

OIL & GAS DIGITAL TWIN CONFERENCE 2022

Opportunities to Boost Profitability and Strategies to Maximize Efficiencies in Oil and Gas Production

AGENDA 2022

Day 1

Wednesday, 11 May 2022

Eastern Time (ET)

9:45 **Welcome Speech**

10:00 **Information Model and Digital Twin - Creating Value from Data**

- Introduction - What is Digital Twin?
- Plant life cycle and use of digital twin
- Digital twin Information Model
- Key Enabling Technologies/drivers
- Digital Twin Maturity
- Improved value & Insight using Digital twin
- Implementation Challenges

Vinayak Kharche | Adani Enterprises Limited



10:30 **The Digital Asset – The Foundation for “Analytics”, Digital Transformation, OpEx, and Decarbonization**

- Relationship to the digital twin and discuss the importance of and best practices in accelerating the journey through data, information and intelligence and the role of the digital asset and digital twin
- The digital asset will be positioned as the nexus for delivering business and social value from “analytics”, digital transformation, operational excellence, and decarbonization strategies and programs

Craig Harclerode | AVEVA
Platinum Sponsor



11:00 **Real Time Completion Surveys and Analysis**

- Near Real time unsupervised learning to detect the formation parameters.
- Flagging abnormal events interactively
- Operation detection

Atheer Alattar | TIBCO Software
Gold Sponsor



11:30 **Networking Break**

12:00 **Reserved**

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13:00 **Overcoming Complexities of Deploying Additional Advanced AI/ML Analytics**

- IoT Edge virtualization: combining VMs & Containers
- 5G implications on latency, throughput, and cost of deployment
- Cost effective centralization of the Data Lake and Compute: Use of Cloud services
- Making the environment resilient: clustered edge, cloud disaster recovery

Russ Sagert | NetApp



13:30 **Reserved**

14:00 **Beartooth: Applying Digital Twin to Advanced Nuclear Fuel Cycles**

- The use of models-based systems engineering as part of digital engineering to ensure system design success and incorporation of digital elements
- Use of XR technologies in design
- Envisioned use of real-time data for experimentation and operations

Kaleb Houck | Idaho National Laboratory



14:30 **Networking Break**

15:00 **Oil & Gas Retail sites – Digital Transformation**

- Retail Innovation – what does it really entails
- Retail sites as a hub of services
- Digital transformation at a Retail site

Stelios Panaretos | Motor Oil Hellas



15:30 **Digital Twin, extended Realities and Metaverse**

- Understanding Digital Twin embedded on Extended Realities Devices and their benefits
- Metaverse and a glance of the future

