AGENDA

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## May 9, 2023 (Morning)

<table>
<thead>
<tr>
<th>Time</th>
<th>geoLOGIC systems Stage</th>
<th>All Other Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30-8:00 AM</td>
<td><strong>Breakfast</strong>, sponsored by Katalyst Data Management</td>
<td>Closed</td>
</tr>
</tbody>
</table>
| 8:00-8:10 AM  | **Introduction & Welcome**  
                Amii Rozell (Houston Leadership Team)                                           |                 |
| 8:10-8:50 AM  | **The Data Ecosystem & PPDM Update**  
                Trudy Curtis (PPDM Association)                                                 |                 |
| 8:55-9:15 AM  | **How to Build an Ecosystem on Purpose and For Good**  
                Joey Sanchez (Ion Houston)                                                     |                 |
| 9:15-10:00 AM | **Keynote: Remote Robotic Operations Supporting Human Space Exploration**  
                Shaun Azimi (NASA)                                                            |                 |
| 10:00-10:15 AM| **Morning Break**                                                                        |                 |
| 10:15-11:00 AM| **Automating Geo Data Management Workflows and Taking an Enterprise Approach**  
                Seth Tribbey (S&P Global)                                                      |                 |
| 11:00-11:40 AM| **Board of Directors Discussion**  
                Curley Thomas (PPDM Association Board of Directors)                            |                 |
| 11:40-12:10 PM| **Enterprise Asset Management in the Data Ecosystem**  
                Robert Lovelace (Novus Consulting)                                           |                 |
| 12:10-1:00 PM | **Lunch**                                                                               |                 |

### Cocktail Reception Sponsor Spotlight - S&P Global

EDM for Energy (S&P Global Market Intelligence) - The use of a one-size-fits-all approach to data management at many upstream operators does not address the idiosyncrasies of geology data and the challenge of integrating with G&G applications. Many users struggle to blend data from multiple applications; synchronize and govern updates and changes to that data; and distribute mastered data between users, applications, and departments. As a result, they fall back on costly manual processes, which increase operational risk and cause delays. Find out how we are helping geoscientists, geo data managers, geo-techs and others achieve their goals by automating data updates, quality improvement, data movement, and governance across projects, G&G applications, and the rest of the organization. Our EDM for Energy solution automatically synchronizes data at the project, application, and departmental levels and includes the following keep capabilities:

- automating updates, managing overrides, and maintaining data consistency between disparate projects and multiple G&G applications
- support for common geo data types, such as well headers, directional surveys, logs, cores, documents, tops, zones, and more
- blending multiple sources of geo data into a mastered dataset
- configurable, off-the-shelf plug-ins that make integrating with common G&G applications and data sources (such as Information Hub) easier
- solution templates to address common industry data management needs, reduce time to value, and implementation risk
- automating access to non-geo internal data

To find out more, please visit our webpage or contact Seth Tribbey (Director, EDM for Energy, S&P Global Market Intelligence).
May 9, 2023 (Afternoon)

<table>
<thead>
<tr>
<th>Time</th>
<th>geoLOGIC Stage</th>
<th>Room 2</th>
<th>Room 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00-1:40 PM</td>
<td>Data Quality in Oil &amp; Gas Exploration – Everyday Challenges</td>
<td>Data Modeling for Modern, Self-Service Analytics</td>
<td>Accelerating Exploration &amp; Production Data Transfer from Field to Processing</td>
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<tr>
<td></td>
<td>Boris Makarov (Apache Corporation)</td>
<td>Greg Baldini (Argus PBI)</td>
<td>Kristy DeMarco (Lyve Mobile)</td>
</tr>
<tr>
<td></td>
<td>1:50-2:20 PM</td>
<td>The Intersection of Public Data &amp; Technology</td>
<td>A New Approach to Data Identity and Data Identity Resolution</td>
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<td></td>
<td>How a Business Unit Leverages Technology to Make Informed Decisions Related to</td>
<td>John Ferrell (WellDatabase)</td>
<td>Dag Heggelund (Pando Scape)</td>
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<td>Well Data Management, Data Trades and Surveillance Analysis and Optimization</td>
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<td>Amber Robbins (Chevron)</td>
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<tr>
<td>2:20-2:30 PM</td>
<td>Afternoon Break</td>
<td></td>
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<tr>
<td>2:30-3:10 PM</td>
<td>The New Data Ecosystem: The Transformation from Oil &amp; Gas to Energy &amp; Sustainability</td>
<td>A Systematic Approach to Enhance the Asset Performance Using Data Analytics</td>
<td>Does Your Next Job Depend on These Competencies? Future Forward</td>
</tr>
<tr>
<td></td>
<td>David Hood (geoLOGIC)</td>
<td>Dr. Arunkumar Ranganathan (Infosys)</td>
<td>Cindy Cummings (PPDM Association’s PDC)</td>
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<tr>
<td></td>
<td>Sponsor Presentation</td>
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</tr>
<tr>
<td>3:20-4:00 PM</td>
<td>Leveraging New Data Ecosystems to Accelerate Lower-Carbon Pathways</td>
<td>Optimizing Heat Exchanger Reliability with Enhanced Data Management</td>
<td>Solution Spotlight: Optimizing Reconciliation and Sync of Geo Data in a Multi-Application,</td>
</tr>
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<td>Raj Kannan &amp; Patrick Dineen (SLB)</td>
<td>Rileigh Presnell (EcoLab)</td>
<td>Multi-Project Environment</td>
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<td>Seth Tribbey &amp; Scott Busing (S&amp;P Global)</td>
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<tr>
<td>4:00-6:00 PM</td>
<td>Cocktail Reception - sponsored by S&amp;P Global</td>
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**Stage Sponsor Spotlight - geoLOGIC systems ltd.**

geoLOGIC systems ltd. is a leading and trusted information services company driven by a mission to provide premium-quality data, software, analytics, education, news and actionable insights to the energy industry. The solutions we deliver empower our clients globally to make decisions that drive growth and efficiency, and enable them to provide the cost-effective and reliable energy solutions that are vital to supporting the needs of modern society. Our customers include primary energy companies across the spectrum of energy transformation as well as the financial sector, government and regulatory organizations, and educational institutions.

Founded in 1983, geoLOGIC is based in Calgary, Alberta, Canada with offices in London (UK) and Houston (US). As we have grown, we have retained a laser-like focus on our customers’ experiences. Our teams of data scientists and engineers, geologists, analysts, journalists, designers and developers are dedicated to delivering premium information and critical data-driven intelligence – ranging from surface and subsurface well/asset level information and insights to corporate performance benchmarking data, commodity pricing and A&D transaction data.

For more information, please visit www.geologic.com or email info@geoLOGIC.com.
Wifi Sponsor Spotlight - Bahwan Cybertek

Bahwan Cybertek delivers digital transformation of businesses through IP-led products and cognitive solutions, growth accelerators and innovative outcome-based business models. Our solutions span across Digital Journey Management, Predictive Analytics, Digital Customer Experience, Payments & Citizen services, Energy, and Education. With innovation and thought leadership as our core values, we have delivered sustainable transformation to customers, adapting advancements in technology specific to each business domain allowing them to function with agility and create new business models besides being ready for the changes and challenges of the future.

Bahwan Cybertek is made up of over 3000 employees located across the Asia Pacific, North America, and Middle East regions. The Oil and Gas group is made up of experienced upstream professionals located within the US, Europe, and UAE. We also have a dedicated team of developers and COE based in Chennai, India.

Bahwan Cybertek’ s Geodatafy Enterprise Search platform is uniquely qualified to address the complex data silo issues found within a normal petroleum environment. The product is a result of many combined years in data management and application development in the upstream oil and gas arena. The Geodatafy platform brings together traditional data management best practices in a modern modular applications framework. Geodatafy converges E&P data to provide a single place to find, verify, analyze, and utilize your data.

