

SPE Intelligent Energy™

23–25 March | **2010**
Jaarbeurs, Utrecht

Conference Programme and Exhibition Catalogue

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Society of Petroleum Engineers

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Contents

Welcome from the Executive Committee Co-Chairmen	2
Welcome from the Programme Committee Chair	4
Committees	6
Conference Overview	8
Plenary Sessions	10
Ice Breaker Drinks Reception	16
Young Professionals Panel Session	16
Business Leaders' & Asset Managers' Open Discussion Sessions	18
Technical Conference Programme	20
Knowledge Sharing Presentations	26
Show Information	28
Exhibitor Entries	40
Product Index	48
A-Z Listing	51
Floor plan	52

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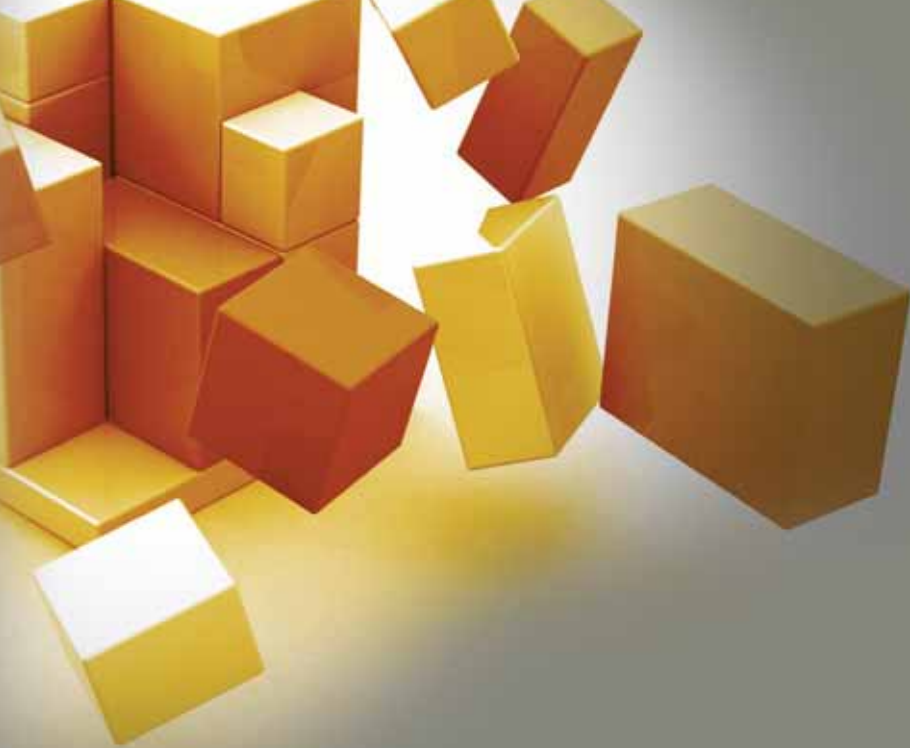


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Welcome from the Executive Committee Co-Chairmen

On behalf of the executive committee we are delighted to welcome you to the 3rd SPE Intelligent Energy Conference.

The conference builds on the successes of, and learnings from, the last two events, and the theme is "Delivering Value – Creating Opportunities".

Since the inaugural event in 2006 the industry has made significant progress and it is appropriate and timely that this conference has a major focus on "Delivering Value" through the application of intelligent energy principles and technologies.

The business environment today remains one of uncertainty as the global economy slowly recovers from the dramatic downturn and impact of the financial crisis. This business context causes us to place emphasis on tangible examples of how this technology is increasing the safety, efficiency, and effectiveness with which we conduct our operations today. So this is a timely opportunity for the industry to show how real time decision making workflows and capabilities, global connectivity and collaboration, show up as increased levels of production, increased recovery and reduced costs.

We are especially pleased that the conference has attracted the attendance of a number of CEOs, senior business leaders, and asset managers, who will speak in open discussion sessions and discuss progress and current challenges in the plenary session. We anticipate

more representation from asset based operational engineers than in previous years. Technology becomes relevant and 'embedded' when it is being used by and talked about by the business, not just the technologists.

Despite price volatility, most believe that the future for our industry will be one of increasing demand driven by global population growth. Keeping pace with this growth in demand for our products will require us to become ever more efficient in maximising the recovery of discovered resources and pushing the technological and commercial boundaries to identify and develop new resources. The future of our business thus depends on the benefits intelligent energy can deliver.

"Creating Opportunities" is about new ways to improve our business performance today and in the future. Some of these opportunities will be realised by improving current workflows, for example, through simplification, step reduction, and automation. Other opportunities are realised by completely new capabilities requiring integration into the business. As in previous years the conference will be well attended by leading technologists. A number of CTOs and senior technologists will be sharing their thoughts about the future for intelligent energy.

One of the challenges that we face as an industry is the deployment and adoption of new

technologies at scale. Deployment raises some cross industry and cross company issues relating to adoption of certain standards for technology and standard workflows and practices. Embedding new technology within companies faces challenges to do with adoption of new ways of working and associated behavioural change.

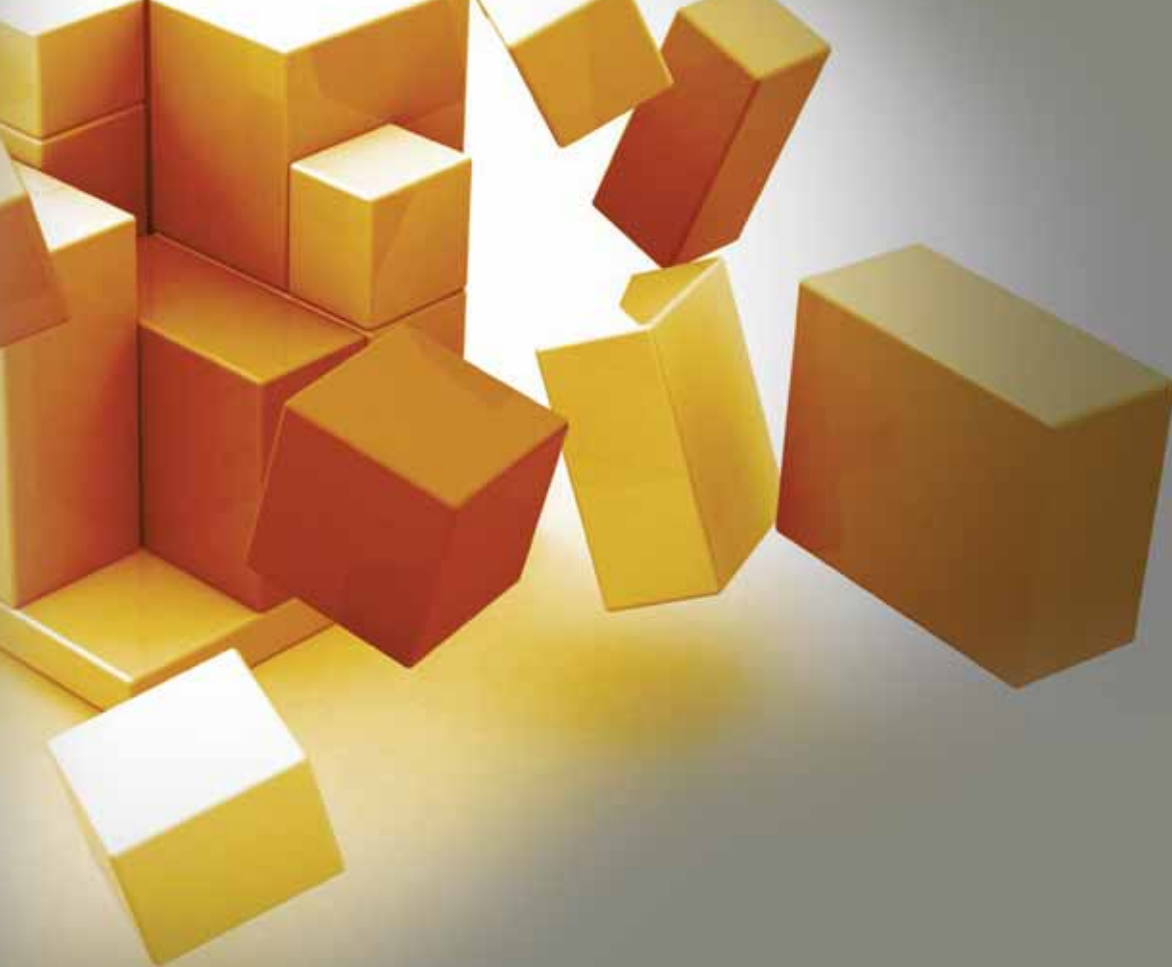
The ability to share examples of value delivery and new opportunities created by intelligent energy technologies helps us to break down barriers to new technology adoption and change in our industry, and the Programme Committee have assembled an excellent array of conference papers to help achieve this aim.

At the end of the day, intelligent energy like everything else, is all about people. We have got a terrific conference and exhibition where it will be possible to meet, interact with, and learn from a large number of talented and experienced people from across our industry.

We very much look forward to meeting with you here in the stunning facilities in Utrecht for SPE Intelligent Energy 2010, and enjoy what promises to be the best Intelligent Energy event yet!

Regards,

David Latin, Vice President of E&P Technology, BP
Brady Murphy, Vice President Europe-Sub-Saharan Africa, Halliburton



Welcome from the Programme Committee Chair

On behalf of the 2010 SPE Intelligent Energy programme committee I am delighted to welcome you to the 3rd International Conference, entitled “Delivering Value – Creating Opportunities”.

We believe this conference will demonstrate the maturity of intelligent energy today and explore some exciting new opportunities.

The first conference, held in 2006: “Oil & Gas Production in a Digital Age” provided delegates with a view of the latest technologies and their application to realise real operational and commercial benefits.

The second conference in 2008, ‘The Future is Here – the Value of Innovation & Integration’ focused on people and challenges of managing the change associated with the deployment of new technologies and business processes.

For 2010, the committee and I have worked to build upon the themes of the two previous conferences and we are excited about some of the new things we hope you will enjoy during this year’s Intelligent Energy event.

The past few months have proved a

challenging time for the oil and gas industry and we have been delighted by the continued high level of interest in intelligent energy. The number and quality of papers submitted has been outstanding and the spread of authors has really impressed the programme committee. Many of the long term contributors have provided examples of how intelligent energy is generating value today as well as the new capabilities they are exploring.

The contribution from academia has been very refreshing this year and we hope you enjoy hearing some of these leading edge thoughts and insights.

As a committee, we believe intelligent energy is a truly global theme and we have actively sought participation from all over the world. In the challenging economic climate this has presented some difficulties, however, we feel we have made considerable progress in expanding contribution from as far afield as South America, Africa, Australia, and the Middle East.

A new track for the conference this year is the entire day of sessions dedicated to the

business leaders and asset managers. This has been designed as an open discussion session and will allow us to hear the views of this important group of people and discuss some of the challenges and opportunities they see in implementing intelligent operations.

Another exciting new development is that the traditional poster session that we have all enjoyed in the past will be brought to life this year with the authors invited to deliver mini presentations during the coffee and lunch breaks. These informal sessions should provoke some lively discussion.

The success of this conference is dependent upon the contribution of all the authors, session chairs and participants. We, the programme committee, very much look forward to seeing you for an informative, lively and enjoyable few days.

Regards,

Helen Ratcliffe
Managing Consultant, PIPC



▶ EXECUTIVE COMMITTEE

CONFERENCE CO-CHAIRMEN

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Brady Murphy, Halliburton

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TNK-BP

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▶ PROGRAMME COMMITTEE

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BT Global Services

Spencer Roberts
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Petrobras

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Shell International E&P

Conference Overview

All functions are scheduled to take place at the
Jaarbeurs Congress Centre, Utrecht

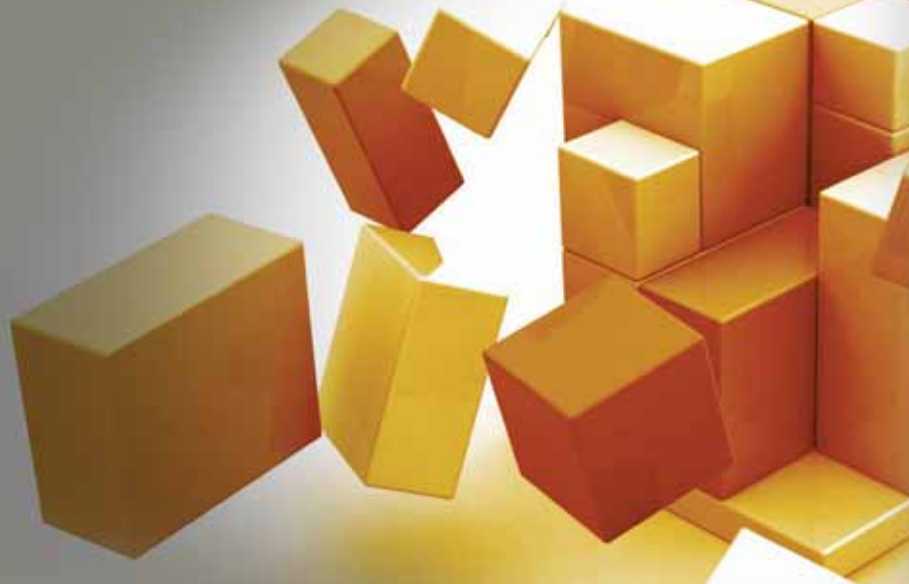
MONDAY 22ND MARCH 2010

1400-1800	Registration Open	Exhibition Hall
1400-1800	Author/Speaker Check-In	SPE Headquarters
1800-1930	Ice Breaker Drinks Reception	Polar Room
1830-1900	Keynote Address	Polar Room
1900-1930	Industrial Gaming Address	Polar Room

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TUESDAY 23RD MARCH 2010 – DAY 1

