGP Geomatics Committee

Abstracts and Speaker Biographies – Day 2 Part 1: 8 December 2022

Geospatial data sharing to optimise design and operation of infrastructure

Data forms a key component of any enterprise. Operation of existing offshore infrastructure, and a push to accelerate energy transition, increases the importance of geospatial data sharing and Australian Research Council's Industrial Transformational Research Hub for Transforming energy Infrastructure through Digital Engineering (TIDE) is presented as an example on how digital engineering can optimise the management of offshore energy infrastructure through data – thereby making this activity cheaper and yet more reliable, with agile decision-making, less environmental risk, improved safety, efficiency and long-term reliability. Formed under the Australian Research Council Industrial Transformation Program, TIDE is a partnership of operators, service providers, hardware providers, software and engineering consultancies – as well as researchers – to provide knowledge "beyond the numbers", including through quality geospatial data. Fast easy access to heterogenous geospatial data is necessary for optimum success, changing how data rendition and management is done so as to meet increased demand for digital data in support of drone, uncrewed surface and underwater vehicles, cloud-hosted, web-based geo-data engagement platforms, and in surveys streaming quality data through to operators via service providers' Remote Operations Centres that provide instant access onshore to offshore data. Today, near real-time data processing and analysis is done where needed, with the inclusion of machine learning and artificial intelligence, as an everyday operational reality. Guidelines on data management and sharing would benefit end-users to have organisation-wide views of what is available; and would serve as the means to provide quick and easy access to centralised data through visual "single point of access" platforms and data centralised data hubs in ways that meet the FAIR principle (Findable Access Interoperable and Reusable) for geospatial data sharing that benefit being able to "measure once use multiple times".



Bill Russell-Cargill, Inpex

Bill has experience in marine mineral exploration; oil & gas construction, IMR, subsea positioning; seafloor mapping; geophysical and geotechnical surveys working on projects in Southern Africa and Australasia. In 2018 he joined INPEX as a survey specialist supporting subsea intervention operations. After graduating as a Land Surveyor he then found a keen interest in surveying underwater and joined IMT, the Institute for Maritime Technology to undertake post-graduate engineering research in underwater acoustics at CAL, the Central Acoustics Laboratory, University of Cape Town. In 1983 he left CAL to found Underwater Surveys Pty Ltd, a survey contracting company providing services to the marine diamond mining industry off Southern Africa's west coast undertaking seabed mapping and positioning service projects. In 1998 he sold his company to Fugro, a leading International Geo-data specialist company and stayed on as their Managing Director, the company being rebadged as Fugro Africa. In 2001 he relocated to Fugro Survey Pty Ltd, Perth as a Director. In 2005 he joined CMST, Curtin University of Technology as a CRC Adjunct Research Associate to work on their Coastal Habitat Mapping Research Program. When it was competed in 2006 he joined Geo Subsea as the Survey and Inspection Manager, which later became named DOF Subsea. At the end of 2013 he moved to DOF's Singapore office. In 2017 he moved back to Perth to join Scope Resources as Managing Director; and later became a consultant.

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Abstracts and Speaker Biographies – Day 2 Part 1: 8 December 2022

Enabling informed decisions and safer offshore operations through Geospatial data adoption

PETRONAS fully adopted and implemented the IOGP's Seabed Survey Data Model (SSDM) in 2014 as one of the digitalization initiatives to be a data-driven organization. The adoption has subsequently opened up more opportunities to improve the current practise in other related areas, which include but not limited to safe vessel navigation for offshore operations/activities. SSDM enables efficient data integration and facilitates informed decisions for operational planning taking into account of the geohazard mitigation plans. However, due to the incompatible format, the data can only be shared with mariners through conventional offshore survey charts and/or through offshore surveyors' navigational display. This may introduce disputes due to inconsistency of reference data, as the vessels are usually referring to standard Electronic Navigation Chart (ENC), of which the details and accuracy of the information are deliberately reduced, especially within oil and gas fields. There are obvious concerns on data security and integrity when the data is shared in an unsafe manner. With the rapid development and advancement of remote and autonomous technologies and simultaneous operations, maintaining fit-for-purpose geospatial data consistency and accuracy is even more critical. Considering the needs and future requirements, Geomatics Department of PETRONAS is evaluating an option to develop PETRONAS-specific Electronic Navigation Charts (PETRONAS-ENC or PCSB-ENC) for all vessels that are chartered to operate within PETRONAS specific oil and gas fields. Unlike standard ENC whereby the accuracies and completeness of oil & gas field structures' positions and layouts are deliberately reduced for security reasons, PCSB-ENC provide accurate positions and full layouts of field structures and facilities, and superimposed with geohazards and seabed features extracted from the (SSDM). This paper will share the efforts and results of the pilot test of PCSB-Specific ENC, and its potentials and criticality of future implementation to support remote and autonomous operations.