Wifi Access Details - Stay Connected

Thanks to our Wifi Sponsor: Bahwan Cybertek
Network: NCC1
Password: NorrisCenters90

Thank You Leadership Team

The Houston Leadership Team has been invaluable in the creation and execution of the 2023 Houston New Data Ecosystem Expo. These amazing individuals are key to the building of the Houston energy data community and we sincerely appreciate all their efforts:

- Amii Rozell
- Amy Moore
- Derek Garland
- Donna Wise Joseph
- Greg Foley
- John Renfro
- Kelly Sanchez
- Megan Potter
- Trent Garfield
## May 10, 2023 (Morning)

<table>
<thead>
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<td>7:30-8:00 AM</td>
<td>Breakfast Available</td>
<td>Closed</td>
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</tbody>
</table>
| 8:00-8:45 AM  | **Keynote - Storytelling: Turn Your Data Into Compelling Insights That Inspire Action.**
                John Hetherington (We Deliver Your Vision) |       |       |
| 9:00-9:40 AM  | **How to Use Responsible AI at a Corporate Level**
                Geoff Price (Chevron) | **A Trusted Seismic Archive is More Than Just Online Data**
                Paul Thompson (Talus Technologies) | **Automated Image Digitization Using Machine Learning**
                Sunil Garg & Samir Jain (DATAVEDIK) |
| 9:40-9:50 AM  | Morning Break |       |       |
| 9:50-10:30 AM | **Alignment of Data Platforms and Data Management**
                Chris Hanton (IKON Science) | **Managing Sustainability With Estimated Data Quality**
                Jim Soos (Planckton Data Technologies) | **International Energy Data Standards Updates and Workshop**
                Amii Rozell (Rules Committee), Hashim Abdullah (Reference Values Committee), Trudy Curtis (Data Objects Group) |
| 10:40-11:20 AM| **OSDU – Turning Concepts on Paper to Early Business Success**
                Mark Rae (Shell) | **Digital Oilfield for Sustainability and Operational Excellence**
                Sandeep Ghosh & Frank Whyte (Perficient) |       |
| 11:30-12:10 PM| **Enhance Your Data Ecosystem with Blockchain As A Solution For Seismic Entitlements**
                Cindy Cummings (Repsol) & Rebecca Hofmann (B4E) | **Optimizing Oil and Gas Value Chain With Network Graphs**
                Vivek Anand & Nishanth Raj (Deloitte Consulting) | **Why the Changing World of Energy is Benefiting from Open Data Ecosystems**
                Reishin Toolsi (Databricks) |
| 12:10-1:00 PM | Lunch |       |       |

**Share Your Thoughts On The Speakers**

**Share Your Thoughts On The Expo**
## May 10, 2023 (Afternoon)

<table>
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<th>Room 2</th>
<th>Room 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00-1:40 PM</td>
<td>Understanding Emotional Intelligence and Leading in Data - Interactive</td>
<td>Real World Multi-Disciplinary Analytics</td>
<td>To Define the Problem of “Orphan” Wells</td>
</tr>
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<td></td>
<td>Melinda East (Focus Forward)</td>
<td>Nathan Zenero (WellDrive)</td>
<td>Dwayne Purvis (Dwayne Purvis PE)</td>
</tr>
<tr>
<td>1:50-2:30 PM</td>
<td>Building Digital Capability is Everyone’s Responsibility Interactive</td>
<td>What You Should Know About the CPDA and The New PPDM Training Program</td>
<td>Closed</td>
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<td></td>
<td>Douglas Frisby (Sword ITS)</td>
<td>Simon Pugh (PPDM Association)</td>
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<tr>
<td>2:30-2:40 PM</td>
<td>Afternoon Break</td>
<td></td>
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<tr>
<td>2:40-3:25 PM</td>
<td>Cross Industry Data Panel Discussion</td>
<td>Share Your Thoughts On The Speakers</td>
<td>Share Your Thoughts On The Expo</td>
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<tr>
<td></td>
<td>Greg Foley (The FerVID Group), Sean Hanahan (Platypus Brewing), Andre Pontin (Melax Technologies) and Jim Holl (ExxonMobil).</td>
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<tr>
<td>3:25-3:40 PM</td>
<td>Closing Remarks</td>
<td>Trudy Curtis (PPDM Association)</td>
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### Breakfast Sponsor Spotlight - Katalyst Data Management

With over 40 years of experience, Katalyst Data Management® provides the only integrated, end-to-end subsurface data management solution for the oil and gas industry. Over 215 employees operate in North America, Europe, Asia-Pacific, and South America and are dedicated to optimizing the value of subsurface data, including seismic and well data. Katalyst enables clients’ digital transformation of E&P data with digitizing services and digital transformation consulting.

Katalyst Services include:

**Consulting** - Katalyst provides consulting services for a wide range of E&P companies. Our domain experts can support your organization with almost every data management service, from cloud consulting and data ownership assessments to OSDU readiness assessments and data management workflow design.

**iGlass Data Management** - Katalyst’s iGlass data management platform provides a complete set of tools that encompass the full life cycle of our customers’ subsurface assets. Certified PPDM Gold Compliant, iGlass incorporates a web based ESRI GIS map interface for direct access to your digital subsurface data. Katalyst hosts the iGlass data management platform as a service (SaaS) for our clients.

**Geopost** - Geopost is dedicated to the distribution of information and solutions for the oil and gas market. Geopost provides instant online access to integrated data of all types (e.g., seismic, interpretations, well logs, production graphs, acreage and company timelines, naval and cultural information).

**SeismicZone** - SeismicZone gives exploration stakeholders access to current seismic data available across the globe. The online marketplace for seismic data streamlines the process and provides significant savings for data purchasers.

- License seismic either through your broker or independently
- Identify what data is automatically available for QI/purchase with ease
- 24/7 access to search, target, QI and purchase available data
- Query filters enable locating data of interest quickly
- Automated online processes for faster transactions
New Data Ecosystem

Visit Our Tradeshow

Stonebridge Consulting
Katalyst Data Management
WellDatabase
Exploration Archives™
S&P Global
Ovation Data
Bahwan CyberTek
SLB
Ikonscience
WellDrive®
Resolve GeoSciences
OSDU Forum
AgileDD
denodo
## The Data Ecosystem & PPDM Update

**Trudy Curtis (PPDM Association)**

### How to Build an Ecosystem on Purpose and For Good - Joey Sanchez (Ion Houston)

**Description of Presentation:** In order to build an ecosystem, you must bring together all of the elements that make up that ecosystem. In the biological sense, an ecosystem is a geographic area where plants, animals, and other organisms, as well as weather and landscape, work together to form a bubble of life. What is your bubble of life? What is your domain area of expertise? Who are the “plants”, the “animals” and other “organisms”? These are the first questions to define. Once you define the inputs, what is the environment in which you contain these inputs? That is the “weather” and the “landscape”. It is the world that your ecosystem exists in. But the most important piece of the puzzle to drive outcomes for your ecosystem is the foundational force to propel everything forward. The Purpose. That invisible force that guides your ecosystem forward, for good. Let’s define our purpose here today. Why are you here? Why did you show up? You are the most important element in the ecosystem because your purpose will dictate your future. Now imagine if all of our purposes created a collective purpose to build a New Data Ecosystem where we can come together and collaborate for the greater good. Now let’s go build together. The future is yours.

**Short Biography:** Joey Sanchez is the Senior Director of Ecosystems for The Ion Houston, and Founder of Cup of Joey. Joey works in the Houston early-stage investing and startup community to further establish The Ion’s role as a destination for entrepreneurship and startup opportunities. He delivers program activations that position the Ion as a destination for founders, early-stage startups, scaled startups, early-stage angel investors, venture capital investors, and corporate partners.