0800-1700	Registration Open	Exhibition Hall
0800-1800	Author/Speaker Check-In	SPE Headquarters
0830-0915	Coffee Break	Polar Foyer
0900-1800	Exhibition	Exhibition Hall
0900-1015	Opening Scene-Setter Session	Polar Room
1015-1045	Coffee Break and Knowledge Sharing Session 1	Exhibition Hall
1045-1230	Plenary Session 1: Today - Value in any Part of the Cycle	Polar Room
1230-1400	Lunch and Knowledge Sharing Session 2	Exhibition Hall
1400-1730	Technical Session 1: Showcase for Company-Wide Programmes	Polar Room
1400-1730	Technical Session 2: Showcases of Delivering Value	Prins Claus
1400-1730	Technical Session 3: Showcase for Significant Implementations	Auditorium
1400-1530	YP Panel Session: Using Social Media to Build Oilfield Capability and Discover and Develop Reservoirs	Spark Room
1530-1600	Coffee Break and Knowledge Sharing Session 3	Exhibition Hall
1600-1730	Technical Session 4: Intelligent Operations and People	Spark Room
1730-1830	Welcome Reception	Exhibition Hall



WEDNESDAY 24TH MARCH 2010 – DAY 2

0800-1700	Registration Open	Exhibition Hall
0800-1745	Author/Speaker Check-In	SPE Headquarters
0830-1030	Technical Session 5: Production Monitoring	Polar Room
0830-1030	Technical Session 6: Drilling: Delivering Value – Today and Tomorrow	Prins Claus
0830-1030	Technical Session 7: Tools and Techniques Enabling Decision Making	Auditorium
0830-1030	Business Leaders' & Asset Managers' Open Discussion Session	Spark Room
0900-1800	Exhibition	Exhibition Hall
1030-1100	Coffee Break and Knowledge Sharing Session 4	Exhibition Hall
1100-1245	Plenary Session 2: The Future - Taking Things to the Next Level	Polar Room
1245-1415	Lunch and Knowledge Sharing Session 5	Exhibition Hall
1415-1745	Technical Session 8: Production Optimisation	Polar Room
1415-1745	Technical Session 9: Transformational Solutions	Prins Claus
1415-1745	Technical Session 10: The People and Organisations to Deliver Value	Auditorium
1415-1545	Business Leaders' & Asset Managers' Open Discussion Session	Spark Room
1545-1615	Coffee Break and Knowledge Sharing Session 6	Exhibition Hall
1615-1745	Business Leaders' & Asset Managers' Open Discussion Session	Spark Room

THURSDAY 25TH MARCH 2010 – DAY 3

0800-1545	Registration Open	Exhibition Hall
0800-1545	Author/Speaker Check-In	SPE Headquarters
0830-1030	Technical Session 11: Reservoir Management	Polar Room
0830-1030	Technical Session 12: Monitoring and Maintenance	Prins Claus
0830-1030	Technical Session 13: Understanding Business Models & Business Cases	Auditorium
0830-1030	Technical Session 14: Solutions Delivering Value Today	Spark Room
0900-1600	Exhibition	Exhibition Hall
1030-1100	Coffee Break and Knowledge Sharing Session 7	Exhibition Hall
1100-1245	Plenary Session 3: Making Intelligent Energy Happen	Polar Room
1245-1345	Lunch and Knowledge Sharing Session 8	Exhibition Hall
1345-1545	Technical Session 15: Real-Time Production Surveillance	Polar Room
1345-1545	Technical Session 16: Modelling to Add Value	Prins Claus
1345-1545	Technical Session 17: Collaboration	Auditorium
1345-1545	Technical Session 18: Creating Opportunities	Spark Room
1545-1615	Conference Wrap-Up Session	Polar Room

INTELLIGENT ENERGY. DELIVERING VALUE - CREATING OPPORTUNITIES

Despite price volatility, the future for our industry will be one of increasing demand for energy products driven by emerging economies and global population growth. Keeping pace with this growth in demand will require us to become ever more efficient in maximising the recovery of discovered resources and pushing the technological and commercial boundaries to identify and develop new resources. The future of our business depends on the benefits intelligent energy can deliver.

Moderators:

- David Latin, Vice President Exploration & Production Technology, BP
- Brady Murphy, Vice President Europe-Sub-Saharan Africa, Halliburton

Keynote Address:

- Doug Suttles, Chief Operating Officer, BP Exploration & Production

Plenary Session 1

Today - Value in any Part of the Cycle

TUESDAY 23 MARCH, 1045-1230, POLAR ROOM



Jon Rigby (Moderator)
Managing Director,
UBS European Oil and Gas
Research

Jon Rigby is a managing director and is head of the European oil and gas equity research team. He has been an oil and gas analyst since 1997. In 2008/09 the team was number 1 rated among both institutional investors and companies in the Extel survey. Prior to joining UBS in 2004, Jon was an oil and gas analyst at other investment banks, initially in emerging markets and latterly in Europe. Jon began his career as an accountant in public practice, latterly specialising in corporate advisory to large multinationals in the energy sector. Jon holds a BSc degree in Economics, is a chartered accountant and a CFA charter holder.



Matthias Bichsel
Director Projects and
Technology, Shell

Matthias Bichsel was appointed Director, Projects and Technology for Royal Dutch Shell as of 1 July 2009. This role combines major project delivery, technical services and technology. In addition, he has oversight of Shell's safety and environmental performance. He was born in 1954 in Switzerland and joined Shell in 1980 after obtaining a Doctorate in Geology from University of Basel, Switzerland. Matthias Bichsel has worked for Shell companies and affiliates in Bangladesh, Oman, Canada, Indonesia, the US and The Netherlands. In 1995, he was selected as director of Petroleum Development Oman looking after exploration and deep oil field developments. In 1999, he transferred to Houston as managing director of Shell Deepwater Services involved in all aspects of Deepwater exploration and development on a global scale. From 2002 to 2006, he managed as Executive Vice President Shell's global exploration activities and performance. From 2006 until mid 2009, he was Executive Vice President, Technical, for Shell Exploration and Production. He is a member of the American Association of Petroleum Geologists and the Society of Petroleum Engineers.



Melody Meyer
President, Chevron Energy
Technology Company


Melody Meyer is President of Chevron's Energy Technology Company and is responsible for Chevron's global upstream and downstream technology research and development and technical services to Chevron operating companies worldwide. Over the past thirty years with Chevron, Ms. Meyer spent nineteen years of her career working on international projects and in operations assignments, ten years in key leadership roles in North America Exploration and Production, and recently was appointed to lead Chevron's Energy Technology Company. Internationally she has worked on major projects in West Africa, and on the start up of operations in Tengiz Kazakhstan, Papua New Guinea and China. She held management positions in Tengiz, Kazakhstan and Angola. She led exploration and production activities as the Vice President of the U.S. onshore MidContinent and also Gulf of Mexico business units. Ms. Meyer is the Executive Sponsor of the Chevron Women's Network and Chevron Executive Sponsor for the University Partnership Program with the University of Texas at Austin. Ms. Meyer is on the Board of National Offshore Industry Association (NOIA), Board of Trustees of Trinity University, UT Cockrell Engineering Advisory Board, and a 2009 Trinity Distinguished Alumni. Ms. Meyer graduated from Trinity University in 1979 with a BS Engineering Science-Mechanical, and joined Gulf Oil in Houston, Texas, which later merged with Chevron.



Satish Pai
Vice President Operations,
Schlumberger Oilfield
Services



Tim Probert
President, Global Business
Lines and Corporate
Development, Halliburton



Satish Pai is Vice president of worldwide operations for Schlumberger Oil Field Services. A 25-year veteran of Schlumberger, Pai holds a bachelor's degree in mechanical engineering from the Indian Institute of Technology. He joined Schlumberger as a wireline field engineer in 1985, and later worked as a petrophysicist and held positions in recruiting and personnel. Pai served in numerous operations management roles including President of Schlumberger Information Solutions, the software and Information Management division. In March 2002, he assumed the position as vice president of Schlumberger Oilfield Technologies with worldwide responsibilities for technology development and product marketing. In April 2006 he assumed the position in charge of operations for Europe, Africa and the Caspian and in May 2008 took up his current position.

Tim Probert is President of Halliburton's Global Business Lines and Corporate Development, and is also the Company's Chief Health, Safety and Environment Officer. As head of the Company's Global Business Lines, Mr. Probert oversees both of Halliburton's divisions and all product service lines, as well as technology, and mergers and acquisitions. He is also a member of Halliburton's Executive Committee. Before this appointment, Mr. Probert was President of Halliburton's Drilling and Evaluation Division and Corporate Development. In this role, he was responsible for the Company's technology and supply chain management activities. Previously, Mr. Probert was Executive Vice President of Strategy and Corporate Development for Halliburton. Prior to that role, he led Halliburton's Drilling and Evaluation Division as its Senior Vice President and was responsible for the Sperry Drilling, Drill Bits and Services, Baroid, Wireline and Perforating, and Landmark product service lines. Mr. Probert has widespread industry experience and currently serves on the board of directors of El Paso Corporation. Before joining Halliburton in 2003, he was president and chief executive officer of Input/Output Inc. He was also president of Baker Hughes INTEQ, Eastman Teleco and Milpark Drilling Fluids. Additionally, Mr. Probert was vice president of marketing for Baker Sand Control. Mr. Probert began his career in 1972 as a field geologist with Exploration Logging Inc. He received his bachelor of science degree in geology and geography from the University of London.

Plenary Session 2

Today - Value in any Part of the Cycle

WEDNESDAY 24 MARCH, 1100 – 1245, POLAR ROOM



Pieter Kapteijn
(Moderator)

Director Technology & Innovation, Maersk Oil

Pieter Kapteijn, Director Corporate Technology and Innovation, Maersk Oil. Prior to joining Maersk Oil, he worked for Shell E&P in a broad range of roles including drilling operations, Health, Safety and Environment, production engineering, R&D and technology management, in Brunei, Algeria, Oman and the Netherlands. He initiated and led Shell's Smart Well and Smart Field programmes and in the latter capacity chaired the first Intelligent Energy Conference in 2005 in Amsterdam. Pieter has an MSc in Systems and Control Engineering from Delft University in The Netherlands. He is Chairman of the SPE Forum Implementation Committee – Eastern Hemisphere.



Samer AlAshgar

Manager EXPEC Advanced Research Center, Saudi Aramco

Samer AlAshgar is the Manager of Saudi Aramco's upstream oil and gas "EXPEC Advance Research Center" responsible for directing six technology divisions that seek to develop technologies relevant to oil and gas exploration, development and production. Mr. AlAshgar has broad oil and gas experience spanning from facility operations to both production and reservoir engineering. Before joining the EXPEC ARC, he was the head of the Oil and Gas Production Planning Division within Saudi Aramco responsible for managing the long-term development strategy of the company's oil and gas reserves. He joined Saudi Aramco after obtaining his BS in Chemical Engineering from the University of Tulsa. He holds a Masters Degree in Petroleum Engineering from Stanford University and an MBA from MIT.



Ashok Belani

President Reservoir Characterization Group, Schlumberger Limited

Ashok Belani is President of the Reservoir Characterization Group of business segments at Schlumberger. Most recently he was the Chief Technology Officer of Schlumberger Ltd., he led the Research and Technology functions for the company. He was hired into Schlumberger as a Field Engineer in 1980 and worked for ten years in different field positions in operations, sales and management. He then transferred to Product Development and held positions in Engineering, Marketing and Technique and in Technology Management. He was VP of Marketing and Product Development for the Wireline Division and then later the VP Marketing and Product Development for Oilfield Services. He moved to Electronic Test and Transactions business in Schlumberger in 1999 and was President of Semiconductor Solutions. From 2001 to 2002, he held the position of CIO of Schlumberger Ltd. From 2003 until 2005, he was the CEO of the Semiconductor Equipment business in Schlumberger, from where he led first the buyout to Private Equity and later the IPO on Nasdaq and subsequent sale of the business. Ashok has an Electrical Engineering Degree from the Indian Institute of Technology and a Masters degree in Petroleum Engineering from Stanford University. He is currently the Chairman of the Advisory Board for the School of Earth Sciences at Stanford University and a member of the Scientific Committee for the Ecole Supérieure de Physique et de Chimie Industrielles de Paris.




John Brantley

General Manager for Chemicals and Petroleum, IBM



Margareth Øvrum

Executive Vice President Technology & New Energy, Statoil



John Brantley is the General Manager for IBM's Global Chemicals and Petroleum Industry. In this role, Mr. Brantley is responsible for managing the global portfolio of clients across these industries. He is also responsible for the design, development and delivery of industry specific solutions that are based on advanced research & development concepts and integrate IBM's hardware, software and service capabilities. A strong believer in collaboration as the path to innovation, Mr. Brantley has reached out to business partners and clients alike to design and develop the next evolution of industry specific solutions that address these industry's most challenging issues including profitable exploration, integrated operations and asset management. In addition to his General Manager responsibilities, Mr. Brantley serves on IBM's Energy & Environment board, a senior level executive team defining and directing IBM's go-to-market strategy and initiatives for solutions that address the growing energy & environment concerns of our clients across all industries. Mr Brantley joined IBM in 1982 and has held a number of senior sales and marketing positions prior to his current role. Mr. Brantley received his BA in Business Administration from the University of New Hampshire and his MBA from Rochester Institute of Technology.

Margareth Øvrum

Born: 1958. Position: Executive vice president in Statoil from September 2004. Executive vice president in StatoilHydro since 1 October 2007 and Statoil ASA since 2 November 2009. External offices: Board member of Ratos AB (Sweden), Atlas Copco (Sweden) and the Research Council of Norway. Experience: She worked for Statoil from 1982 and held central management positions in the company, including the position of executive vice president for health, safety and the environment and executive vice president for Technology & Projects. She was the company's first female platform manager, on the Gullfaks field. She was vice president for operations for Veslefrikk and vice president of operations support for the Norwegian continental shelf. Education: MA in engineering (sivilingeniør) from the Norwegian Institute of Technology (NTH) in Trondheim, specialising in technical physics. Other matters: Margareth Øvrum is a Norwegian citizen, and she lives in Bergen, Norway.