Saiful Nizam Mustafa, PETRONAS

Saiful is currently assuming the role as Manager (Geomatics) and Geomatics Discipline Head in PETRONAS. He joined PETRONAS in 2008 as a Senior Executive. He is a member of the IOGP Geomatics Committee and Geo-information Subcommittee, a member of the National Hydrographic Committee, and a member of the Royal Institution of Malaysia. He has also participated as a task force team member in the Geodetic Working Group in Malaysia.

Tham Siew Kee, PETRONAS

Sr. Tham Siew Kee serves PETRONAS Carigali Sdn. Bhd. as the Principal of Geomatics Operation under Geomatics Department of Geophysics Solutions, Geoscience Solutions Division. He obtained his Bachelor Degree in Land Surveying from University of Technology Malaysia (UTM in 1993. Started off as an offshore surveyor and data processor for Racal Survey, he was later appointed as the Area Surveyor for China Offshore Thales GeoSolutions in 1998, and then the Regional Survey Manager for Thales GeoSolutions Asia Pacific four years later. In 2004, he helped establishing survey company Orogenic GeoExpro; and then HydroSkill in 2009 to provide professional marine and offshore hydrographic survey trainings for UTM Hydrographic Category A undergraduates, offshore surveyors, and engineers. Before joining PETRONAS in 2017, he served as the Chief Surveyor for Fugro Survey, covering all geomatics aspects of the service provider, for Asia Pacific region.

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Abstracts and Speaker Biographies – Day 2 Part 1: 8 December 2022

ECO: Geospatial Electrical Component Optimiser

As bp ramps up its offshore wind portfolio to meet net zero, the need for innovative tools that drive efficiencies in our project design phase is increasing. Geospatial Electrical Component Optimiser (GECO) is one of these tools. Developed on OneMap, bp's Geospatial Platform, GECO aims to help our electrical engineers perform critical analysis, visualise key route scenarios and make crucial decisions to allow them to deliver the most cost-effective electrical networks for our offshore wind farms. In this presentation, we'll talk through how the tool was designed, its core functionalities, and how it's helping our engineers reimagine energy.

James Kerr, bp

I am a Geospatial Data Manager working within bp's Innovation and Engineering dataWorx segment. I have four years of experience delivering geospatial support to a wide variety of disciplines, from renewables and environmental studies, to oil & gas and major infrastructure. At bp, I am primarily involved in supporting alternative energy projects, as well as traditional upstream and downstream operations within the European and African geographies.

Reshaping Geospatial as part of the TotalEnergies energy transition

May 28, 2021 marked a major milestone in the history of our Company: Total became TotalEnergies. This decision aims to anchor the strategic transformation required within TotalEnergies in order to fulfil the mission of providing more affordable, clean and reliable energy to as many people as possible more effectively than ever. The creation of the 'OneTech' branch on September 1, 2021 initiated an unprecedented development to meet TotalEnergies new challenge to become a major player in the energy transition. OneTech federates all the Company's technical and scientific expertise. It comprises 3,300 engineers, technicians and researchers, working on the new challenges faced by TotalEnergies. There are three hubs: an industrial hub, a research & development hub and a support functions hub. The Geospatial department inside the OneTech organization regroups experts from Geospatial operations, technologies and remote sensing to provide a single voice of support to diverse internal customers, and satisfy the emerging needs of TotalEnergies transition. Centralization of Geospatial activities allows transverse response to internal customers and challenges us to be more efficient. To execute this, an Agile methodology has been implemented with different squads and one in particular, the 'customer success squad' is dedicated to ease and optimize customers interactions, to design new products, and adapt company needs.