## Keynote: Remote Robotic Operations Supporting Human Space Exploration

**Shaun Azimi (NASA)**

NASA and our commercial and international partners are planning to establish a sustained presence on the lunar surface as part of the Artemis campaign. Robotics and autonomous systems are key technology areas which will enable remote operations on the lunar surface in applications such as logistics, maintenance, science utilization, construction and outfitting. The lunar surface will serve as a proving ground for robotics with increasing levels of autonomy, flexibility, and resilience that will enable the human exploration of Mars. I will be giving a brief overview of the challenges associated with robotic remote operations in architectures designed around human explorers and the plans that NASA is developing to bridge the gap between terrestrial innovation and the demands of space applications.

## Automating Geo Data Management Workflows and Taking an Enterprise Approach - Seth Tribbey (S&P Global)

**Description of Presentation:** We have been in a new era in the oil and gas industry for the last 30 years in our industry. Despite three significant commodity price recoveries since 2010, the number of employees in the industry has declined by almost half (43%) rather than growing in line with commodity prices, as in the past. This is in major part due to consolidation of companies and the assets they own and operate, alongside pressure from investors to operate within cashflow. The hiring sprees of the past appear to be gone for the foreseeable future. At the same time, we are entering into a new era of data management in oil and gas. We have seen the transition from desktop/project-focused data management in the 90s to server-focused trends in the 2000s, the emergence of SaaS and data lakes/warehouses in the cloud in the 2010s, and on to the beginning of the era of data automation through AI and ML today. The evolution of data management through these eras has led to bloated application landscapes, considerable technical debt, reliance on manual data-focused workflows, and a lack of agility - limiting the ability to embrace automation. Trends have shifted from numerous, custom point solutions (and the staff to support them) to a situation in which data movement, data quality, and analytics are being largely driven by AI and ML. As a result, the other big trend we are seeing in the industry is a consolidation of software in-use and the redundant infrastructure, data, and custom code that support it. Most upstream operators have a similar suite of geotechnical applications in place and, as such, oil and gas software has been somewhat commoditized. Unlocking the value of data that is created, flowing between and consumed by these applications to make better, faster decisions than your peers is the true key to achieving a competitive advantage and embracing automation – it is not about the specific piece of software you choose. However, in the era of consolidation, the data tells us we must do so efficiently and with fewer resources than ever before. Because of the way oil and gas companies work with diverse disciplines, data types, and applications, an enterprise approach is required to pivot to this era of automation and to unlock the value of your organization’s data. In this presentation we will discuss these trends; why data (not software) is the differentiator in the era of consolidation; why an enterprise approach to data management is necessary in oil and gas; key elements of enterprise-oriented data solutions; and best practices for taking an enterprise approach to data management and positioning yourself for success.

**Short Biography:** Seth Tribbey has spent the last 16 years in enterprise data management with a strong emphasis on geospatial data and software for the oil and gas industry. Seth started his career at Chesapeake Energy after college and after moving to Colorado for graduate school in 2009 has been focused on delivering solutions that align technology with impactful business outcomes for the energy industry since. In that pursuit he’s worked at companies like esri, Enverus, and IHSMarkit (now S&P Global).
| **Board of Directors Discussion**  
Curley Thomas (PPDM Association Board of Directors) |
| --- |

**Enterprise Asset Management in the Data Ecosystem**  
Robert Lovelace (Novus Consulting)  

**Description of Presentation:** Presenters will highlight data optimization activities within an Enterprise Asset Management project. The focus will be on value derived from standardization and enhanced data management capabilities.  

**Overview:**  
We will present and discuss how standing up a new Corporate Gas Plant Standard Application (Maximo) for Facility Asset Management and PSM Compliance fits within the O&G Data Ecosystem.  

**Key Objectives:**  
- Manage facilities through structured workflow to meet regulatory and safety requirements  
- Monitor performance of midstream assets and track key metrics feeding management decisions relating to continual improvement, costs, and inventory management  
- Establish and utilize best practices across one corporate platform  
- Manage and control spend through business processes and system controls across midstream assets  

**Impacts:**  
- Decommission legacy application  
- Increase use of Purchase Orders within the new application  
- Manage MOCs (Management of Change) within the new application  
- Manage via workflow all plant tasks for preventative maintenance and corrective maintenance in the new application  
- Digitize all inventory and documents  

**Data-specific Accomplishments:**  
- Defined Data standards (show example)  
- Formed Data Governance Committee (with defined roles and responsibilities)  
- Defined processes (Corporate & IT), SOPs (show examples)  

**Short Biography:** Robert Lovelace is Partner and Co-Founder of Novus Consulting, a consulting firm who offers comprehensive data, process, and technology services across Energy (Upstream, Midstream, and Downstream), Healthcare, Construction, and Retail industries. We focus on driving technology efficiencies and cost-saving solutions to improve asset performance within digital transformation efforts, mergers and acquisitions, and operations.  

He brings more than 20 years of industry and consulting experience focused on technology strategy, complex project/program management, process improvement, and ERP implementations. He worked with small, private to large public companies in industries ranging from energy to manufacturing, transportation, retail, and government. Prior to starting Novus, Mr. Lovelace was in management consulting working for firms such as Accenture, Deloitte Consulting, EAG Services, and Stonebridge Consulting building business and industry practices focused on improving client performance and returns on investments ranging from technology implementation/adoption to business alignment to mergers and acquisitions.  

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**Data Quality in Oil & Gas Exploration – Everyday Challenges**  
Boris Makarov (Apache Corporation)  

**Description of Presentation:** Data quality is a foundational component of decision-making processes. It is the biggest success or failure and most time-consuming factor in the geoscience domain of Oil & Gas field exploration and development. Many dry holes, missed deadlines, mineral rights violations, and failed investments are caused by the wrong data or a lack of critical data. Various approaches and data management practices to address the data quality in the geoscience subsurface data domain will be discussed during the presentation.  

**Short Biography:** Boris Makarov is an IT Supervisor, Geoscience Data – IT Data Management & Analytics at Apache Corporation. Prior to joining Apache in 2017, Boris worked for more than 20 years in various Information Management positions at Schlumberger and BHP. Boris has a master’s degree in Theoretical and Mathematical Physics from Francisk Skorina Gomel State University, Belarus.  

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**Talk TBD**  
geoLOGIC systems Sponsor Presentation
## Leveraging New Data Ecosystems to Accelerate Lower-Carbon Pathways