Plenary Session 3

Making Intelligent Energy Happen

THURSDAY 25 MARCH, 1100 – 1245, POLAR ROOM



Mike K. Hauser
(Moderator)

Manager, i-field, Chevron
Global Upstream

Mike Hauser is currently Manager, i-field, for Chevron Global Upstream, based in Houston. i-field is Chevron's approach to the digital, or intelligent, field. He is responsible for strategic alignment and governance for a portfolio of implementation projects, integrating process enhancement across functions, change management & enabling technologies. The projects are aimed at providing business solutions to business units desiring to be more effective in real-time decision making. Prior to this, Mike has held various positions in Chevron's North America Production Company and Energy Technology Company for 32 years. Mike graduated from the University of Missouri-Rolla in 1978 with a BS degree in Geological Engineering. He spent the first 12 years of his career in Chevron's Western Region in the San Joaquin Valley and Alaska. During this time, he held various positions production engineering, operations & management. For the next 7 years, Mike held various roles in the Gulf of Mexico in Acquisitions & Divestitures, Operations Manager, Diversity Team Leader, and IT Manager. In 1997, he moved to Houston as Central U.S. Manager and Support Services Manager. In these roles, he was responsible for operations across seven states from Alaska & the Rockies to South Texas & the Gulf Coast. As a result of the Chevron-Texaco merger in late 2001, Mike became North America Account Manager, responsible for strategic technology focus areas – providing coordination between the technology company and business units in the operating company. He moved into the current i-field position in late 2002.



Judson Jacobs
(Moderator)

Research Director, CERA

Judson Jacobs is a Research Director in CERA's Upstream Technology practice. In this role he studies the strategic implications of digital and oilfield technologies in the exploration and production [E&P] sector. He was the primary contributor to CERA's Digital Oil Field of the Future (DOFF) Multiclient Study and continues to examine technology issues related to production activities in leading CERA's DOFF Forum service. Other recent research includes how innovation is accelerating the development and improving the performance of frontier resources, the expanding role of seismic, and industry knowledge management trends. Prior to joining CERA, Mr. Jacobs worked at Mitchell Madison Group, a strategy consulting firm, where he served the energy and financial services sectors. His background in the upstream oil and gas sector includes engineering positions with Schlumberger Wireline Services and work as an exploration geologist in Anadarko Petroleum Corporation's international division. Mr. Jacobs hold a BSE from Princeton University and an MS in Geology from Stanford University.



Waleed Al-Mulhim

Manager, Southern Area
Reservoir Management,
Saudi Aramco



Rick Kennedy

Operations Manager -
West, Chevron North
America Upstream



Bernard Looney

Managing Director,
BP North Sea



Gerbert Schoonman

Asset Manager - East (EM)
Brunei, Shell Petroleum



Waleed Al-Mulhim is the Manager of Southern Area Reservoir Management Department in Saudi Aramco. Under his responsibilities, along with other fields, are the greater Ghawar field, Abqaiq field and all of the Non Associated gas Reservoirs. Waleed has overseen the reservoir development of the world's largest increment i.e. Khurais. Currently he is overseeing two non-associated gas plants development: Karan with 1.8 BSCFD and Wasit with 2.5 BSCFD. He has served in a number of Petroleum Engineering committees and taskforces and held several chief positions in Saudi Aramco. Waleed was the General Supervisor of the Reserves Assessment and Development Studies Division before assuming his current responsibilities. He also headed the Oil and Gas Production Planning Division. Waleed started his career in the Gas Reservoir Management Division and played a key role in the Kingdom's Non Associated Gas Program expansion through participation in the upstream side of Hawiyah and Haradh Gas Plants developments which added a combined capacity of 3.2 BSCFD. He was also part of the team who negotiated the Kingdom's Gas Initiative. Waleed was born in Al-Khobar, Saudi Arabia's Eastern Province. He studied Petroleum Engineering at the University of Southern California and received his Masters Degree from Stanford University. He completed the TUCK School of Business Program at Dartmouth College in New Hampshire and has completed Saudi Aramco's Management Development Seminar in Washington. His career in Saudi Aramco began in 1984.

Rick Kennedy recently transitioned to a new position as GM of the Marine Services Group within Chevron's Shipping Company. Previously he worked in Chevron's North America Exploration and Production Company where he was Operations Manager, Western Gulf of Mexico. In this prior role he was responsible for the day to day safety, environmental, production and cost performance of his assigned region. In addition, he facilitated integration of Chevron i-field projects into mature offshore oil and gas fields to enable more effective and efficient operations. i-field is Chevron's approach to the digital, or intelligent, field. During his 25 year career with Chevron Corporation, Rick has held a variety of technical and leadership positions in Chevron Canada Resources Company, Chevron Oil Field Research Company, Chevron USA Exploration and Production Company, Caltex Pacific Indonesia and now, Chevron Shipping Company. He also served on Chevron's Corporate Reserves Advisory Committee for three years. A native of Canada, Rick graduated from Texas A&M University in 1984 with a BSc degree in Petroleum Engineering.

Bernard Looney joined BP in 1991 as a Drilling Engineer, working in the North Sea, Vietnam and the Gulf of Mexico. By 2001 Bernard was responsible for drilling operations on Thunder Horse in the Deepwater Gulf of Mexico. He then moved into the Exploration and Technology Group, working for the Group Vice President. In 2005 Bernard became Senior VP of BP Alaska. He then became Executive Assistant to then CEO Lord Browne, and subsequently ran Tony Hayward's Executive Office. Bernard moved back to the North Sea in 2008, initially as VP for Norway and Infrastructure. In 2009 he became the Managing Director of BP's North Sea business, UK and Norway. Bernard has a degree in Electrical Engineering from University College Dublin, and a MS in Management from the Graduate School of Business at Stanford University.

Gerbert Schoonman has 19 years experience in the Oil & Gas industry in positions ranging from petroleum engineering, production operations, HSE, project management to asset management. Commenced career with NAM. Subsequently held various positions in the Shell Expro UK. From 2008 onward assumed the responsibility of Asset Manager for Brunei Shell Petroleum. The East Asset in Brunei, consists of 30+ Oil and Gas platforms of various vintage. The asset is critical to Brunei and produces roughly two thirds of the country's Oil and Gas. Gerbert has a Masters degree in Mechanical Engineering.

Ice Breaker Drinks Reception

MONDAY 22 MARCH, 1800 - 1930 - POLAR ROOM

KEYNOTE SPEAKER



Alan B. Lumsden

M.D., Professor and Chairman, Department of Cardiovascular Surgery, Methodist Hospital, Houston, USA

On Monday 22 March, during the ice breaker drinks reception, Dr Alan B. Lumsden, M.D., Professor and Chairman, Department of Cardiovascular Surgery will give a keynote address. Dr Lumsden believes that great benefit may be gained by exposing cardiovascular and imaging researchers to technology currently available in the oil and gas world, and has therefore created a problem-focused forum to analyse issues relevant to both the energy and medical worlds, presenting and discussing with opposite industry counterparts, in an exploration of complementary technologies.

INDUSTRIAL GAMING ADDRESS



Knut-Olav Fjell

MSc, Principal Researcher, Statoil Research Centre, Trondheim

This part of the ice breaker session is about "Industrial Gaming". Knut-Olav Fjell has been working with concept development on how to use technology elements from the gaming industry into the industrial domain. This work has been carried through together with StormFjord AS, a company with employees with gaming development background. Knut-Olav is part of the growing community believing that tomorrow's mission critical industrial appliances will be based on intuitive interaction with "gaming inside" applications.

Knut-Olav will give an introductory speech, which will be followed by a video presentation that will show different aspects of using game technology - in a very informal way.

Young Professionals Panel Session

TUESDAY 23 MARCH, 1400-1530 - SPARK ROOM

Using Social Media to Build Oilfield Capability and Discover and Develop Reservoirs.

Soon, the oil industry will consist of fewer experienced engineers, and more young professionals. This crew change is very significant particularly because the technology with which the engineers go about their daily business will be so different to that of the experienced engineer. What approaches should we be using? Should we build these approaches organically into existing work flows, training for example? Or should we leap to new platforms and leave the old behind?

Younger industry professionals will know how to use Facebook to build a friendship group and invite its members to a party, use Twitter to send micro blogs describing what they are doing to get the party ready, create a Google map to describe how to reach the party and have each of the party organisers post a 2 minute video clip on YouTube introducing the party.

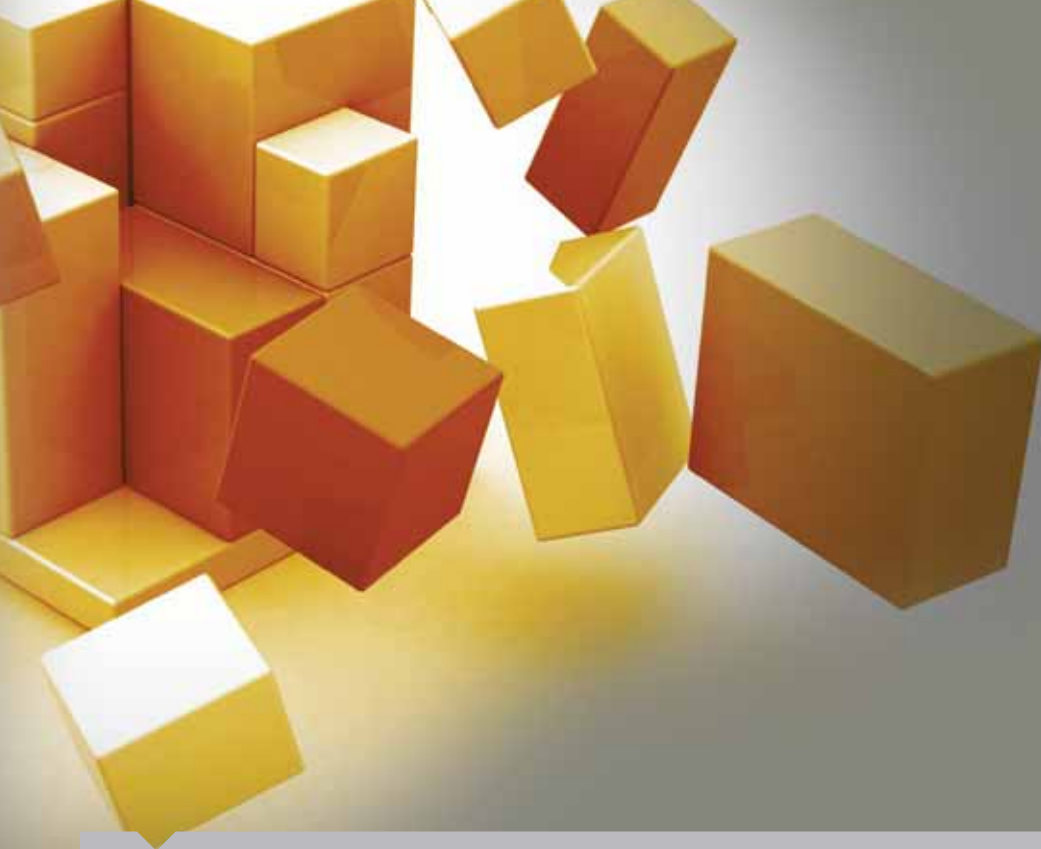
Can these tools and this collaborative open style of innovation be harnessed for our oil and gas industry?

What is the nature of the improvement that we hope to make? Is it cycle time, is it quality, is it efficiency?

Where will the leadership come from to make these transitions? What sort of waste could we expect to eliminate and how big is the prize?

Panel Speakers

- Moderator: Neil Kavanagh, Chief Science & Technology Manager, Woodside
- Damon Bland, Managing Director of Lean Transformations Ltd and the Director of Operational Excellence for Aleris (Europe) Ltd
- Patrick Calvert, Flow Assurance Engineer, BP
- Jonathan Cook, Geologist, Hess Denmark ApS
- Hay Kranen, Secretary for Wikimedia, The Netherlands



Business Leaders' & Asset Managers' Open Discussion Sessions

WEDNESDAY 24 MARCH 0830-1030, AND 1415-1745, SPARK ROOM

We have a special opportunity available for the second day of the conference. Open discussion sessions for asset managers and business leaders who are active and accountable for deployment; where those accountable for delivering on intelligent energy projects will be able to interact via:

- In-depth presentations from selected senior practitioners
- Open Discussions
- Topics include areas such as: operational successes; issues and lessons learned; barriers; performance results; behavioural impacts; culture and collaboration for sustainability...

Moderators:

- Mike Hauser, Manager, i-field; Chevron Global Upstream
- Judson Jacobs, Research Director, CERA

SESSION 1: 0830-1030 HOURS

- Trevor Garlick, Director and Vice President Resource, BP Exploration
- Astrid Helga Jørgenvåg, Vice President – Asset owner Åsgard – Mikkell, Statoil ASA
- Keith Killian, Programmatic Manager, ExxonMobil Production Company
- Derek Mathieson, President Technology and Product Lines, Baker Hughes

The sessions will be designed to allow ample time for Q&A and discussions, primarily between the asset managers and business leaders themselves. The maturity of many deployment areas has paved the way for this truly unique opportunity.