Véronique Miegebielle, TotalEnergies

Véronique Miegebielle is a Remote Sensing Specialist & Geologist. She earned her PhD on satellite imagery and its interpretation. In 2009, she joined TotalEnergies, where her expertise is in Pau. Her works & research mainly focuses on Environmental, HSE domains & Geology. She recently integrated One Tech Geospatial team as Customer Success Manager.

Camille Jaganathen, TotalEnergies

Camille Jaganathen has 9 years' experience in purchasing hardware and software for industrial purposes. She entered the geospatial world through purchasing Drones for TotalEnergies which motivated her to integrate fully the Geospatial OneTech department as Customer Success Manager to bring to the team her commercial background.

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Abstracts and Speaker Biographies – Day 2 Part 2: 8 December 2022

Transforming downstream assets – a GIS Solution

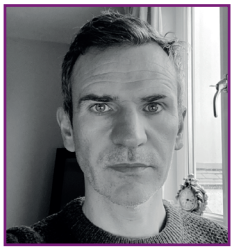
The main Shell refineries globally are going through a huge transition towards a sustainable and CO2 neutral site. Part of this transition is the digitalization roadmap. Completeness and availability of relevant data is a key component of this roadmap. In many of the assets, the current underground utility infrastructure (drinking water, cooling water, sewage, electricity etc.) is maintained in an isolated CAD environment. Geomatics is helping some of the key assets in setting up a GIS to disclose this data and integrate it with other datasets and other IT environments in the asset like Digital Twin. Converting MicroStation and AutoCAD drawings into a GIS model, combining existing datasets into new information sources and setting up a My Maps web map are core activities in setting up this GIS. Apart from these data related activities, special attention is paid to the improvement of workflows to keep the GIS up-to-date. The construction of the RedIIGreen biofuel plant is used to implement a new way of collecting and processing underground infrastructure survey data that fits in the new GIS infrastructure. An interactive GIS development with structural involvement of users must ensure that the GIS tackles the Pernis business needs for managing their underground utility assets.

Robert Everts, Shell

Robert Everts obtained a MSc in Geodesy from the Delft University of Technology in 1993. After gaining further expertise in GIS he contributed to the development of a GIS for a large archaeological project in the Netherlands covering 170 km of railroad construction. In 1998 he started working for Fugro where he was involved as Geomatician in various roles in numerous projects in the Netherlands and in the Middle East, including postings at Schiphol Airport and the Ministry of Water Management. In 2006 he joined Shell as a geodesist in the Rijswijk, Netherlands Geomatics team. Later he became responsible for obtaining, processing and publishing global and corporate GIS datasets. Since January 2022 Robert is working at Shell's Energy & Chemicals Park Rotterdam to develop a GIS for their underground infrastructure.

Geospatial - developing offshore wind

The role of Geospatial within the renewable's landscape is well established and seen as an integral component to any successful project. The need to analyse multiple hard and soft geospatial constraints within the offshore and onshore domain are the building blocks to developing an environmental impact assessment and obtaining authority permissions. Traditional O&G projects follow similar processes, but the scale of stakeholder interaction for offshore wind projects along with the onshore components (cable routing and onshore substation locating) make the role of geospatial even more important. Within an offshore wind project, there are several work packages and many of them require geospatial support throughout the bidding and development stages. Delivering data and analysis to various work package teams requires the careful management of project, cultural and published data sets. Using data automation and the latest GIS technology, including 3D scenes, web applications and dashboards we can support key decision gates of the project. We will demonstrate that with the deployment of modern digital techniques and cloud-based access to our portal, operators, sub-contractors, and vendors can provide a platform to deliver at speed, spatially complex and demanding renewables projects.



Stephen Hogg, bp

Stephen is currently working as a Staff Data Manager for bp, running the Africa and Europe Geospatial squad. His role involves prioritising geospatial goals and operational support activities. It also requires interfacing across the global geospatial leadership and ensuring business needs are delivered. Stephen's background is in Hydrographic Surveying, where he spent 7 years working offshore supporting oil & gas construction projects and pipeline inspection work. He then moved into the GIS domain after completing an MSc in GIS from the University of Edinburgh. He started his GIS career with Shell, working as a Geospatial Information Consultant before taking on Geospatial roles at Dana Petroleum and Nord Stream 2. Stephen joined the bp team in late 2019 as North Sea Geospatial Team Lead, before taking on the current role.