**Raj Kannan & Patrick Dineen (SLB)**

**Description of Presentation:** Digital is set to make a material impact in our industry by reducing cycle times and risk, accelerating returns, increasing productivity, while also lowering costs and carbon. The key to delivering this relies on several techniques including automation, hyper-scale computing and efficiently combining first principle based and data-patterns based insights. Leveraging innovations in cloud, big-data, and artificial intelligence as a foundation is key to delivering such a transformational platform. Such data-centered approaches focus on automated DataOps pipelines that deliver the latest, reliable, and fit-for-purpose data products to applications and end-users generating business insights. Any data-centered approach should be open, extensible and ready to integrate with both customer and third-party solutions effectively. This requires a new approach to data, one that begins with an open-source, vendor-neutral, consortium-driven approach, rather than proprietary or closed-loop solutions. The open subsurface data universe (OSDU) is the result of this realization and currently boasts more than 230+ active members, including SLB. Together with operators, cloud services providers, software vendors, and start-ups the OSDU community aims to reduce data silos, enable transformational workflows, and accelerate the deployment of emerging digital solutions for better and faster decision making. A digital platform built on OSDU that leverages automation to drive efficiency, enables scalable multi-realization analysis to improve and reduce risk and uncertainty, and brings first principle physics to supplement AI/ML driven data insights will be the essential vehicle for any energy operator’s digital transformation journey. One concrete example is agile and intelligent reservoir modelling, which streamlines subsurface workflows, longer-term modelling, and surveillance of CO2 sequestration. Such workflows enable faster, more informed decision making, while considering the risks and uncertainties and reducing time for surface studies from months to days SLB has been an active contributor towards OSDU since its inception, working to create an open, standards-based ecosystem that drives innovation for the energy industry. With OSDU at its core data platform, the SLB DELFITM platform delivers an open, cognitive digital transformation environment comprised of innovations from SLB, our partners, and open-source technologies. One such partner is Microsoft and together we are jointly delivering an open, secure, reliable, and fully managed cloud-based data platform solution for the energy industry. Microsoft Energy Data Services is an enterprise-grade data platform that brings together the capabilities of the OSDU™ Data Platform, Microsoft’s secure and trusted Azure cloud platform, and SLB’s extensive domain expertise. Together DELFI and Microsoft Energy Data Services accelerate operational performance by leveraging the compute power of the cloud enabling transformational levels of efficiency. As the world focuses on environmental, social, and governance goals, solutions from companies like Microsoft and SLB will go beyond oil and gas and will continue to leverage the power of digital as an accelerator of operational performance and lower-carbon pathways.

**Short Biography:** Raj Kannan is an enterprise and cloud technology leader, a SLB recognized Advisor and contributing to upstream oil and gas for 25+ years. As a firm believer in openness and community innovation, he actively contributes to the OSDU open-source data platform as an elected OSDU Management Committee member. He is a trusted advisor for several enterprise customers around the world and has helped map their specific needs to digital solutions tapping into OSDU data platform.

Paddy Dinneen - Geologist (M.Sc) by training. Started in the industry in 1985. Initially worked for a couple of operators in the North Sea (Mobil & Shell) as a geologist focused on exploration and appraisal. Joined SLB as a Geologist in 1995 as a mapping and modeling specialist working on client projects globally. Joined the ‘data’ business in SLB around 20 years ago and have been involved in the development and creation of all SLB subsurface commercial data products and solutions to date. Have been intimately involved with the development of the new SLB digital solutions for data including OSDU and Enterprise data management solutions. Currently the Business Owner for the ‘data’ domain for Digital & Integration in USLand working with clients in the US on their digital & data strategies to leverage data to drive greater insights, automated workflows, and enhance decisions for better ROI’s.

## Data Modeling for Modern, Self-Service Analytics

**Greg Baldini (Argus PBI)**

**Description of Presentation:** This session explores data modeling techniques to make data approachable to self-service users and to optimize performance. With examples of real problems and (attempted) solutions, this presentation will examine dimensional modeling techniques which simplify and speed up analytics. A fast-paced look at some common and uncommon reporting scenarios, including: - All manner of date calculations and comparisons - Slowly changing dimensions - Events in progress and time series By the end of this talk, you should have a stronger understanding of the right questions to ask that will make your BI solution simpler and faster.

**Short Biography:** Greg Baldini has a decade of experience building high performance analytics solutions for clients across industry verticals. He is cofounder of Argus PBI an operations and monitoring solution for your Power BI ecosystem.
Optimizing Heat Exchanger Reliability with Enhanced Data Management
Rileigh Presnell (Ecolab)

Description of Presentation: Data management and analysis provides means for improved decision making and optimized operations. Ecolab has been using data management to support Energy customers with advanced analytics and insights as heat exchanger reliability accounts for an average of 80% of heat exchanger maintenance costs within a refinery or petrochemical plant. These costs arise because of heat exchanger condition variability, which is difficult to identify while a heat exchanger is in operation. Our learnings help to predict what’s happening inside the heat exchanger using data and expertise across thousands of heat exchangers to identify characteristics that coincide with critical heat exchanger reliability issues. With data and insights collected on maintenance history, cooling water flow and temperature, process flow and temperature, and turnaround characteristics of heat exchangers, productivity of a plant can be improved, which also helps to avoid unnecessary maintenance and reliability expenses. The outcome of this discussion will be a clear understanding of the way data management and interpretation can directly affect heat exchanger reliability and operational performance, with concrete examples from application.

Biography: Rileigh Presnell leads the heat exchanger reliability offering for Nalco Water an Ecolab company, the global leader in water, hygiene and infection prevention solutions and services that protect people and vital resources. Collaborating with subject matter experts, downstream operators, and customers to optimize total operation costs energy companies encounter with heat exchanger reliability issues addressed through improved data management. Rileigh is passionate about sustainability—environmental, social, and economic—and aspires to find solutions enabled by data management and digital offerings at the intersection of those three fields. She enjoys devising creative, lasting strategies to address the large and small challenges faced by our energy customers. Rileigh is an MBA and MS Environmental Engineering graduate of the Georgia Institute of Technology with a career dedicated to water quality and water management.

A Systematic Approach To Enhance The Asset Performance Using Data Analytics
Sethupathi Arumugam, Vimal Amaldas & Dr. Arunkumar Ranganathan (Infosys)

Description of Presentation: Globally, two-thirds of oil and gas operations are governed by joint ventures (JVs) in which companies pool capital, share risk, and transfer knowledge and best practices. JVs have an equal responsibility as operators to monitor the assets and challenge any losses, emission, deferrals, shutdown, etc. The operator and JVs work in tandem to improve the performance of the assets. However, it is not an easy task to aggregate the data from daily and monthly reports to monitor and assess the productivity of assets. Other significant issues such as data coverage, protection, visibility, and transparency, etc. hinders in-depth analysis of data in hydrocarbon value chain. A systematic approach has been adopted through agile scrum methodology. The business needs are categorized into three functional areas such as upstream monitoring, reservoir analysis and financial reporting. Based on the functional areas, the Minimum Viable Product (MVP) has been defined. Cloud provides scalable, secure resources to collect and process data from multiple sources. The field and well production and sales parameters are captured from daily production reports and visualized with time-series charts along with the forecast data. An email is sent on daily basis to JV team with the snapshot of field production status. The immediate benefit was, JVs observed heavy injection of MEG (MONO ETHYLENE) at field level, which could kill well performance and seal reservoir pores. Further, this helped JVs to request MEG injection data by well level, so the injection can be monitored at individual well level to assess the impact of well productivity. The second part of MVP is reservoir analysis. Predictive analytics was applied on historical, latest well parameters and pressure build-up test data to determine the trend of reservoir pressure, drawdown curves, gradient, well performance and reservoir recovery at each geological section. The outcome of analytics enabled JVs to brainstorm with operators to improve the reservoir recovery factor. The last part of MVP is the group financial reporting. The descriptive analytics was applied on group level, to track the gas price with respect to floor price, ceiling price, Brent, JKM prices on each bidding round. With the advent of cloud computing and Agile Scrum process have paved way for better collaboration, greater efficiencies, and streamlined business practices. Also, the data is transparent and visible to the entire business community. The proposed solution helps to track individual molecules of hydrocarbon from the point of production to point of sales. Also identifies opportunities for any performance improvements.