SESSION 2: 1415-1545 HOURS

- Birlie Bourgeois, First Principles Growth Project Manager, Chevron
- Klaus Mueller, Technology Manager Middle East & North Africa, Shell Upstream International
- Eric Verbrugge, Production Monitoring Team Leader, Total
- Cristina Pinho, E&P Operation and Maintenance General Manager, Petrobras

SESSION 3: 1615-1745 HOURS

- Hidde Hylkema, Production Optimisation Manager, BG E&P India Ltd.
- Ron Melnyk, Operations Engineering Manager, Occidental Mukhaizna L.L.C.
- Ton van den Heuvel, Operations Manager, Shell Groningen

TECHNICAL CONFERENCE PROGRAMME

OPENING SCENE-SETTER SESSION - TUESDAY 23 MARCH, POLAR ROOM, 0900-1015

Moderators:

- David Latin, Vice President Exploration & Production Technology, BP
- Brady Murphy, Vice President Europe-Sub-Saharan Africa, Halliburton

Keynote Address:

- Doug Suttles, Chief Operating Officer, BP Exploration & Production

1015-1045 Coffee Break and Knowledge Sharing Session 1
(see page 26 for full schedule)

TUESDAY 23 MARCH, POLAR ROOM, 1045-1230

PLENARY SESSION 1 - TODAY - VALUE IN ANY PART OF THE CYCLE

Moderator:

- Jon Rigby, Managing Director, UBS European Oil and Gas Research
- Matthias Bichsel, Director Projects and Technology, Shell
 - Melody Meyer, President, Chevron Energy Technology Company
 - Satish Pai, Vice President Operations, Schlumberger Oilfield Services
 - Tim Probert, President, Global Business Lines and Corporate Development, Halliburton

1230-1400 Lunch and Knowledge Sharing Session 2
(see page 26 for full details)

TUESDAY 23 MARCH, POLAR ROOM, 1400-1730

TECHNICAL SESSION 1: SHOWCASE FOR COMPANY WIDE PROGRAMMES

CHAIRPERSONS:

Pieter Kapteijn, Maersk Oil
Tofiq Dhubaib, Saudi Aramco

1400 **Business Value from Intelligent Fields**
SPE-128245 F. van den Berg and R.K. Perrons, Shell; I. Moore and G. Schut, Capgemini

1430 **Sustaining an Intelligent Energy Organization:
Insights on the Journey**
SPE-128326 S. Fanty, Chevron; S. Tobin, Accenture

1500 **Overview of Saudi Aramco's Intelligent Field Program**
SPE-129706 A. AbdulKarim, T. Al-Dhubaib, E. Elrafie and M.O. Alamoudi, Saudi Aramco

1530-1600 **Coffee Break and Knowledge Sharing Session 3**
(See page 26 for full schedule)

1600 **The BP FIELD OF THE FUTURE Programme:
The Continuing Mission To Deliver Value**
SPE-128672 J. Dickens, D. Latin, G. Verra, W. Blosser, G. Edmonds and G. Grimshaw, BP

1630 **Integrated Operations Methodology and Value Proposition**
SPE-128576 T. Lilleng and S.I. Sagatun, Statoil

1700 **The Art of Intelligent Energy (iE)—
Insights and Lessons Learned from the Application of iE**
SPE-128669 T. Edwards and Ø. Mydland, Stepchange Global; A. Henriquez, Henriquez Consulting

TUESDAY 23 MARCH, PRINS CLAUS, 1400-1730

TECHNICAL SESSION 2: SHOWCASES FOR DELIVERING VALUE

CHAIRPERSONS:

Philippe Flichy, IO-hub
Mark Lochmann, Halliburton

1400 **Realizing Value from Implementing i-field in a Deepwater
Greenfield in Offshore Nigeria Development**
SPE-127691 S. Sankaran, Halliburton; M. Olise and D. Meinert, Chevron; A. Awasthi, Halliburton

1430 **Multi-asset Production Support Centre—Generating Values**
SPE-127730 K. Lejon and K. J. Hersvik, Statoil; A. Bøe, Epsis

1500 **Lessons Learned From 100 Intelligent Wells
Equipped With Multiple Downhole Valves**
SPE-126089 S. Mubarak, N. Dawood and S. Salamy, Saudi Aramco

1530-1600 **Coffee Break and Knowledge Sharing Session 3**
(See page 26 for full schedule)

1600 **Remote Optimization Improves Drilling Performance in US Land**
SPE-128614 N. Estep, B. Parsons, R. Middleton and A. Alvi, Schlumberger

1630 **Installation and Implementation of "Smart Fields Foundation"
on a Brown Field Asset, Adding Value Without Major
Capital Investment**
SPE-127849 C.A. Gerrard, H. McCabe and A.D. Beck, Shell

1700 **Lessons Learned and Challenges from Global Deployment
of a Collaborative Work Environment Solution Across a
Super Major**
R. Knoppe, Shell; K. Gryskiewicz, Wipro Technologies

TUESDAY 23 MARCH, AUDITORIUM, 1400-1730

TECHNICAL SESSION 3: SHOWCASE FOR SIGNIFICANT IMPLEMENTATIONS

CHAIRPERSONS:

Mike Herbert, ConocoPhillips
Helen Ratcliffe, PIPC

1400 **Mega I-Field Application in the World's
SPE-128837 Largest Oil Increment Development**

W.A. Al-Mulhim, H.A. Faddagh, M.A. Shehab
and S.S. Shamrani, Saudi Aramco

1430 **State-of-Art Digital Oilfield Implementation
SPE-128766 in Petrobras Campos Basin**

C.B.C. Lima and G. Sobreira, Petrobras;
D. Rossi, A. Kumar and B. Sauvé, Schlumberger

1500 **Production Processes Integration for Large
SPE-128731 Gas Basin – Burgos Asset**

G. Sandoval, F. Martínez, A. Cadena, H. Bernal, E. De la Vega,
M. Navarro, M. García, I. Leal, L. Figón, A. Zambrano, J. Duran,
M. García, M. del Rangel and E. Garza, PEMEX; F. Corbellini,
M. Mota, H. Escalona, Y. Aguilar, A. Corona, A. Montes de Oca,
M. Tortolero, T. Díaz, N. Álvarez, E. Montes, E. Romero,
A. Suárez, J. Romay, F. Fuehrer, A. Al Kinani, R. Holy, G. Núñez
and J. Vernus, Schlumberger

1530-1600 **Coffee Break and Knowledge Sharing Session 3**
[See page 26 for full schedule]

1600 **Well and Reservoir Management Project at
SPE-128834 Salym Petroleum Development**

A. Mabian, Y. Volokitin, N. Beliakova, J.M. Genkin, A. Hagelaars,
M. Pickles and J. Diamond, Salym Petroleum Development

1630 **Advanced Collaborative Environments -
SPE-128650 The Growth of a Capability Transformation Programme**

S. Goodwin, A. Ford, P. Griffiths, K. Moore-
Cernoch, BP; P. Williams, Williams Consulting

1700 **Ten years from the front line - A decade of learning from
intelligent energy implementations**
H. Ratcliffe, PIPC

TUESDAY 23 MARCH, SPARK ROOM, 1400-1530

YOUNG PROFESSIONALS' PANEL SESSION

Moderator:

Neil Kavanagh, Chief Science & Technology Manager, Woodside

- Damon Bland, Managing Director of Lean Transformations Ltd and the Director of Operational Excellence for Aleris (Europe) Ltd
- Patrick Calvert, Flow Assurance Engineer, BP
- Jonathan Cook, Geologist, Hess Denmark ApS
- Hay Kranen, Secretary for Wikimedia, The Netherlands

1530-1600 **Coffee Break and Knowledge Sharing Session 3**
(see page 26 for full schedule)

TUESDAY 23 MARCH, SPARK ROOM, 1600 - 1730

TECHNICAL SESSION 4: Intelligent Operations and People

CHAIRPERSONS:

Adolfo Henriquez, Petoro AS
Adrian Chapman, IBM

1600 **The Future of Integrated Operations**
SPE-127715 J. Crompton, Chevron; H. Gilman, SAIC

1630 **Intelligent Energy Concepts in Executive**

SPE-127911 **Education for Oil & Gas Professionals**

P.K. Currie, TU Delft; C.F.M. Bos, TNO;
A.J. Berkhout and R. Weijermars, TU Delft

1700 **Digital Technology: An IOC's Perspective to Maximize
SPE-128764 People and Process for Efficient Hydrocarbon Recovery**
R.D. Spahr, ExxonMobil



WEDNESDAY 24 MARCH, POLAR ROOM, 0830-1030

TECHNICAL SESSION 5: PRODUCTION MONITORING

CHAIRPERSONS:

Tope Adeyemi, Chevron
Trond Lilleng, Statoil ASA

0830 **Virtues of a Virtual Person Monitoring All Real Aspects of All Production Facilities All of the Time**
SPE-127513
R. Cramer and L. Berendschot, Shell

0900 **Well Performance Monitoring (WPM): Creating Added Value from Raw Data - Application to the Girassol Deepwater Field Case**
SPE-128557
F. Khan, V. Goujard, P.H. Tincelin, M. Tison, H. Foucault and N. Kessler, Total

0930 **Recent Developments in Control and Monitoring of Remote Subsea Fields**
SPE-128657
B. Bringedal, E. Storkaas, M. Dalsmo and M. Aarset, ABB; H.M. With, SPT Group

1000 **Implementation of Dynamic Well Testing Workflows in Saudi Aramco Intelligent Fields**
SPE-128374
M.B. Issaka and M.M. Al-Buraikan, Saudi Aramco

1030-1100 **Coffee Break and Knowledge Sharing Session 4**
(see page 26 for full schedule)

WEDNESDAY 24 MARCH, PRINS CLAUS, 0830-1030

TECHNICAL SESSION 6: DRILLING: DELIVERING VALUE - TODAY AND TOMORROW

CHAIRPERSONS:

Mike Herbert, ConocoPhillips
Sanjay Kanvinde, Schlumberger

0830 **Real Time Integration of ECD, Temperature, Well Stability and Geo/Pore Pressure Simulations During Drilling a Challenging HPHT Well**
SPE-127809
R. Rommetveit, S.I. Ødegård and C. Nordstrand, eDrilling Solutions; K.S. Bjørkevoll, P. Cerasi, H.M. Helset, H. Borge and L. Li, SINTEF; M. Fjeldheim and S.T. Håvardstein, Total

0900 **The Influence of Data Quality on WorkFlows and Decision-Making in Well Delivery**
SPE-128418
S.J. Sawaryn, N. Whiteley, A. Deady, A. Borresen, BP; N. Gibson, Kongsberg Intellifield

0930 **Collaboration and Decision Support in Geosteering**
SPE-128721
R. Fjellheim, Computas / U. of Oslo; M. Herbert, ConocoPhillips; Ø. Arild, IRIS; R. Bisio, Institute of Energy Technology; Ø. Holo, Computas

1000 **Increasing Drilling Efficiencies through Improved Collaboration and Analysis of Real-Time and Historical Drilling Data**
SPE-128722
C. Staveley and P.I. Thow, Schlumberger

1030-1100 **Coffee Break and Knowledge Sharing Session 4**
(see page 26 for full schedule)

WEDNESDAY 24 MARCH, AUDITORIUM, 0830-1030

TECHNICAL SESSION 7: TOOLS AND TECHNIQUES ENABLING DECISION MAKING

CHAIRPERSONS:

Philippe Flichy, IO-hub
Tony Edwards, Stepchange Global Ltd

0830 **Creating a Digital Picture of our Integrated Operations within BP: Why a Picture Says a Thousand Barrels**
SPE-128709
P. Calvert, R. Heddle, B. Stenhouse and M. Woodman, BP

0900 **Decision Support and Monitoring Using Autonomous Systems**
SPE-128202
J. Ølmheim, E. Landre, Ø. Spillum, and V.Hepsø, Statoil

0930 **Integrating Data Mining and Expert Knowledge for an Artificial Lift Advisory System**
SPE-128636
E. De la Vega, G. Sandoval and M. Garcia, PEMEX; G. Nunez, A. Al-Kinani, R.W. Holy, H. Escalona, M. Mota, Schlumberger

1000 **Petroleum Enterprise Intelligence in the Digital Oil Field**
SPE-127355
L.R. Records, CSC; D. Shimbo, Oracle

1030-1100 **Coffee Break and Knowledge Sharing Session 4**
(see page 26 for full schedule)

WEDNESDAY 24 MARCH, SPARK ROOM, 0830-1030

BUSINESS LEADERS' & ASSET MANAGERS' OPEN DISCUSSION SESSION

See page 18 for full details

1030-1100 **Coffee Break and Knowledge Sharing Session 4**
(see page 26 for full details)

WEDNESDAY 24 MARCH, POLAR, 1100-1245

PLENARY SESSION 2 - TAKING THINGS TO THE NEXT LEVEL

Moderator:

Pieter Kapteijn, Director Technology and Innovation, Maersk Oil
• Ashok Belani, Chief Technology Officer, Schlumberger Limited
• John Brantley, General Manager for Chemicals and Petroleum, IBM
• Margareth Øvrurn, Executive Vice President - Technology and New Energy, Statoil ASA
• Samer AlAshgar, Manager, EXPEC Advanced Research Center, Saudi Aramco

1245-1415 **Lunch and Knowledge Sharing Session 5**
(see page 27 for full details)

WEDNESDAY 24 MARCH, POLAR ROOM, 1415-1745

TECHNICAL SESSION 8: PRODUCTION OPTIMISATION

CHAIRPERSONS:

Jeff Dickens, BP
Tope Adeyemi, Chevron

- 1415 **Planning for a Sustainable Production Optimisation Solution**
SPE-128674 S.S. Davidson, PIPC; S.M. Mos, Chevron; S. Coppock, SAIC
- 1445 **Optimization of Stimulation Treatments in Naturally Fractured Carbonate Formations through Effective Diversion and Real-Time Analysis**
SPE-126136 F. Cantaloube, R. Spickett and K. Yekta, Schlumberger; M. Anderson, Suncor
- 1515 **Real-Time Intelligent Production Monitoring of a North Sea Asset**
SPE-128300 R. van der Linden, TNO; H. Reijn, Wintershall; E. Muñoz and F. de Wolff, Wintershall; W. Renes, TNO
- 1545-1615 **Coffee Break and Knowledge Sharing Session 6**
(see page 27 for full schedule)
- 1615 **Methodology for Oil Production-Loss Control in a Digital Oilfield Implementation**
SPE-127517 A. García, L. Machado, G. Singh and D. Martins, Halliburton; P.S. de Sousa and M. Herdeiro, Petrobras
- 1645 **A Dynamic Business Needs Dynamic Solutions; How Field of the Future Has Turned BP into a Smooth Operator**
SPE-128682 P. Calvert and J. Davis, BP
- 1715 **Smart Operations With Intelligent Well Systems**
SPE-126246 A.S. Cullick and T. Sukkestad, Halliburton

WEDNESDAY 24 MARCH, PRINS CLAUS, 1415-1745

TECHNICAL SESSION 9: TRANSFORMATIONAL SOLUTIONS

CHAIRPERSONS:

Frans van den Berg, Shell International E&P
Ian Moore, Capgemini Consulting

- 1415 **Energy and Environment: The Ultimate Test of E&P "Intelligence"**
SPE-128999 P. Kapteijn, Maersk Oil
- 1445 **Pipeline Management Using Shell Model Optimizing Control and Lagosa—Effectively Leveraging Downstream Expertise in the Upstream**
SPE-128737 E. van Donkelaar, J. van Opstal, S. de Wolf and R. La Riviere, Shell; W. Sturm, NAM
- 1515 **Applying the Social Dimension to Business Challenges**
SPE-128421 J. Morrison, A. McKnight and M. Setrem, BG Group
- 1545-1615 **Coffee Break and Knowledge Sharing Session 6**
(see page 27 for full schedule)
- 1615 **Leveraging Web 2.0 Technologies For Innovation Capture**
SPE-128527 A.R. Watt, Woodside Energy
- 1645 **Digital Platform for the Next Generation IO: A Prerequisite for the High North**
SPE-127550 F. Verhelst, DNV/Epsis; F. Myren, IBM; P. Rylandsholm, DNV; I. Svensson, Baker Hughes; A. Waaler, U. of Oslo; T. Skramstad, DNV/NTNU; J.I. Ornæs, National Oilwell Varco; B.H. Tvedt, Epsis; J. Høydal, Statoil
- 1715 **Enabling an Intelligent Energy Strategy through Industrialization of IT**
SPE-127754 C. Hill, Schlumberger

WEDNESDAY 24 MARCH, AUDITORIUM, 1415-1745

TECHNICAL SESSION 10: THE PEOPLE AND ORGANISATIONS TO DELIVER VALUE

CHAIRPERSONS:

Domenico Di Renzo, Eni
Mark Lochmann, Halliburton

- 1415 **Next Steps to a Framework for Global Collaboration to Drive Business Performance**
SPE-126207 V. Hepsø and H.H. Olsen, Statoil; F. Joannette, SBT Advisors; F. Brych, Cisco
- 1445 **A Journey to Improvement; Value from Central Support Using an Integrated Collaborative Environment**
SPE-128413 S.J. Roberts, M. Setrem and N. Pierpoint, BG Group; P. Forbes, IBM
- 1515 **Business as Usual or Silos of Excellence: Operationalising Intelligent Energy Through All Production Functions**
SPE-128719 C. Morris and D. Taylor, SAIC
- 1545-1615 **Coffee Break and Knowledge Sharing Session 6**
(see page 27 for full schedule)
- 1615 **The Role of Human Factors Integration and Change Management Coaching in Integrating Multidisciplinary Teams Working in Collaborative Work Environments**
SPE-128616 K. Mueller, PDO; C. McClelland and A. Anvar, SAIC
- 1645 **Creating an Intelligent Energy Organization through Collective Learning**
SPE-128670 T. Korsvold and B.E. Madsen, SINTEF; B. Bremdal, Narvik U. College; M. Herbert, ConocoPhillips; E. Nystad, IFE; J.E. Danielsen, Bouvet
- 1715 **Smart Oil and the Development of the Networked Organisation**
SPE-128452 A. Chapman and P. Forbes, IBM

WEDNESDAY 24 MARCH, SPARK ROOM, 1415-1545

BUSINESS LEADERS' & ASSET MANAGERS' OPEN DISCUSSION SESSION

See page 18 for full details

- 1545-1615 **Coffee Break and Knowledge Sharing Session 6**
See page 27 for full details

WEDNESDAY 24 MARCH, SPARK ROOM, 1615-1745

BUSINESS LEADERS' & ASSET MANAGERS' OPEN DISCUSSION SESSION

See page 18 for full details



THURSDAY 25 MARCH, POLAR ROOM, 0830-1030

TECHNICAL SESSION 11: RESERVOIR MANAGEMENT

CHAIRPERSONS:

Jeff Dickens, BP
Trond Lilleng, Statoil ASA

- 0830 **The Operation of the Multiphase Flow Meters on the Sour Environment of Qatif Field: Case Study**
SPE-126592 F.M. Al-Dossary and A. A. Al-Ghamdi, Saudi Aramco
-
- 0900 **Greater Plutonio - Real Time Reservoir Management in a High Cost, Deepwater Environment**
SPE-128542 D. Booth and P. Sebastiao, BP Angola
-
- 0930 **A Case Study Production Management Solution "Back Allocation and Advance Well Monitoring" - Litoral de Tabasco Asset**
SPE-127924 G. Olivares and O. Perez, Pemex; C. Escalona, C. Vargas, M. Baarda and J-C. Vernus, Schlumberger
-
- 1000 **Continuous Improvement Through Real-Time Data: Integration into Reservoir Management Workflows**
SPE-128660 T.K. Kragas and O.M. Gokdemir, BP

1030-1100 **Coffee Break and Knowledge Sharing Session 7**
(see page 27 for full schedule)

THURSDAY 25 MARCH, AUDITORIUM, 0830-1030

TECHNICAL SESSION 13: UNDERSTANDING BUSINESS MODELS & BUSINESS CASES

CHAIRPERSONS:

Mark Miller, Cisco
Sanjay Kanvinde, Schlumberger

- 0830 **Is It Essential To Change The Way We Buy Digital Oilfield Capabilities To Get The Benefits We Want? How Do These Capabilities Affect Relationships With Service Providers?**
SPE-128498 M. Popham, BAE Systems; T. Edwards, Stepchange Global
-
- 0900 **Implementing New Business Model Securing**
SPE-127799 **Real-time Drilling Data Onshore**
T. Halland, D. Solnordal, H.F. Larsen, L.K. Jensen, F.J. Lande and O. Berggraf, Statoil
-
- 0930 **Benefits Quantification and Change Management in Petrobras Corporate Program for Digital Integrated Field Management (GeDIG)**
SPE-128675 E. E. R. Russo, J. C. Amoroso and T. A. Rolim, Petrobras
-
- 1000 **Perdido: The First Smart Field in the Western Hemisphere**
SPE-127858 R.K. Perrons, Shell

1030-1100 **Coffee Break and Knowledge Sharing Session 7**
(see page 27 for full schedule)

THURSDAY 25 MARCH, PRINS CLAUS, 0830-1030

TECHNICAL SESSION 12: MONITORING AND MAINTENANCE

CHAIRPERSONS:

Frans van den Berg, Shell International E&P
Philippe Flichy, IO-hub

- 0830 **Predictive Analytics and Collaboration Drive Reliability Performance**
SPE-128745 T. Snyder, SmartSignal
-
- 0900 **Multi-disciplinary, Multi-user Process Monitoring: Cross-discipline Development and Cross-company Collaboration**
SPE-128558 E. Lunde, Statoil; K. Hovda and J. Spjøtvold, ABB
-
- 0930 **Machinery Predictive Analytics**
SPE-128559 Z. Rawi, BP
-
- 1000 **"The Predictive Organisation"—How the Defence Sector Improved Asset Availability and Integrity**
SPE-128497 M. Popham, BAE Systems; D. Keely, Cisco

1030-1100 **Coffee Break and Knowledge Sharing Session 7**
(see page 27 for full schedule)

THURSDAY 25 MARCH, SPARK ROOM, 0830-1030

TECHNICAL SESSION 14: SOLUTIONS DELIVERING VALUE TODAY

CHAIRPERSONS:

Pieter Kapteijn, Maersk Oil
Tofiq Dhubaib, Saudi Aramco

- 0830 **I-Field Data Acquisition and Delivery Infrastructure: Khursaniyah Field Best in Class Practices: Case Study**
SPE-128659 S.M. Almadi, T.A. Al Dhubaib, H.A. AhmadHusain, S.A. Al Walaie, F.M. Al Khabbaz, O.A. Alaidarous and S.F. Al Temyatt, Saudi Aramco
-
- 0900 **A Guided Workflows Approach to Oil Field Management**
SPE-128551 S. Daum and R. Getty, PDS; F. van den Berg, Shell; R. Clinton, PDO
-
- 0930 **Field and Installation Monitoring Using On Line Data Validation and Reconciliation—Application to Offshore Fields in Middle East and West Africa**
SPE-128717 J.P. Couput and R. Caulier, Total; U. Wising, BELSIM
-
- 1000 **Semantic Web Technologies for Event Modeling and Analysis: A Well Surveillance Use Case**
SPE-128708 T. Zhu, USC; A. Bakshi, Chevron; V.K. Prasanna, USC; R. Cutler, Chevron

1030-1100 **Coffee Break and Knowledge Sharing Session 7**
(see page 27 for full schedule)

THURSDAY 25 MARCH, POLAR ROOM, 1100-1245

PLENARY SESSION 3 - MAKING INTELLIGENT ENERGY HAPPEN

Moderators:

Mike Hauser, Manager, i-field; Chevron Global Upstream
Judson Jacobs, Research Director, CERA

- Bernard Looney, Managing Director, BP North Sea
- Gerbert Schoonman, Asset Manager - East, Brunei Shell Petroleum
- Rick Kennedy, General Manager, Marine Services Group, Chevron Shipping Company
- Waleed Al-Mulhim, Manager, Southern Area Reservoir Management, Saudi Aramco

1245-1345 Lunch and Knowledge Sharing Session 8 (see page 27 for full schedule)

THURSDAY 25 MARCH, POLAR ROOM, 1345 - 1545

TECHNICAL SESSION 15: REAL-TIME PRODUCTION SURVEILLANCE

CHAIRPERSONS:

Domenico Di Renzo, Eni
Tope Adeyemi, Chevron

- 1345 **Closing the Loop __ Integrating Predictive Surveillance With Remote Control Operations**
SPE-128761 C.B.C. Lima, L.L. Diniz and G. Sobreira, Petrobras; D. Rossi and A. Kumar, Schlumberger
- 1415 **Asset-Wide Reconciled Production Monitoring—A Key Enabler to Successful Real-Time Field Management**
SPE-128654 K. Ibrahim, D. Narayansamy and M.Y. Jaber, Brunei Shell; J. Briers, K.C. Goh and F. de Boer, Shell
- 1445 **Use of Real-Time Data in Well Integrity Management**
SPE-128688 A.A. Chitale, W.R. Blosser and B.J. Arias, BP
- 1515 **An Implementation of On-line Well Virtual Metering of Oil Production**
SPE-127520 A. García, I. Almeida, G. Singh and S. Purwar, Halliburton; M. Monteiro, L. Carbone and M. Herdeiro, Petrobras

THURSDAY 25 MARCH, PRINS CLAUS, 1345-1545

TECHNICAL SESSION 16: MODELLING TO ADD VALUE

CHAIRPERSONS:

Frans van den Berg, Shell International E&P
Trond Lilleng, Statoil ASA

- 1345 **Benefits From Implementing an Integrated Asset Operations Modelling System**
SPE-127893 A.A. Bin Amro, D. Sakaria and Y. Lestari, ADCO; N. McAlonan and A.J. Shere, Weatherford
- 1415 **Integrated Production Model Calibration Applied to a Gulf of Mexico Sub-Sea Field**
SPE-128137 L. Saputelli, S. Rudolph, and J. Embser, Hess
- 1445 **Application of a Real-Time Dynamic Model-Based Production System for Operations and Surveillance of Oil & Gas Gathering Networks**
SPE-128133 A. Alva-Argaez, J. Holoboff and M.K. Khoshkbarchi, Process

Ecology; W. van Wassenhove, Aspen Technology; D. Cutting, Pioneer Resources

- 1515 **Model Based Operational Support - Adding Assurance to Operational Decision Making**
SPE-128694 B. Stenhouse, M. Woodman, P. Griffiths, BP

THURSDAY 25 MARCH, AUDITORIUM, 1345-1545

TECHNICAL SESSION 17: COLLABORATION

CHAIRPERSONS:

Mark Miller, Cisco
Tony Edwards, Stepchange Global Ltd

- 1345 **A Step Forward in Collaborative Well Planning: Deployment Challenges Under Windows Platform for Drilling Application in the Ekofisk Operations**
SPE-128729 N.E. Lahlah, Halliburton; M. Herbert and K. Bashford, ConocoPhillips
- 1415 **Enhancing Asset Performance: How can the Benefits of Collaborative Work Environments be Effectively Measured?**
SPE-128713 Y. Adefulu, Shell
- 1445 **Development and Adoption of Remote Assisted Operations Capabilities in the Gulf of Mexico**
SPE-127861 M. Chevis, Shell; C. Weiss, Booz & Co.
- 1515 **Intelligent Field Centers (IFCs): Integrating People, Processes and Technologies to Optimally Manage Giant Fields**
SPE-128469 M. F. Barghouty and T. A. Al Dhubaib, Saudi Aramco; A. A. Jama and O. Jaimes, Schlumberger

THURSDAY 25 MARCH, SPARK ROOM, 1345-1545

TECHNICAL SESSION 18: Creating Opportunities

CHAIRPERSONS:

Adrian Chapman, IBM
Spencer Roberts, BG Group

- 1345 **Antipatterns: A Tool for Continuous Improvement**
SPE-128596 D.R. Feineman, BP
- 1415 **Robotics for Integrated Remote Operations**
SPE-128232 J. Pretlove, C. Skourup and J. Gunnar, ABB; A. Røyrvåg, Statoil
- 1445 **Front End Loading for Change Management and Capability Delivery**
SPE-128227 M. Popham, BAE Systems
- 1515 **Multi-Company-Design-Efforts in the European Aerospace Industry**
SPE-128725 H. Wenzel, SIMULIA SLM Europe

THURSDAY 25 MARCH, POLAR ROOM, 1545-1615

WRAP UP SESSION

- David Latin, Vice President Exploration & Production Technology, BP
- Brady Murphy, Vice President Europe-Sub-Saharan Africa, Halliburton
- Melody Meyer, President, Chevron Energy Technology Company
- Helen Ratcliffe, Managing Consultant, PIPC (Programme Committee Chair)

KNOWLEDGE SHARING PRESENTATIONS

TUESDAY 23 MARCH, EXHIBITION FLOOR, 1020–1040

KNOWLEDGE SHARING SESSION 1

SCREEN: 1

1020 **New Opportunities for Emergency Handling in the Intelligent Energy Organization**