International Association of Oil & Gas Producers

IOGP Geomatics Committee

Abstracts and Speaker Biographies – Day 2 Part 2: 8 December 2022

Supporting the Energy Transition - Geomatics inputs to a Pertamina Carbon Capture and Storage Project

Steadily increasing demands for environmental protection put stricter requirements for numerous businesses, including oil & gas exploration & production (O&G E&P). This became even more stringent when CO2 taxes were introduced and related legal regulations enforced in several countries. In Indonesia, Presidential Decree No. 61 Year 2011 states that Carbon Capture and Storage (CCS) could contribute up to 40% of the energy target reductions. Pertamina, the state-owned energy company and which manages around 70% of O&G E&P in Indonesia, is committed to supporting the government's program to achieve the emission reduction target through various company initiatives. One of these programs is the CCS study at Akasia Bagus, an oil & gas field being intensively developed in West Java, Indonesia. In this study, Geomatics is participating in both sub-surface and surface assessments, in order to prepare for the facilities required for CCS. To facilitate the sub-surface study, a comprehensive 3D model of the intended well boreholes and reservoir geology will be integrated and visualised within a Geographic Information System (GIS). For the surface study, detail topographic data and associated geospatial analysis will provide an essential reference for the proposed well surface locations, pipeline networks and CO2 separation/ removal facilities (both temporary & permanent). As the area is forested, permitting requirements can also be considered using the GIS. Full implementation of such Geomatics support will benefit the study team, by allowing compilation, integration, and visualisation of all relevant information and data instantly, in order to support suitable analysis and appropriate recommendations.

Puguh Sarwanto, Pertamina

Almost 30 years' extensive experiences in oil & gas industry with proven track records of exploration & production stage within Asia-Pacific, Middle East, Australia, Europe and Africa while operating and working in geodesy, geomatics, survey-mapping (topography, hydrography & met-ocean), positioning & tracking, cartography, GIS, data management and non-technical sectors (HSSSE/Health, Safety-Security-Societal & Environmental, land management and permitting). Previously working for Total around 15 years and currently working for Pertamina as Lead Specialist Geomatics. Member of IOGP Geomatics Committee and also presenter of publication at national and international conference in oil and gas.

An integrated approach to de-risk & deliver CCS project

Shell seek to have access to an additional 25 million tonnes a year of carbon capture and storage (CCS) capacity by 2035. This is a big ask and, in the Americas, we are looking to do our part with projects like El Camino, Liberty, Polaris, Husky and BC. To have a feasible project in CCS requires screening potential sinks against Shell's 5 pillars (capacity, containment, transport / injectivity, monitoring and stakeholders). Onshore CCS projects are often in a complex area with many technical challenges, non-technical risks (NTR) and surface constraints. Geomatics provides expertise from the combination of our extensive geospatial data, technology, operational contracts, and people. This can be summarized into 3 areas: 1) Opportunity Evaluation, 2) Well and Engineering Delivery, and 3) Monitoring, Mitigation and Verification. By integrating relevant geospatial datasets, both in the subsurface and surface, it allows the team to influence key business decisions. Almost all sink screening work, commercial lead prospecting, technical engagements and land negotiations center around maps produced by Geomatics. This presentation will share an integrated approach to value optimization and de-risking of CCS projects in the Americas. It has enabled stakeholders to make key business decisions, while managing the risks associated with CCS.

Steve Long, Shell

Steve Long holds a Bachelor of Environmental Studies in Honours Geography from the University of Waterloo in Waterloo, Canada, and an Advanced Diploma in Geographic Information Systems (Honours) from the British Columbia Institute of Technology, in Burnaby, Canada. Steve is a GIS professional with over 24 years of experience. He joined Shell in 2005 as a GIS Analyst in the Gulf of Mexico Regional Exploration team. In 2009 he provided GIS consultancy to pre-DG3 projects in situational awareness, site selection, geohazards, and urban planning. By 2014 he advanced into a Geo-Information Front Office Team Lead role, managing a team of embedded Geomatics staff supporting Exploration, Deepwater and Unconventionals. In his current role, he provides expert Geomatics consultancy to various CCS projects in the Americas. He is also a past chair of APSG. Steve lives in Houston with his wife and three children. As a native Canadian who loves hockey, he coached and helped develop youth hockey in Houston for several years. Currently, he enjoys just being a dad in the stands watching his youngest son play travel hockey.