Short Biography: Dr. Sethupathi Arumugam- Sethupathi, a Geologist, works with Infosys as a Principal Consultant, having 22 years of experience across the Oil & Gas value chain. His domain expertise includes Geology, Geophysical, Drilling & Completion and Production Optimization. Dr. Arunkumar Ranganathan - Associate Vice President, Global Head - Energy & Utilities Domain Consulting group, having 28 years of Consulting, Delivery and Global Leadership experience, primarily assisting clients in the Energy, Utilities & Resources value chain. Experience includes building domain / techno domain solutions & capabilities, transforming capabilities into high growth engine, building Digital solutions for Energy Transition, Oil & Gas and Utilities industries. Rich experience in Consulting, defining & implementing strategies, Conceptualizing Digital transformations, managing and providing solutions for core domain engagements in Energy & Utilities domain. Working on strategic and operational guidance for key O&G clients. Key Domain SME for devising Organization strategy for Energy Transition, Sustainability, Oil & gas and Utilities. Experience in leading key O&G accounts and prior experience include design and planning Greenfield Mining projects, Exploration of Minerals and developing Greenfield and active mining leases.

Vimal Amaldas, a Cloud Architect, works with Infosys, having 12 years of experience on deploying IT solutions in Oil & Gas Industry.
**Accelerating Exploration & Production Data Transfer from Field to Processing - Kristy DeMarco (Lyve Mobile)**

**Description of Presentation:** Data-intensive data processing workflows performed at the field level have always presented challenges in the Energy Exploration and Production Industry. From limited edge infrastructure storage and barriers to scale to limited transmission bandwidth and network capacity, companies have continuously strived to find and develop new recoverable hydrocarbon reserves. To solve these data management issues, Seagate Technology introduces strategies for improving data workflows for each phase of upstream production, from seismic data acquisition to legacy data migration. For example, when it comes to managing data in the field, instead of recording seismic, survey, and surveillance data on hundreds of tapes, upstream operations can significantly reduce their hardware footprint by recording data to field-ready storage arrays, substantially increasing disk space, reducing IT support requirements at the edge, and maximizing edge data storage resiliency. This session will address the key challenges to Energy Industry data management in upstream applications and discuss strategies and solutions that can be implemented at each stage of the data lifecycle to ensure data compliance and entitlement and promote ease of accessibility, both internally and externally, when shared by multiple companies.

**Short Biography:** Kristy DeMarco is the Director of PLM and Vertical Markets for Lyve Mobile Services at Seagate Technology. Joining Seagate 5 years ago, she now leads the Lyve Mobile Services PLM and go-to-market team focusing on accelerating time to data for edge applications across multiple data intensive workflows. Kristy and her team are chartered with translating key market and customer requirements into innovative solutions for future roadmap development and market enablement. Kristy also regularly presents at industry forums and conferences.

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**A New Approach to Data Identity and Data Identity Resolution - Dag Heggelund (Pando Scape Inc)**

**Description of Presentation:** This paper presents a new approach to Data Identity and Data Identity Resolution. Identity Resolution, in the context of this paper, focuses on finding the identity of Common Data Objects (CDOs) identified by different natural keys. Examples of CDOs in the oil industry are Wells, Completions, Perforations, Casings, Log Curves, etc. PPDM has spearheaded the development of Well and Wellbore Identification Standards. However, there are many other Common Data Objects within the oil industry, such as log-curves, deviation surveys, marker-picks, perforations, etc. that do not have an established Identification Standard. Data identity resolution is the process of identifying and linking different data records that refer to the same entity. The database community describes the process as merge-purge, data deduplication, and instance identification. The AI community describes the problem as database hardening and name matching. Having a clear identity of data is essential in many situations such as reducing data duplication, connecting data from different sources and Data Quality Management. As new technologies are being developed the need for strong data identity is becoming more and more important. Examples of these technologies are Web 3.0, digital-twins and block chains. The authors have worked in several industries, including oil & gas and food traceability. A key problem in food traceability is that food products may change their identity as they move down the supply chain. This creates a disconnect in digital supply chain causing great problems during a food safety event. Similar identity problems are encountered in the oil and gas industry. As CDOs move between applications, vendors, users and partners the CDO’s Identity is often missing or changed. There are two key problems that need to be addressed. One, develop a standard for how to represent a CDO’s identity and two, develop a methodology for creating and resolving CDO identities. The traditional approach to Identity resolution is to construct a list of “matching” attributes for each CDO, the Attribute Identity Vector. Using Attribute Identity Vector, various similarity functions have been developed to obtain a “measure” of how similar CDO S is with CDO T. A common approach is to “construct” a normalized name and use the name as the CDO identifier. Our approach is based on using the Attribute Identity Vector (AV) combined with a weight matrix (WM). The value of WM is obtained using standard machine learning algorithms. We propose the use of a Uniform Resource Name (URN) as the structure for creating unique identifiers for Common Data Objects. The URN structure as defined by the W3C has been successfully used in the food traceability industry to create the Electronic Product Code (EPC) to establish a permanent identifier for food products. We propose that the PPDM group considers establishing a URN structure that can be adopted by the industry for creating URNs for the oil and gas industry. We recommend the URN over other internet identifier structures such as URI and URL. This is because the URN allows for a standard governing the identifier structure and interpretation to be submitted to the IETF and filed as an official standard for the URN type. Having strong standardized CDO identifiers along with advanced algorithms for determining the CDO identifiers can greatly benefit the Oil & Gas industry as we are facing an increasing demand for more data, better data, and more consumable data. Having a standard way of expressing a CDO’s Identity is essential to the Oil & Gas industry in the age of the fourth industrial revolution (Industry 4.0).

**Short Biography:** Dag Heggelund has 30+ years in software & business development with a PhD in Petroleum Engineering from Texas A&M. In 1987 he was a founder of TS&I & later it was purchased by Scientific Software Inc. In 1998 Dag founded InnerLogix to focus on data quality problems, resulting in QCLogix & the DQM process. In 2007 Schlumberger acquired InnerLogix. In 2012 he joined Trace Register as their CTO. In 2022 Dag was part of the team that started Pando Scape.
### Expanded Data Manager Competencies
(PPDM Association)

#### S&P Global Cocktail Reception Sponsor Presentation

**The Intersection of Public Data & Technology**
John Ferrell (WellDatabase)

**Description of Presentation:** Public data in oil and gas dates back over 60 years. Over that time, and especially over the past two decades, publicly available oil and gas data has drastically changed. The types of data recorded have increased, as has the availability of that data in the public space. Over that same time, technological capabilities have grown exponentially as well. Today we have more data than ever and more technologies than we know what to do with. This presentation will focus on where technology and public data meet. What data is available, what technologies can be used with the data, the proper usage, and the hidden pitfalls few know about. You will leave knowing what data can and should be used with varying technologies, the inherent issues that come with public data, and most importantly, when data is being misused.

**Short Biography:** John Ferrell has spent the past 20+ years in Oil & Gas, primarily with data. John has worked at major operators, service companies, start-ups, and everything in-between. As Co-Founder & CEO of WellDatabase, John has spent the past 10 years immersed in all things public data. John is also a published author and an accomplished speaker. When not neck deep in data, John likes to spend time with his wife and five kids in the mountains of western Montana.

### Keynote - Storytelling: Turn Your Data Into Compelling Insights That Inspire Action.
John Hetherington (We Deliver Your Vision)

**Description of Presentation:** In a recent study by Stanford University, 63% of business leaders remember stories but only 5% could remember a single chart. It’s not enough to analyze data. You have to communicate the value of your data in a clear, compelling manner using stories. Storytelling not only connects us to our data but it’s essential ingredient for boosting your career with the power skill everyone wants—executive presence. In this session, John will give you a deeper understanding of the art and science of data storytelling with frameworks and practical tips for you to share your data in ways that persuade, motivate, and inspire.

**Short Biography:** John’s clients often say he has a super power for simplifying complexity and that’s why he founded “We Deliver Your Vision.com”. His team have helped 100’s of data managers and analysts to persuade, motivate, and inspire decision makers. He has 10 years strategic consulting experience with Deloitte and Ernst & Young and 25 years delivering data and technology projects in UK and Canada. He lives in Calgary with his wife Rebecca, two dogs and a cat and travels around the world for his clients.