C.K. Tveiten, NTNU; E. Albrechtsen and I. Wærø, SINTEF; A.M. Wahl, MARINTEK

1030 **Enough is Enough: Data Sufficiency**

R. Bailey, E. Ziegel, K. Sprague and B. Hedges, BP

SCREEN: 2

1020 **Safety Presentation in Large Screen Displays—A New Approach**

U. Weyer, A.O. Braseth, M. Eikås, L. Hurten and P. Kristiansen, Institute for Energy Technology

1030 **Intelligent Visualization for Decision Support**

in Supervision and Control

T.G. Graven and M. Högborg, ABB

TUESDAY 23 MARCH, EXHIBITION FLOOR, 1300–1340

KNOWLEDGE SHARING SESSION 2

SCREEN: 1

1300 **Improving Allocation and Hydrocarbon Accounting Accuracy Using New Techniques**

R. Cramer and D. Schotanus, Shell Global Solutions; K. Ibrahim, Brunei Shell Petroleum; N. Colbeck

1310 **Bridging the Gap Between Deploying Collaborative**

Applications and Generating Value

C. Burress and K. Paylow, Halliburton

1320 **High Speed Network for Intelligent Field Data Acquisition**

S. Almadi, F. Al-Khabbaz, S. Al-Walaie, S. AL-Harbi, A. Al-Amri and H. Al-Gharairy, Saudi Aramco

1330 **Factors for Successful Deployments**

G. Hickey, A. Crossland, A. Fox and M. Skile, BP

SCREEN: 2

1300 **Managed Pressure Drilling: A Multi-Level Control Approach**

Ø. Breyholtz, G. Nygaard, and H. Siahaan, IRIS; M. Nikolaou, U. of Houston

1310 **Implementing Integrated Operations in a**

Mobile Offshore Production Service Provider

R. Bye, Teekay Petrojarl; L. Hansson and E. Okstad, SINTEF

1320 **The Life Cycle Simulator From Concept to**

Commissioning... and Beyond

S. McArdle and D. Cameron, Kongsberg Oil & Gas; K. Meyer, Statoil

1330 **Probabilistic Modeling for Decision Support**

in Integrated Operations

M. Giese, U. of Oslo; R.B. Bratvold, U. of Stavanger

TUESDAY 23 MARCH, EXHIBITION FLOOR, 1535–1555

KNOWLEDGE SHARING SESSION 3

SCREEN: 1

1535 **Real-Time Drilling Operations Centers: A History of Functionality and Organizational Purpose—The Second Generation**

J.E. Booth, Booth Consulting

1545 **Urucu Field Integrated Production Modeling**

Y. S.R.V. Campos, Petrobras / NTNU; A.F. Teixeira and L.F. Vieira, Petrobras; S. Sunjerga, PERA

SCREEN: 2

1535 **Remote Real Time Well Testing—Experience**

in the Grove Gas Field in the North Sea

S. Sikandar and A. Badr, Centrica Resources; Y. Shumakov, B. Theuveny, M. McMillon, S. Sarac and A. Fuentes, Schlumberger

1545 **Unconventional Hydrocarbons: Intelligent Integration**

and Operation

B. Tye, PIPC

WEDNESDAY 24 MARCH, EXHIBITION FLOOR, 1035–1055

KNOWLEDGE SHARING SESSION 4

SCREEN: 1

1035 **Attitude of Collaboration, Real-Time Decision**

Making in Operated Asset Management

O.O. Al Meshabi and M.M. Khazandar, Saudi Aramco / Berri Gas Plant; H. Orenstein, SAS Institute

1045 **Using 3-D Virtual Models for Real-time**

Operations: A Practical Case Study

B. Stafford and M. Hauser, Chevron

SCREEN: 2

1035 **A New Approach to Knowledge Capture: Center of**

Excellence for Sand Control Completions as a Model

D.M. O'Neill, L.R. Walls, E. Van Sickle and B. Baker, Baker Hughes

1045 **Improved Coordination with Integrated**

Planning: Organisational Capabilities

L.S. Ramstad, K. Halvorsen and A.M. Wahl, MARINTEK



WEDNESDAY 24 MARCH, EXHIBITION FLOOR, 1315–1345

KNOWLEDGE SHARING SESSION 5 SCREEN: 1

- 1315 **Downhole Flow Control for High Rate Water Injection Applications**
SPE-128653 B. Williams and M. Barrilleaux, BP
- 1325 **An Integrated Framework for SAGD Real-Time Optimization**
SPE-128426 M. Mohajer, C. Damas, A.J. Berbin Silva and A. Al-Kinani, Schlumberger
- 1335 **The Norne Field Case—A Unique Comparative Case Study**
SPE-127538 R. Rwechungura, E. Suwartadi, M. Dadashpour, J. Kleppe and B. Foss, NTNU

SCREEN: 2

- 1315 **Creating Value and Enhancing Operational Efficiency With the Subsea e-Field**
SPE-128705 R. Phillips and S. Holley, GE Oil & Gas
- 1325 **Virtual Flowrate Metering in Subsea Producers and Injectors Enables Integrated Field and Reservoir Management: Don Development Case Study**
SPE-128678 M. Loseto and J. Chacon-Fonseca, Matrikon; A. Suat Bagci, Eclipse Petroleum; and R. Gilbert, Petrofac Energy Developments
- 1335 **Exception Based Surveillance**
SPE-127860 J. Yero and T.A. Moroney, Shell

WEDNESDAY 24 MARCH, EXHIBITION FLOOR, 1550–1610

KNOWLEDGE SHARING SESSION 6 SCREEN: 1

- 1550 **Wireline Formation Testing – Networking a Globally Distributed Team for Optimal Reservoir Characterization**
SPE-128661 P. Weinheber, A. Gisolf and V. Achourov, Schlumberger
- 1600 **Organizational Structures in Collaborative Work Environments: The Return of the Matrix?**
SPE-128274 E. Guldmond, Radboud U. Nijmegen; K. ten Have, TNO; R. Knoppe, Shell

SCREEN: 2

- 1550 **We Have Built the Rooms, Our Work Processes are in Place – But Now What – Where is the Value?**
SPE-128683 K. Haugland, Epsis
- 1600 **Collaborative Environment Infrastructure in Al-Khafji Joint Operations, A Case Study**
SPE-127928 M.I. Bedaiwi, KJO; M.A. Dharmawan, Schlumberger

THURSDAY 25 MARCH, EXHIBITION FLOOR, 1035–1055

KNOWLEDGE SHARING SESSION 7 SCREEN: 1

- 1035 **First Installation of 5 ESPs Offshore Romania – A Case Study and Lessons Learned**
SPE-127593 L.A.P. Camilleri, Schlumberger; T Banciu and G Ditoiu, Petrom
- 1045 **Intelligent Pipeline Design and Construction**
SPE-127880 R.N. Burke and T. Ody, Pipestream

SCREEN: 2

- 1035 **Proactive Maintenance in the Context of Integrated Operations Generation 2**
SPE-128407 U. Skytte af Sättra, FMC Technologies; R. Christensen, GDF; A.S. Tanase and A. Tanase, IKM Operations; I. Koppervik and E. Rokke, FMC Technologies
- 1045 **Information Enabled Oil and Gas Production and Compression Systems**
SPE-128597 V. Vlatkovic, F. D'Amato, A. Baldassarre and M. Ehteshami, GE Energy Oil & Gas

THURSDAY 25 MARCH, EXHIBITION FLOOR, 1315–1335

KNOWLEDGE SHARING SESSION 8 SCREEN: 1

- 1315 **Evolution in Optical Downhole Multiphase Flow Measurement: Experience Translates into Enhanced Design**
SPE-126741 Ö.H. Ünalmiş, E.S. Johansen and L.W. Perry, Weatherford

SCREEN: 2

- 1315 **Delivering Value by Continuous and Automated Production Monitoring and Optimization**
SPE-127915 J. Vilanova, Kongsberg Intellifield; C. Alvarez, OVS Group
- 1325 **Case History - Steam Injection Monitoring with Optical-Fiber-Distributed Temperature Sensing**
SPE-127937 M.A.P. Batocchio, Halliburton; A.L.C. Triques, H.L.C. Pereira Pinto, L. A.S. de Lima, C.F.S. Souza and R.G. Izetti, Petrobras

Show Information

CONFERENCE SESSIONS

The conference sessions will take place at the Jaarbeurs, Utrecht in Spark, Polar and Prins Claus rooms and the Auditorium. Only delegate badge holders will be permitted access into the conference sessions.

KNOWLEDGE SHARING PRESENTATIONS

These will take place on the exhibition floor on all 3 days of the event. For the full schedule please see pages 26, 27.

EXHIBITION HALL

Entrance into the exhibition is free of charge to all registered visitors and delegates.

OPENING TIMES

Conference Registration Exhibition Hall

Monday 22nd March

1400 – 1800

Tuesday 23rd March

0800 – 1700

Tuesday 23rd March

0900 – 1830

Wednesday 24th March

0800 – 1700

Wednesday 24th March

0900 – 1800

Thursday 25th March

0800 – 1545

Thursday 25th March

0900 – 1600

RESTAURANTS & BARS

There is a café located in the centre of the exhibition floor which will be open to delegates only between 1230 and 1415 each day of the conference. Delegates will be able to purchase food using their lunch vouchers which are

provided in the delegate pack. The café is open to all Intelligent Energy attendees to purchase food and beverages at all other times. Lunch vouchers can also be purchased for this period at registration and will be charged at €27. Alternatively there are other catering facilities within the venue.

COFFEE BREAKS

Coffee will be served in the café located in the exhibition hall on each morning and afternoon of the event – see conference overview for exact timings.

DRINKS RECEPTION

A drinks reception for all attendees of Intelligent Energy will take place in the exhibition hall from 1730 on Tuesday 23 March.

ATM & CLOAKROOM

There is an ATM machine located in the venue, near the West entrance. There are also cloakroom facilities available within the venue near to the West entrance. All items are left at the owners risk and may be subject to search; E&P Events LLP accepts no responsibility for any article lost or damaged.

FIRST AID

The first aid room is located close to the East entrance.

CANVASSING & DISTRIBUTION

Canvassing for orders by any unauthorised person is strictly prohibited and the display or distribution of printed material, except by exhibitors on their own stands is also prohibited.

CONFERENCE PROCEEDINGS SPONSORED BY

One copy of the conference proceedings is included in the full delegate registration fee. After the conference, additional copies of the proceedings may be ordered by contacting books@spe.org. Additional copies of the Conference Proceedings may be purchased for €75 (SPE Members) or €100 (Non-Members).



INTERNET ACCESS

Jaarbeurs, Utrecht offers free of charge wireless internet access, to access the network please select KPN as the wireless network and then follow the login page instructions. You can get more information or help with this service from any of the venue's information desks.

PRESS OFFICE

The Press Office is located behind the registration area. The press office will only be open on 23 March, all enquiries after that date should be directed to the Show Management office also located behind the registration area. A number of press briefings will be given here and the suite provides a dedicated area for Press and Journalists to utilise.



LOST PROPERTY

Please do not leave any baggage unattended; any such article will be removed from site. Contact the Show Management office in the Registration area for lost or found property.

SECURITY

Admission is restricted to those engaged in bona fide areas of the upstream oil and gas exploration and production industry.

- Do be 'security aware' and vigilant at all times – if you see a suspicious person or object please alert the nearest hall manager or a member of the organiser's staff
- Do co-operate fully with the security instructions that you may be given
- Do not leave valuables or confidential documents unattended
- Do not touch or move any suspicious object
- In the event of an emergency do not run

EMERGENCY EVACUATION

Should an emergency occur that necessitates the evacuation of Jaarbeurs an announcement will be made over the PA system. Please follow the instructions from security or a member of the Jaarbeurs staff where they will instruct you on which assembly point you should go to. Walk – do not run to the nearest exit point and make your way to the assembly point. Avoid using mobile phones at this time. Once at the assembly point you will be kept informed of developments. When the emergency has eased you will either be invited back into the event area to resume normal business or advised to return on the following day – in which case you

will not be permitted to return to the exhibition to collect vehicles, bags, briefcases etc. If you discover a fire, please call the Jaarbeurs emergency room on +31 30295 5666.

SHOW MANAGEMENT

The Show Management office is located in the registration area.

AUTHOR ROOM

The Author Room is located next to Polar Room in the main conference area.

ADMISSIONS POLICY

1. Only pre-registered Intelligent Energy visitors who are badge holders, visitors who register on the day and exhibitor badge holders will be able to attend Intelligent Energy.
2. Visitors should be involved in or have some connection or interest in Intelligent Energy and associated industries.
3. Badge holders must not allow their badges to be worn by anyone else. Any failure is likely to lead to the badge holder and the person wearing the badge being removed from Intelligent Energy.
4. Anyone obtaining a Intelligent Energy visitor or exhibitor badge by theft, deception or other illegal means may be asked to leave Intelligent Energy.
5. Anyone attending Intelligent Energy should carry some form of photo-ID (passport, photo-ID driving licence, national identity card) or other identification acceptable to the Organisers which the Organisers may ask to see.
6. No one under the age of 16 will be able to attend Intelligent Energy.
7. Anyone attending Intelligent Energy must not

take part in any canvassing, leafleting, demonstrations, objectionable behaviour or any activity which may disrupt Intelligent Energy.

8. The Organisers reserve the right to exclude or remove anyone from Intelligent Energy and the venue who do not comply with this policy or who they reasonably consider are likely to break these rules.

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DISCLAIMER

The description of exhibits in this catalogue is based on particulars supplied by the exhibitors, which have been edited to conform to the standard format. The organisers accept no responsibility for the statements made therein, nor any errors or omissions that may have occurred. HM Revenue and Customs has certified this exhibition as an approved exhibition under the terms of the Temporary Importation (Goods and Exhibition) Regulation 1963. The conditions set out in Notice 2013 will apply in respect of any goods for the exhibition.

THE VENUE

Jaarbeurs Utrecht,
Jaarbeursplein,
3521 AL Utrecht

Intelligent Improvement

Kongsberg Oil & Gas Technologies offers a world-class portfolio of integrated tools and services designed to enable Intelligent Improvement.

LIFECYCLE SIMULATION

Lifecycle simulation is a proven and powerful best practice that helps reduce cost and improve efficiency in all phases of a field development project. Dynamic process simulation is part of the lifecycle approach and should be used for; process design verification, control system design and verification, process safety checks, operating procedure design and verification, operator training, and as a test bench for future modifications and optimisations in the operation phase.

K-Spice[®] is Kongsberg Oil & Gas Technologies' new dynamic process simulator. It combines the best features from the company's existing process simulation tools, ASSETT[®] and D-SPICE[®], with new and improved features for system management, thermodynamics, numerical solvers and a flexible and intuitive graphical user interface.

FLOW ASSURANCE

Ledaflow[®] is the product of a decade of collaboration between Total, ConocoPhillips and SINTEF and has been further developed as a unique integrated tool for oil and gas engineers by the experts at Kongsberg Oil & Gas Technologies. It's a true next generation solution that meets significant market demand and for improved dynamic multiphase flow simulation.

Being based on rigorous multiphase flow models, LedaFlow[®] provides a step change in fidelity, quality, accuracy and flexibility over current generation multiphase flow simulation technology. It is built using detailed three-

dimensional physical modelling and has been validated against the best available, most comprehensive experimental data.

LedaFlow[®] seamlessly integrates with the K-Spice[®] dynamic process simulation tool and the Kongsberg Oil & Gas Technologies suite of solutions for digital oil fields and integrated operations. Kongsberg Oil & Gas Technologies is the only vendor currently able to provide a suite of proprietary tools that deliver integrated facility simulation systems and services through all stages of the asset lifecycle - from feasibility studies to operation and maintenance, with flow assurance throughout every stage.

3DV SIMULATION

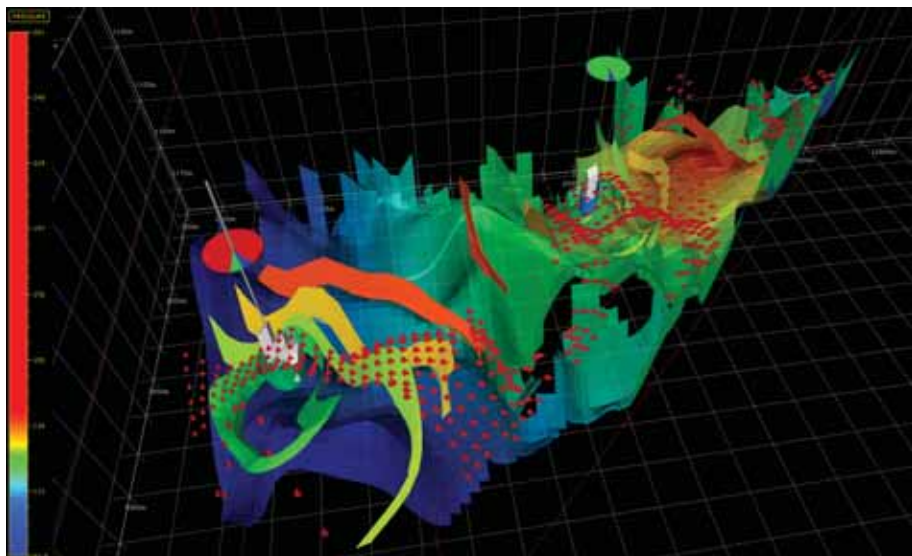
SIM Reservoir is a powerful visualisation tool that helps reservoir engineers make the right decisions to increase production rate and recovery factor, and reduce costs. Important

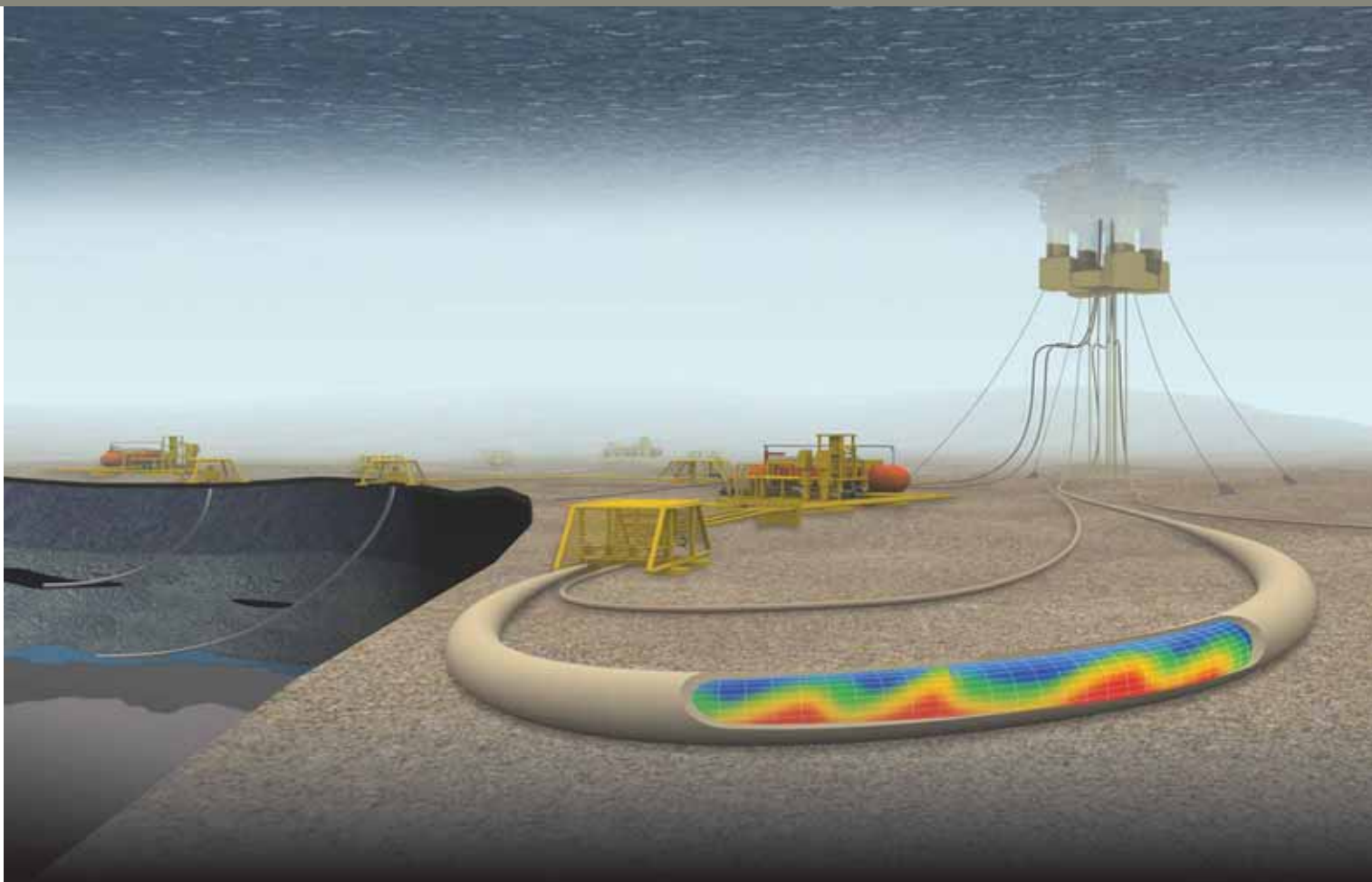
decisions are made at the end of the seismic to simulation workflow. SIM Reservoir is an intuitive reservoir simulation post processing tool for visualisation and decision making.

It has been designed from the ground up to enable all involved personnel to collaborate efficiently, make better decisions and communicate their results effectively. All parts of the decision making process are supported by a convenient and flexible user interface which is compliant with modern requirements to work with more information simultaneously.

DRILLING SOFTWARE

Intellifield Drilling Software from Kongsberg Oil & Gas Technologies covers real-time data management and includes SiteCom[®], which enables globally distributed drilling support teams. Geosteering, petrophysics, hydraulics, rock mechanics and other vital drilling support





functions are provided remotely using simple, intuitive access to all data required, for faster more efficient drilling decisions.

INTEGRATED COLLABORATION ENVIRONMENTS

Kongsberg Oil & Gas Technologies solutions can be combined to form sophisticated Integrated Collaboration Environments. The company has designed, managed and delivered more than 300 Integrated Collaboration Environments, both onshore and offshore, worldwide. There are multiple elements in an ICE, such as control room, visualisation centre, drilling operations centre, onshore centre - production optimisation and emergency response centre.

Oil companies have employed Kongsberg Oil & Gas Technologies Integrated Collaboration

Environments in a number of areas including exploration/geological analysis, drilling management, well management, reservoir management, logistics, emergency response, remote health care support and multi-use integrated environment.

Integrated Collaboration Environments are designed to help to connect field, platform, and rig personnel to technical and operational support professionals and are able to:

- Stimulate collaboration and improve multi-disciplinary communication
- Improve speed and quality of response time to events and performance issues
- Strengthen cross-discipline analytics and optimisation/remediation decisions
- Improve transparency of analysis, rationale, and decisions to strengthen organisational learning

- Foster increased productivity and morale by aligning teams more closely to their shared goals and objectives
- Lower cost by creating integrated environments that improve efficiency
- Create software platforms and environments for aggregation, verification, integration, simulation, collaboration, visualisation, training and distributed decision making
- Enable safer operations with less environmental impact through training and collaborative decision making.

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An innovative approach to quantitative risk assessment

Kashagan Field consortium turns to Risktec and Tessella to more accurately assess risk and plan safety in a high H2S environment.

BUSINESS BACKGROUND AND CHALLENGE

The Kashagan Field is situated in the northern part of the Caspian Sea close to the Kazakhstan city of Atyrau. Kashagan is the world's second largest oil field, with estimated commercial reserves of between 9 and 16 billion barrels of oil.

The field is being explored and operated by an international consortium under the North Caspian Sea Production Sharing Agreement. The Agreement is made up of 7 companies consisting of Eni, Shell, Total, ExxonMobil, KazMunayGas, ConocoPhillips and Inpex.

Development of the field is difficult because of the harsh offshore environment, where sea ice is present in winter and temperatures can range from -35 degrees C in the winter to 40 degrees C in the summer. More significantly the oil is light with a high gas-oil ratio and a very high hydrogen sulphide (H2S) gas content of about 20 per cent.

H2S is highly toxic and corrosive, and can pose a significant threat to personnel exposed to leaks. This type of environment places increased importance on the accurate assessment of risk, which is a key input to the design and planning of facilities, working patterns and emergency response.

There are a number of off-the-shelf industry solutions for Quantitative Risk Assessment (QRA), however the consortium felt these packages may lack the transparency and flexibility required to more accurately assess the risk for their specific environment.

They therefore decided to go out to tender for

the design and development of a bespoke QRA system that would provide them with a more cost-effective, flexible and accurate alternative to an off-the-shelf package.

THE SOLUTION

One of the companies invited to tender was Risktec Solutions, an independent specialist in risk management consulting and training.

Steve Lewis, Project Director at Risktec explains further: "We received the invitation, but quickly realised the software expertise required was beyond our own in-house capability. We already had a relationship with Tessella and knew they were perfect for this type of complex work because of their strengths in technical modelling and professional software development."

Tessella was immediately able to demonstrate its value by reshaping the requirements. Originally a system based on MS Excel spreadsheets had been specified. Tessella was able to show that the volume of data involved would mean an Excel solution could be error-prone, difficult to maintain and not scalable for use by a large number of users.

A bespoke software solution based around an SQL database was adopted and Risktec and Tessella were selected to work on the project. An iterative development process ensured the solution met the core requirement of more accurately assessing risk in a high H2S environment.

BUSINESS BENEFITS

Steve continues, "The solution has exceeded expectations. Because it is fully transparent and flexible, down to control over all variables used in the algorithms, it has enabled a more sophisticated, tailored and comprehensive level

of risk analysis. The solution is also very reliable and easily shared by users in different locations."

The system is now being used to perform complex "What If" sensitivity analyses, plot risk levels and support risk-based decisions.

Steve adds, "The system is easily justified, especially against the high cost of corporate licences for standard QRA packages, but more importantly it supports more informed planning and design for safety, especially for plant layout, manning and protection of workers. Overall this innovative approach to quantitative risk assessment will help achieve the challenging field development programme, while enabling higher levels of safety."

REQUIREMENTS

- A flexible, transparent and cost-effective way of accurately assessing risk in a high H2S environment, especially compared to standard off-the-shelf QRA packages
- A robust, reliable solution capable of scalable development and easily shared by users in multiple locations
- A professional software development consultancy with proven expertise in technical modelling and algorithm development

BENEFITS

- Innovative new approach to QRA
- Tailored and consistent QRAs over the lifetime of the field development, enabling higher levels of site and personnel safety through better planning and design of facilities, plant and working patterns
- Ultimately, better informed decisions supporting faster and safer development of the Kashagan field

The Digital Oil Field, the Elephant

Steve Daum, Managing Director of Petrotechnical Data Systems, reflects on the coming of age of the Digital Oil Field.

The Digital Oil Field (DOF) is eight years old. As erstwhile Architect for Shell's Smart Fields Team, I was present at its birth, a passing not unsurprisingly marked by excitement, relief and a fair deal of hullabaloo. Baby DOF demonstrated an insatiable appetite for self-awareness, and after months of round-the-clock feeding with Excel and PowerPoint, and uncountable bottom-up and top-down changes, the fledgling was all fleshed out and ready to face the world.

While it was evident to all of us that DOF's mother was intelligent wells, the identity of daddy DOF was a matter of some controversy – and it still is today. Child DOF, standing before us at IE 2010, has certainly inherited DNA from a wide variety of sources, exhibiting such a rich diversity of technological features and innovative capabilities, that attributions of lineage are clearly a matter for the eye of the beholder. Some see in DOF the next generation of remote operations or robotic downhole processing. For others, DOF represents tomorrow's production surveillance capability, and yet others believe that DOF heralds the long-awaited arrival of real-time reservoir optimisation.