### Alignment of Data Platforms and Data Management - Chris Hanton (IKON Science)

**Description of Presentation:** Open data platforms such as OSDU promise to deliver radical gains in productivity and innovation in the subsurface space through streamlining of data and application infrastructure. Improved accessibility will allow creation of new data-rich innovative workflows that will generate new insights in our industry. However, data accessibility is not enough. With centralized data sourcing there is a risk that without understanding and implementation of appropriate data management and data governance that data quality will be detrimental to end users, leading to the dreaded ‘data swamp’ and damaging confidence in the entire platform. This presentation showcases, with examples, how traditional data management processes and technology feed directly into contemporary data platforms to promote both data quality and data accessibility - ultimately powering next generation insights in the subsurface space.

**Short Biography:** Chris is a 15 year member of the energy industry, a career which has incorporated all facets of data, from acquisition, management and utilization. As Director of Digital Transformation at Ikon Science, Chris uses his experience to assist the energy industry make strides in productivity and impact by empowering business units through digital technology. Chris comes from a geoscience background with masters in Geology and Integrated Petroleum Geoscience.
Enhance Your Data Ecosystem with Blockchain As A Solution For Seismic Entitlements
Cindy Cummings & Rebecca Hofmann (Repsol)
Description of Presentation: Seismic is a long-lived asset the oil and gas operators and service company hold. Seismic is not static: A survey may be processed many times as new technologies become available, generating new versions of final and intermediate products. Seismic is used both to lease/license to others, or as a negotiation element in Joint Ventures. The ways that seismic is exchanged are many, and complex. Yet conditions on how it may be used varies. Because of its longevity and complex contractual framework, tracking the Entitlements of seismic can be difficult. Blockchain provides a way to track, in an immutable way, all the transactions between companies. Using Smart Contracts allows the rapid verification of conditions of use. Using a decentralized Blockchain ensures confidentiality of the transactions. Through the Blockchain for Energy Consortium, a Seismic Entitlements Minimum Viable Product (MVP) is being developed to create the first working Blockchain for Seismic Entitlements. Blockchain for Energy, Seismic Entitlements projects is a consortium led by Repsol and comprised of active members from Chevron, ConocoPhillips, Devon, Katalyst, ExxonMobil, Repsol and Schlumberger. Each company dedicates subject matter experts to develop requirements, workflows, attributes, and project direction. Katalyst recently dedicated seismic and workflow expertise to complete the MVP Storyboards, Object Matrices and Workflows to expedite the MVP. Some benefits of the B4E Seismic Entitlements Project MVP and future phases are to: Facilitate seismic marketplaces; Company Entitlements in Cloud Environments could be managed faster, safer and more cost efficiently. The PPDM Association (PPDM) and the Blockchain for Energy (B4E) have signed a Memorandum of Understanding that intends to support integration and harmonization of the work being done by both organizations. PPDM and B4E will collaborate to harmonize terminology, data contents and identify opportunities for best practices.
Short Biography: Cindy has over 35 years of work experience in the oil and gas industry in areas of exploration, development, production and information management. Cindy worked for Conoco, IHS, and is currently in IM at Repsol in the Woodlands, Texas. She has presented papers on Oil and Gas Data Management, Data Governance, Technology, over the years at PNEC, PPDM conferences. Cindy is also a certified PM, currently working on the PMO team and BC Seismic Entitlements for the B4E and PPDM co-chair of PDC. Rebecca Hofmann is an accomplished finance and compliance leader with over 20 years of experience in the energy industry. Her past operational assignments have covered the development and improvement of processes over governance and compliance to support onshore and offshore operations. She is the founder and visionary behind the Blockchain for Energy consortium — where she is the standing CEO and served as chairman of the board two years prior. Hofmann’s many industry awards and accolades include the 2018 GRIT Award for Creativity and Innovation, the 2019 GRIT Award for her team’s work in emerging technologies, and the 2021 Global Supply Chain Leaders Blockchain CEO of the Year Award. She has also authored several thought leadership articles related to blockchain technology. https://www.blockchainforenergy.net/

A Trusted Seismic Archive is More Than Just Online Data - Paul Thompson (Talus Technologies)
Description of Presentation: In the past digitization meant moving from physical media to online documents and files; now, it’s about being able to use your seismic data in the cloud. A trusted seismic archive is much more than simply having SEG-Y data available online or in the cloud. In this presentation we will look at some of the question regarding a trusted seismic archive. When a seismic survey has thousands of files available for use, which is the correct one for you? Is the online seismic data workstation-ready? What does workstation-ready even mean? What is real-time availability for seismic data? How do you quickly adapt to change in the digital world? And not least, with the ongoing resource cutbacks, how can you manage more data with fewer people?
Short Biography: Paul has over 20 years of experience in designing and developing software applications for seismic data management. Paul has been with Talus for over 10 years and before joining Talus, Paul worked as a consultant at Calgary EDM Solutions. Paul has very broad and in-depth knowledge of seismic data management practices. He currently manages Talus’ integration services team and is one of the lead engineers behind Exploration Archives.

OSDU – Turning Concepts on Paper to Early Business Success - Samanda Bell (Shell)
Description of Presentation: Participating companies in (O)SDU have different perspectives on what drives their decisions. Decisions include why, how, and when to participate in OSDU plus the pace of adoption in order to meet business goals, create efficient workflows and lead to new subsurface insights. During this interactive discussion, you will gain practical insights from Shell’s journey to date on how to get ready for the change and what your future can look like (how you can drive future outcomes by prioritizing your future actions).
Short Biography: Samanda has spent over 30 years in the Global Upstream Oil & Gas industry. Her experience extends the full life cycle from Exploration through Development to Abandonment. Samanda has worked in Australia, The Middle East, Asia, UK, India, Europe & the Americas. As Manager Technical Data and Digital Americas, she leverages her broad experience as a Geoscientist, Subsurface Operations Lead, Front End Development Manager, Digital Transformation Lead, Change Manager & Consultant.
Automated Image Digitization using Machine Learning - Sunil Garg & Samir Jain (DATAVEDIK)

Description of Presentation: Vast amounts of Oil and Gas knowledge is hidden in documents (e.g. well reports, drilling reports, permits etc.) and images (e.g. logs, core photos, thin sections etc.). Extracting data from these unstructured sources is often manual and extremely time consuming. Recent advances in Machine Learning and AI technologies can help to extract useful information from these documents and images at scale and then augment and fill the gaps in the data stored in structured repositories. This presentation will focus on the research work done to extract data from Well Log Images using a combination of several big data processing techniques and machine learning models. The extracted data is then converted into digital LAS files which are further used to train machine learning models for several geoscience/drilling workflows, some of which will be discussed in this presentation. We will present the challenges faced in the various steps of the process as well as the solution approaches to overcome these challenges. Finally, we will discuss the operational efficiencies achieved as a result of the automation done using the power of AI/ML.

Short Biography: Sunil Garg is the founder and CEO of dataVediK, a Houston based startup building DataMoKsha Hyper-Converged Data and Analytics Platform for Oil & Gas industry. Prior to this, he spent 20+ years establishing and growing Data Management, Big Data and Analytics business for Schlumberger. Sunil has deep understanding of Oil and Gas data, Data Science & ML and uses the combination to build end user centric solutions. He is a member of several industry organizations and forums like SPE, AAPG, PPDM. Data and Information Management Leader with over two and half decades of International Experience in Upstream Data, Analytics and Digital Transformation. Experience working on high level initiatives like Enterprise IM, Defining/Executing Future Roadmaps, Governance, MDM in the field of Upstream Oil and Gas. Currently also involved in growing OSDU initiatives across companies and communities. Good understanding of Houston’s rapidly growing startup ecosystem.

International Energy Data Standards Updates and Workshop (PPDM Association Work Groups and Committees)

To Define the Problem of “Orphan” Wells
Dwayne Purvis (Dwayne Purvis PE)

Description of Presentation: The US industry has entered a new phase of its lifecycle with the large majority of wells close to or ready for retirement. The issue sneaked up on the industry, and we are not strategically or financially prepared to address the problem. In fact, we do not have a functional vocabulary to talk about the physical situation or financial measures to understand the issue. The first step to solving any problem is to define it and to measure it. This presentation offers a template to define and measure both the physical and financial situation, and it calls for further discussion and standardization through the PPDM.

Short Biography: Dwayne Purvis, P.E. offers consulting and advisory services for the oil and gas industry, building on two and a half decades in reservoir engineering and executive leadership as a consultant and operator. From engineering studies and reserve reports to strategic decision-making on the energy transition, Mr. Purvis helps operators and investors with reliable analysis for prudent decisions.
Understanding Emotional Intelligence and Leading in Data  - Interactive - Melinda East (Focus Forward)

Description of Presentation: Emotional Intelligence is something that we all have, but do we know how to leverage it and use emotional information in an effective and meaningful way. In this interactive talk we will discuss the science behind emotional intelligence and the tools and concepts that you can use to influence and lead data transformations at your organization and within your teams. Progressing your leadership skills through effective navigation and use of your emotions and the emotions of others.

Short Biography: A Certified EQ-i Trainer/Facilitator and Executive Coach as well as a Data Strategy Consultant. 25+ years as a Data Professional and Leader. Worked in the energy industry, telecommunications, and financial services industries all through the lens of data strategy.

Building Digital Capability is Everyone’s Responsibility  - Interactive - Douglas Frisby (Sword ITS)

Description of Presentation: The ongoing digital evolution of the oil and gas industry depends on the ability to enhance the capability of our staff. To achieve the required digital progress, it is becoming more critical that companies have access to competent, capable data professionals with domain knowledge and the ability to work collaboratively. How do all the stakeholders in the industry either as data professionals, operators and suppliers discharge our responsibilities to grow the capability in this ever-evolving digital landscape. Realizing the value from the ever-increasing volumes of data and disparate data sources requires more engaged, energized and capable data professionals. This presentation will present some questions, suggestions and thinking to address the following challenges: • What is the right combination of digital, domain and interpersonal skills that we can build from and how to engage and energize individuals to be committed to their lifetime development? • How can we as employers in all stages of the business value chain work to build the capability that our organizations need to thrive in the digital environment today? • How can operating companies support the development of talent in suppliers whilst still maintaining the appropriate business relationships to the benefit of all stakeholders? The long-term competitiveness of our industry needs more digitally capable data professionals and from this presentation maybe there is something that inspires you to contribute to this important agenda.

Short Biography: Douglas Frisby established the Houston branch for Sword Group in 2020, to provide quality data and information management services to the local energy industry. This leveraged his 30+ years’ experience at Amoco and BP in all phases of the Exploration and Production business across multiple continents. Douglas has been based in the US, UK and Argentina and he has worked extensively with local staff and leaders in many different countries. His assignments in the oil and gas industry include leadership roles of teams in Petroleum Engineering, Geoscience, Drilling, Exploration, Business Development, Learning and Data Management. Douglas has had great success through building multi-disciplinary teams to work collaboratively across organizational lines to resolve complex problems. He is recognized for his development of technical staff and leaders through coaching, mentoring and support. He holds a bachelor’s degree in Chemical Engineering from the University of Birmingham, an MBA from Cranfield University, and a Coaching qualification from Rice University.

Optimizing oil and gas value chain with network graphs - Vivek Anand, Nishanth Raj (Deloitte Consulting)

Effective decision making is critical to the success of the oil and gas operations as it can impact everything from project timelines to profitability. Graph technology has emerged as a powerful tool for decision making in the oil and gas industry by enabling the analysis of complex relationships and dependencies between data points. This paper illustrates the benefits of network graphs for improving oil and gas supply chain operations by identifying hidden patterns in the data and predicting outcomes in real time. Network graphs link data from a variety of sources which in turn provides high quality data for optimizing routing, streamlining transportation processes, and improving profitability. Furthermore, network graphs allow for easy modeling of data entities across various systems, thereby enabling analysts to navigate through datasets without the requirement of writing complex queries. By employing machine leaning algorithms such as anomaly detection on graph, data quality issues can be further identified and eliminated with greater certainty.

CPDA Prep Program Curriculum
PPDM Association
### Real World Multi-Disciplinary Analytics
Nathan Zenero (WellDrive)

A good data ecosystem is one that has at least three fundamental traits: It accurately represents our current understanding of the physical world, it is necessary and sufficient to ask and answer questions that drive value, and it is extensible to answer questions that may reasonably arise in the future. These traits are difficult to achieve with limited stakeholders and narrow scope. However, they may be impossible to realize when many stakeholders are involved, each with different perspectives and desired outcomes. An example of how a group successfully created a data ecosystem (though admittedly limited in scope) that satisfied all three requirements is shown by the work of the IADC in 2022 in creating new PDC bit grading guidelines with equal focus on data, sharing, and physical and digital processes. The IADC created three working groups that had SMEs with sufficiently broad skillsets to simultaneously derive grading schemas, data taxonomies, principles for extensibility, and recommendations for sharing among highly differentiated stakeholders. The results were a set of recommended practices that fundamentally altered and improved the method to grade PDC bits, cleared a path for physical and digital automation, and open-sourced a schema to interchange data. The existing grading rubric was highly flawed—based on coarse, macro-level inspection of cutters that only included 8 discrete potential grades and only allowed description of damage representing the whole bit. It was never clear if the discrete values were intended to represent the average or maximum wear or damage and the rubric encouraged subjectivity. The new grading method allowed for hyper granular evaluation to the micro level—supporting descriptions of damage to regions of cutters, and expressions of logical topologies of the physical specimen. The existing rubric also did not support the fusion of structured and unstructured data. The newly developed methods explicitly encouraged the inclusion of unstructured data and was developed with current and future technologies in mind. The new grading guidelines also encouraged extensibility by design and the wisdom of that approach paid dividends only days after publication. It was then that field users suggested improvements which required expansion of parts of the data model and schema which, because of extensibility by design, was corrected very quickly. Because of the joint effort by digital, engineering, and operations professionals, the IADC now has a pattern to extend their work to other domains and demonstrate to others how an effective data ecosystem can be built.

### Why the Changing World of Energy is Benefiting from Open Data Ecosystems
Reishin Toolsi (Databricks)

Description of Presentation: Open data ecosystems and generative artificial intelligence (AI) are emerging as powerful tools in the energy world, offering new possibilities for addressing complex challenges related to sustainability, efficiency, and innovation. Open data ecosystems provide access to diverse sources of data, structured and unstructured data, including government data, utility data, sensor data, and more, which can be leveraged by generative AI models to generate valuable insights, predictions, and recommendations. Generative AI, including machine learning and deep learning techniques, can analyze large and complex datasets from open data ecosystems to uncover patterns, trends, and correlations. These AI models can generate insights that can inform decision-making processes, optimize energy usage, predict maintenance needs, optimize grid operations, and support renewable energy integration, among other applications. The combination of open data and generative AI has the potential to drive significant improvements in energy management, resource allocation, and operational efficiency. One aspect of Generative AI is data generated from training LLMS (large learning models) like ChatGPT. Open data ecosystems can significantly enhance LLMS by providing access to vast and diverse datasets for training and validation. These ecosystems enable researchers and developers to access publicly available data, such as government records, research publications, training manuals, Corporate language, and more. The utilization of open data can enrich training data, enhance model accuracy, and improve generalization. Additionally, open data ecosystems foster collaborative research and development, allowing for knowledge sharing, data-driven innovation, and model benchmarking. During this talk we will explore the State of global Energy, the driving factors behind Energy transition and how the convergence of open data ecosystems and generative AI presents exciting opportunities for advancing sustainability, efficiency, and innovation in the energy world.