OUR CURRENT APPROACH

The breadth and depth of Industry projects and commercial offerings that now form the DOF market are certainly impressive, but should we not be just a little worried that our investments may be spread too sparsely, our objectives too narrow, our initiatives too fragmentary and our horizons too short? Our approach has been anything but integrated, whereas integration, in the broadest possible sense of the word; business, life cycle, functional, process, data, system, activity, application and workflow, was seen by early visionaries as the most critical success factor for DOF. It seems to me that as an Industry, we have not yet risen in concert to meet this challenge, and the longer we wait the harder it will be.

For my part, wired up (as I am) as an architect, I feel the need to chip in with some advice about IT – something with the potential to

ensure a more coherent and cohesive future for our precocious child.

AN ELEPHANT OF A CHALLENGE

Many years ago my colleagues and I discovered that many of DOF's iterative workflows – whether in production optimisation, reservoir surveillance or field development – although seemingly disparate, shared a common design template, and could be coupled together into a workflow framework spanning the entire DOF enterprise. This implied not only that we could adopt a reductionist approach to describe global IT requirements for DOF, but also, because of the nature of the coupling, it would be feasible to adopt a services paradigm to specify an overarching "Production Enterprise Architecture." We recognised that such an architecture, based on open Industry Standards, would be critical for DOF to realise its full potential. We also knew that such a step change would demand an awful lot from those encumbered with its realisation – an elephant of a challenge for sure, and not one for eating in a single sitting. It would take a multi-year, industry-wide change programme to realise and embed within the market.

And that brings me back to my earlier point about integration, or the lack of it. E&P does not have a great track record in multi-year, industry-wide change programmes, and true to form, despite the billions spent on IT over the intervening years, the elephant has barely been nibbled. Without the benefit of a robust and effective global IT infrastructure, with systems, tools and services designed to comply with the Open Standards of an established Production Enterprise Architecture, many IT solutions are still commissioned on a field-by-field, or even upgrade-by-upgrade basis. These inefficient, lengthy and expensive custom system projects are generally problematic to mobilise, and result in solutions that are inherently inflexible, with multiple overlapping and semantically misaligned databases.

Furthermore, disconnected applications, systems and software tools constrain working practices and hamper communication with anyone or any computer system outside the immediate group of users and systems for which they were designed.

THE HUMAN TOUCH

If the rightful goal is the eating of the elephant, and I believe it is, then my counsel to child DOF and those in attendance is simply to persevere. Keep one eye on creating opportunities for Industry Standards, and the other on building the smart workflow solutions that will make DOF really soar. Lay aside foolish dreams and grand schemes for bigger and better portals, and start understanding what a day in the life of DOF professionals really looks like. Stop overwhelming the user with data just because you can, and design instead a solution that helps him perform his role efficiently and effectively as part of a well co-ordinated, multi-disciplinary team of experts.

Offload unnecessary work by automating as many routine tasks as possible, but avoid the mistake of trying to devolve too much responsibility to intelligent machines. Use automated systems to enrich data with contextual information, to perform standard analyses, to interpret results and to route prioritised findings to the right users' desktops (or iPhones) on a case-by-case basis. Support the interactive investigative work around each case by ensuring easy access to integrated suites of analysis tools, pre-loaded with the right case data.

Implement guided workflow support to enable every case life cycle to be handled in a systematic and well managed manner, enabling each user to collaborate effectively with colleagues in order to review, revise and ratify interpretations, to draw conclusions based on multidisciplinary input, to formulate a consensus-based course of action, and to instigate and monitor those actions through execution to completion – and further, to post-action assessment.

In short, apply IT thinking with the human touch. And let the elephant now worry, because if DOF was borne of all the sweat, tears and frustration of those who struggled in the Industry through the nineties and early noughties, its early adulthood will be supercharged with the enthusiasm and aspirations of those who follow in their footsteps. With careful handling DOF will indeed prove a worthy enterprise for the coming decades, and proffer scant hiding places for elephants.



and the Human Touch

Collaborative and integrated technology

All companies want to constantly improve their effectiveness and efficiency, reduce their risk, control costs and improve their work processes.

The B2|Virtual Collaboration Arena software, part of the B2 Collaboration Suite of dedicated software products developed by BB Visual Group, is specifically designed to assist and interpret strategic, long-term and high-performance decision making. The software is developed in partnership with the Oil & Gas Industry for the Oil & Gas Industry. As the solution is based on software and off-the-shelf hardware such as standard desktop computers and web cameras, it can be deployed and used in the organisation - with user flexibility in mind. B2|Virtual Collaboration Arena represents a change from dedicated, hardware centric meeting rooms into software-based collaboration tools that can be used to organise and facilitate virtual meetings from any location.

With the rapid development of high bandwidth networking technologies such as wireless hot spots and 3G mobile technologies, there is an opportunity to allow users to work independent of location. BB Visual Group's strategy is to support this on as thin lines as absolutely possible. With B2|Virtual Collaboration Arena, they can collaborate cross-disciplinary across geographies without moving from their office. The expert resources travelling around can be contacted even when they are in an airport, and still realise a full collaborative context.

Using the B2 infrastructure, visual collaboration sessions for sharing information and context can be defined. Work flow scenarios can be defined and automatically documented by the system itself. Through in-house development and collaboration projects with their customers, a number of such solutions have been developed. The solution can scale in all dimensions throughout the company network and can securely communicate with partners on the outside world.

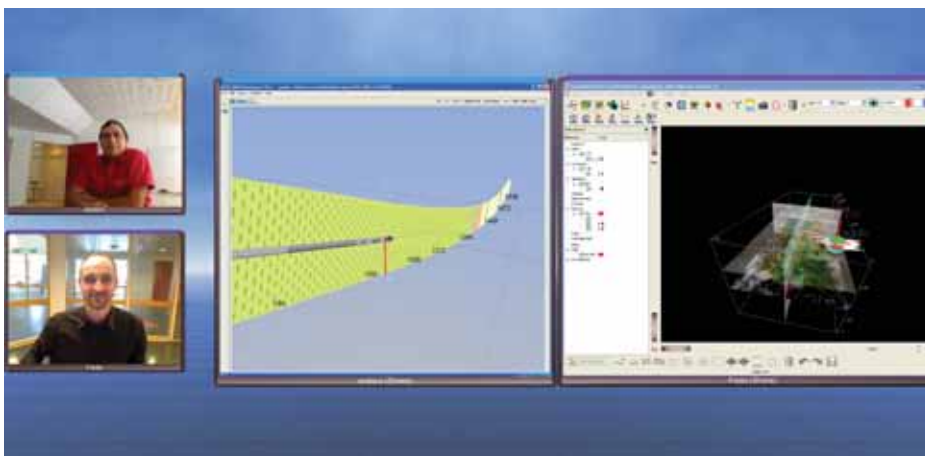
The flexibility of the B2 infrastructure allows BB Visual Group to integrate nearly any data from any system, and structure the data in a visual and collaborative B2|Virtual Environment. The B2|Virtual Collaboration Arena can be deployed in geographically distributed teams, such as for example

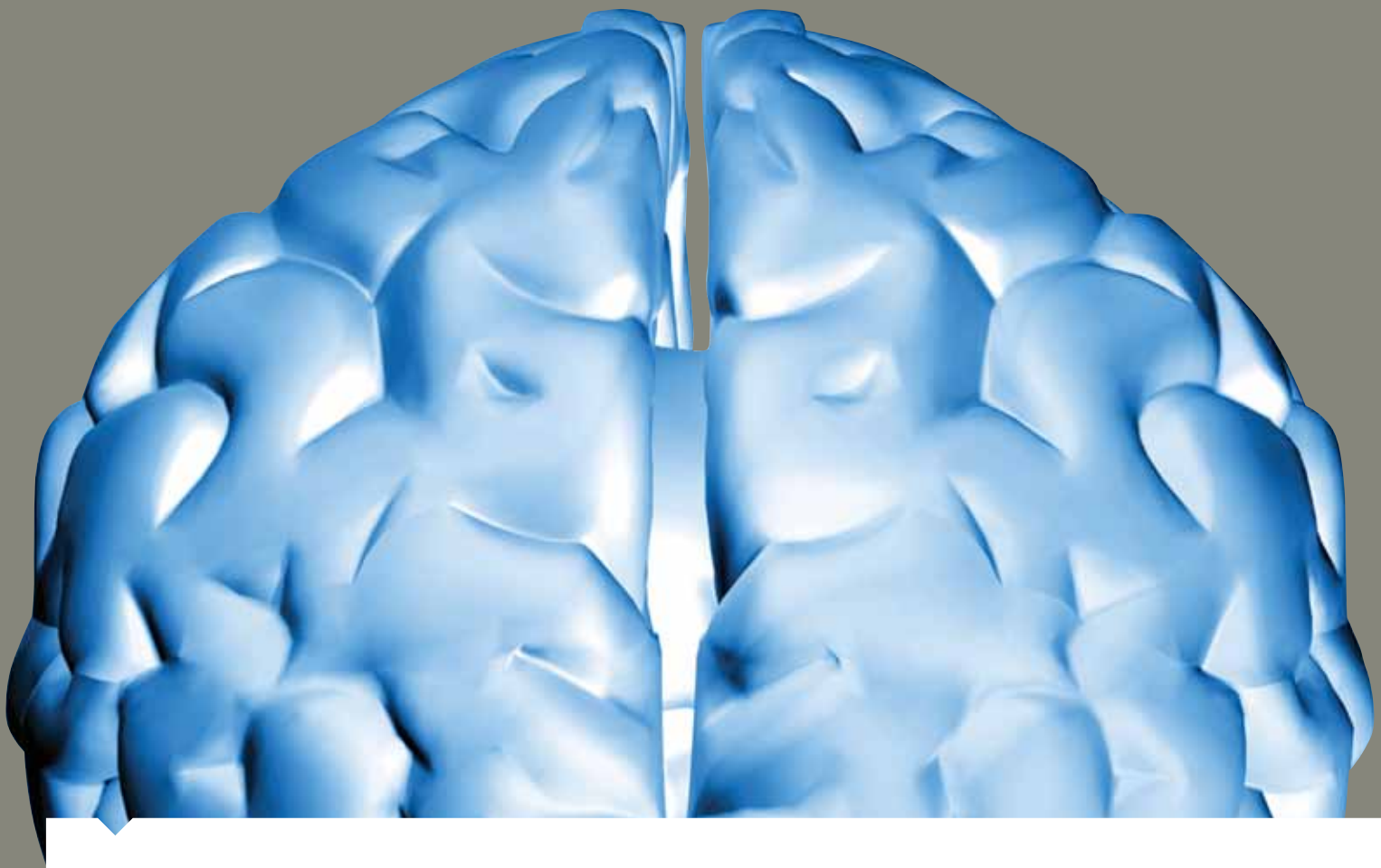
between offshore and onshore, or between national and international offices.

The B2|Virtual Collaboration Arena is an integrated solution with video, audio and most of all sharing data. It is utilising standard off-the-shelf camera technology such as high quality web cameras and for meeting room's standard loudspeakers etc.

In the B2|Virtual Collaboration Arena the participants can share information such as 3D data, application streams (with or without control) coming from the desktop of each participant, or video streams coming from their camera. B2|VCA supports high-quality, spatial audio that outperforms traditional conference phones and other similar hardware-oriented audio conferencing solutions, as well as face-to-face video using web-cameras and application sharing with full colour depth and resolution.

The virtual meeting is kept within the boundaries of a completely synchronised scene, in order to make sure all participants have the same picture in mind or gets a life like experience by observing the meeting context and content. Scalable collaboration is enabled between multiple disciplines and geographies and the software supports fast-moving and integrated oil and gas operations. It uses flexible, IP-based technology for ease of use, stability and access. All data is shared in real-time and is able to be integrated with video conferencing and other communications tools to avoid any limitations. Magne Arne Brekke, Chairman and CEO, BB Visual Group, notes: "Our unique approach to working enables oil and gas companies to embrace integrated and collaborative technologies into their own work processes and work spaces".





The definition of intelligence

Intelligent: adjective 1 having intelligence, especially of a high level. 2 (of a device) able to vary its state or action in response to varying situations and past experience. 3 (of a computer terminal) having its own processing capability. - The Oxford English Dictionary

The Intelligent Oilfield has become a well-used phrase but what does it really mean? If the dictionary definition is to be adhered to, then the oilfield itself must be capable of processing and varying its actions in response to changing circumstances. In fact, this is now not far from the truth.

The amount of data that can be extracted from an oilfield is almost limitless. It is, however, what can be done with this information that enables the oilfield to be truly intelligent. Vast amounts of raw data are of no use unless it can be made accessible to the user.

As an established provider of web-based daily reporting services to the upstream oil and gas industry, IDS is a key enabler of the intelligent oilfield. Through its web-delivered suite of reporting tools, DataNet2, IDS centralises oilfield data. This information becomes knowledge when the DataNet2 tools allow it to be easily searched, interrogated, shared, delivered and acted upon.

An intelligent outcome demands that both individual elements of rigsite data can be captured and analysed and also be translated across other areas of the oilfield. DataNet2 is capable of doing just this. The suite of powerful reporting and analysis tools covers Exploration & Production, Supply Chain Management and Data Visualisation & Analysis. Sustaining the drilling project life cycle from initial concept to abandonment and final decommissioning, each tool can be utilised as a standalone item or fully integrated to provide assimilated data and analysis.

The advantage of a web-based system is that this data can then be shared on a global basis. Engineers on the mainland, and across the world, can view and analyse the same information as the rigsite operator, in real-time.

Of course, there is a theory that machines cannot ever be truly intelligent – not in the same way as human beings. So is this the vital element that is missing from the intelligent oilfield? Not necessarily. It is entirely possible for the human touch to become an integral part of the overall process. The oilfield must become an amalgamation of the latest technology, built and supported by real, live experts.

The result: an intelligent oilfield. Believes Douwe Franssens, General Manager, IDS.