Short Biography: Reishin worked at SLB for 14 years, eventually realizing the opportunity to transfer his knowledge of energy focused technology to a position working more directly with AI. He is currently a Sr Solutions Architect and Energy Subject Matter Expert for Databricks - The Lakehouse company. This position has allowed him to combine his passion for AI with his expertise in the connected energy ecosystem, therefore leading the effort of simplifying the way Databricks clients access and use data.
Digital Oilfield for Sustainability and Operational Excellence
Sandeep Ghosh & Frank WHyte (Perficient)

Description of Presentation: For decades, the oil and gas industry has innovated on incredible ways to find, extract, and produce energy resources the world needs. With the rise of easily available telemetry data from oilfield equipment and other related data feeds, oil and gas companies have immense opportunities to increase operational efficiency and react faster to the changing world. This technological shift is occurring just as the industry must reinvent itself to meet growing energy demands while reducing emissions and addressing the surge in Environmental, Social, and Governance (ESG) issues and requirements. In the world of petroleum production, these shifts require the oilfield to go digital. That means being able to utilize near-real-time measurements to create a digital twin of the oilfield. This virtual model, combined with predictive and prescriptive analysis, enables more sustainable Upstream operations: optimizing production, tracking, and reducing emissions, improving operational efficiency and worker safety, and increasing productivity. While there are many software solutions available that tactically address aspects of a digital oilfield, e.g., digital logbooks, SCADA systems, inventory management, workforce management, and business process systems, there is, however, no holistic commercial off-the-shelf digital oilfield platform (SaaS or otherwise) on the market. Each enterprise must individually prioritize business drivers and design a Digital Oilfield solution that stitches together a collection of custom-built workflows and components. Business drivers could be varied, ranging from sustainability, record keeping, reporting, production optimization, or some combination. Data is the key to success. That data needs to be discoverable, available, and trustable. Leaders across industries are focused on becoming data-driven enterprises – join us to learn how yours can be too.

Short Biography: Sandeep Ghosh – Perficient, Director Sandeep Ghosh is a Director at Perficient, focusing on the energy and utilities industry delivering custom application development and data modernization solutions. Before joining Perficient, Sandeep worked for Anadarko Petroleum, an upstream E&P company, initially focusing on building Well Lifecycle Management, Well Planning, and other business solutions. After the formation of the Advanced Analytics and Emerging Technologies (AAET) organization, Sandeep served as an IT Advisor, where he oversaw a team building an Integrated Production Surveillance and Optimization Digital Oilfield solution for the Gulf of Mexico (GOM) asset. The Digital Oilfield solution involved implementing several workflows that ranged from fast-loop processes for near real-time alarms and alerts, medium-loop processes such as well route optimization, and slow-loop processes such as reservoir production optimization, downtime optimization, and production forecasting.

Frank Whyte is a Data and Intelligence leader at Perficient, with over 25 years of experience designing and delivering solutions for many industries around the world – from Logistics in South Africa, Government in the UK, Utilities in Australia, Manufacturing in Mexico, to Insurance, Finance, Manufacturing, Chemical, Oil and Gas and Healthcare in the US. Before joining Perficient, Frank was a Solution Architect/Enterprise Account Executive for Software AG/webMethods, focused on the TOLA region, and prior to that was a lead architect/delivery manager for TIBCO Software in Australia/Europe/NAM. In Oil and Gas, Frank has led projects across the value chain – from exploration and production, transportation, refining and retail to energy trading – and solutions as diverse as predictive maintenance, material master data management, trading arbitrage, and executive dashboards.

Managing Sustainability with estimated data quality
Jim Soos (Planckton Data Technologies, Inc.)

Description of Presentation: Climate change is part of our world now. The path to net zero continues to be challenging for energy companies, and society. People around the globe are attempting to tackle climate change through the reduction of greenhouse gas emissions. While many of the various GHG emissions are part of our everyday life, our ability to measure and account for every particle that a company produces is complex. Without the ability to accurately measure GHG as it relates to the operations of the company, we will be at an ongoing disadvantage at achieving corporate goals. In the absence of measured emissions on every aspect of the company’s operations and supply chain, companies must rely on other data to make accurate estimates of their true carbon emissions. Taking a good data management approach along with the GHG Protocol guidance can go a long way toward improving uncertainty in reporting. My discussion topic will provide insights into carbon data management challenges and strategies to manage the path to accurate emissions reporting.

Short Biography: Jim has devoted his career in providing digital transformation, data management services, and business enabling capabilities across the Energy industry. His career includes Deployment Manager at IBM/PwC, Energy Practice lead for Noah Consulting, Energy Partner at Infosys North America, and served on the PPDM board of directors. Jim now heads up Planckton Data’s consulting services which is leading Energy companies to net zero with better data management.
Cross Industry Data Panel Discussion
Greg Foley (The FerVID Group) Sean Hanrahan (Platypus Brewing), Andre Pontin (Melax Technologies) and Jim Holl (ExxonMobil).

Greg Foley will moderate a panel of data consumers representing manufacturing (beer), medical research and innovation.

Short Biography: Greg Foley joined The FerVID Group in April 2017 and is responsible for Business Strategy and Business Development. Previously he had introduced Brisbane based startup, RedEye, to the US market. With 31 years of market development experience applying technology to solve business problems including 24 years in Oil & Gas, he is very focused on customer satisfaction. Prior to moving to the United States in 1999 and joining Petris Technology where he spent 11 ½ years followed by 4 years at Stonebridge, he was responsible for establishing HAHT Software in South East Asia.Mr. Foley has also worked in Australia for Fujitsu, Digital Equipment Corporation and ComputerLand. He previously taught for 12 years at St. Aloysius’ College in Sydney. Outside of work, Greg has served on the Board of the Australian American Chamber of Commerce for 21 ½ years, serving 6 as President. He has also served 2 years on the Board of the Woodland Heights Civic Association.

Sean Hanrahan: Owner and creator of Platypus Brewing. Sean Hanrahan is a transformed mining, oil & gas strategy and commercial executive who aims to make the world a better place, one beer at a time.
A business graduate of Queensland University of Technology, with an MBA and CPA, Sean was recruited to a large multi-national organization out of college. This started a journey that would propel Sean to remote iron ore mines in Australia, across the rather large pond to Houston, back to Australia in copper, uranium, gold and silver mines and coking coal mines (not all at the same time!), and finally to the world of small business and the wonderful nectar of beer back in Houston.
With over 30 years’ experience across small business and large multinational organizations in manufacturing, hospitality and natural resources, Sean has a broad and unique track record of achievements. Within corporate, this includes delivering the divestment of an oil and gas field in Papua New Guinea and formulating and delivering a $1Bn infrastructure and human resource strategy in mining. Sean’s current focus is on private investments and small business, notably Platypus Brewing, a brewery and restaurant concept he developed and built in 2015.

Andre Pontin: Andre is an experienced healthcare executive with a proven track record in creating strategic partnerships, scaling startups, large enterprise sales agreements, business development and product innovation. Andre is an integral part of the digital solution landscape and is also an active member in the global digital health ecosystem. He has previously held leadership positions at both 2nd.MD and DoseMe, both of which exited for a combined value of over $500m. Andre is currently CEO of Melax Tech a leading Artificial Intelligence company based in Houston.