Vitor Do Valle | Petrobras



16:00 **End of Day 1**

9:30	Sustainable Digital Twinning: Why is it Time to think now, for the Future - Integrating New with Old - Technological Debt - Plan for Obsolescence Pankaj Srivastava Nayara Energy 
10:00	Production Process Digital Twins – Real Value Mandates Modelling Rigour - How production depends on phase separation - Simulation-based digital twins with and without rigorous modelling - Review of progress and potential future developments Tom Ralston & Wim Moyson MySep Platinum Sponsor 
10:30	Real-time, Model Based Digital Twin for Energy and Emissions Management - Process plants need to consider how the available energy vectors, either traditional or renewables sources, can be produced, distributed, mixed and used by integrating them within or reformulating existing energy systems. The objective is to reduce both costs, and GHGs emissions. Selecting which energy source should be used at any given time depends on having data related to all the possible options. Data values could fluctuate in time, depending on power price, weather conditions, renewable sources availability, etc. - For large-scale O&G plants, energy normally accounts for 50% of operating expenses. Consequently, reducing energy use by 10% can often improve margins by 5%. As companies seek to maintain profits and reduce emissions, energy optimization is one of the first places to look. - In a renewable dominated scenario, due to the variability of the climate factors impacting the power generation, energy storage mechanisms should be available to capture the surplus and be used as a backup when renewable generation is expected to decline. A decision is to be taken, in real-time, about when to fill or deplete the storage and when to activate internal power production. A great challenge for the person or group in charge of optimally managing the energy system is the change in traditional mind set and optimization objectives. This kind of analysis cannot be done manually to the extent and with the necessary speed for a large and complex facility, especially when renewables are involved. Using a real-time, model based, Digital Twin approach, can consider both the sources and uses of energy, making it possible to optimize selections well beyond conventional energy and emissions reduction efforts. Carlos Ruiz KBC Gold Sponsor  A Yokogawa Company
11:00	How to Achieve Efficiency in asset lifecycle development and operations by digital twin - The shocks of COVID-19 combined with growing momentum to transition to a low carbon future, accelerates the need for Oil & Gas companies to 'supercharge' their digital agendas. - The need to build new and modify existing plants into efficient, connected and sustainable facilities of the future is moving at a faster pace than ever before. In the push to net zero, it is imperative to design, build and operate plants more efficiently and cost-effectively is the new norm. - There is a direct correlation between efficiency and sustainability. - Digital solutions are a key enabler to achieve both and deliver the plant of the future Wassim Ghadban Kent PLC 
11:30	Optimization of Facilities using Auto-Calibrated Hybrid-Based Digital Twins - A physics-based simulation tool with built in AI allows building digital twins to empower users to model and optimize energy processing facilities - New techniques to auto-calibrate this process models will save a lot of time and make these digital twins autonomous Saad Kisra Schlumberger Gold Sponsor 
12:00	Networking Break
12:30	AI-Based Intelligent Data Loss Incident Response Plan - AI-Based Intelligent Data Loss Incident Response is a solution to provide automated response to Data Loss incidents by collecting, correlating and analyzing large amounts of security incidents data from across diverse sources, including all data exfiltration channels, corporate asset data, and alerts from other security systems - It's based on highly advanced big data analytics platform empowered with Artificial Intelligence & Machine Learning security analytics models to transform Data Loss Prevention (DLP) from traditional data centric monitoring to intelligent and proactive monitoring Rafiq Khurshid Saudi Aramco 
13:00	Industrial Cybersecurity – A Catalyst for Digital Transformation - Security – a building block to enable Digital Transformation - Risk based approach to focus investment - Security framework implementation - Sustainable solutions to adapt to emerging trends - Security data enrichment & Digital Transformation for predictive maintenance - Leveraging Digital Twins, AI & ML for cybersecurity Arthi Vasudevan Nexus Controls LLC Gold Sponsor 
13:30	Brownfield Digital Twins - A crash course - Combine existing OT/IT/ET/visual data to build a value-generating, extendable, and open digital twin of any legacy assets - Hands-on demo of secure data integration, contextualization, and operations (DataOps) best-practices for brownfields - Examples of hard ROI digital twin use cases such as production optimization Petteri Vainikkka Cognite 
14:00	Condition Based Maintenance: Technological Solutions for Effective Implementation - Current challenges facing the effective implementation of CBM - Combination of technologies as a Solution towards Effective implementation - Leveraging data and technology for predictive analysis Tihomir Kezic & Jude Iyinbor Bureau Veritas Marine & Offshore 
14:30	Networking Break
15:00	Digital Twins for Smart Buildings to Unlock your Business Potential Based on Real Customer Projects, not just Theory - Why use digital twins for smart buildings? - How to connect BIM & IoT to a digital twin? - What benefits you get in the operation phase? - Takeaways Kevin Bauer Siemens 
15:30	Digitizing Energy Infrastructure Construction: Collect it Once, Collect it Well, Use it Everywhere - What are the benefits of digitizing energy infrastructure construction? - Why is it important to take advantage of digital data captured during construction for the creation of a digital twin? - What does digitizing energy infrastructure construction look like? - Where do I start to move my organization forward? - What predictions are possible now? Brett Vogt & Nichole Killingsworth Project Consulting Services 
16:00	End of Day 2

9:30	Leveraging New Age Digitalization Solutions in Oil&Gas, Refining and Petrochemical Industries to Achieve Sustainable Manufacturing • Sustainable practices in Oil&Gas, Refining and petrochemical industries is gaining immense importance and these practices can be seamless integrated into business operations and improved through the application of digital solutions. • Effective use of digital solutions utilizes digital technologies to convert data to Augmented Intelligence that enables closer to real-time access to decision quality information facilitating improvements in existing manufacturing units for greater sustainability • Digital Twin and predictive models using Advanced Analytics enable better identification of energy savings opportunities and productivity improvements, both of which impact the carbon footprint and hence sustainability and allow more innovative design changes. • Ingenero's Sustainability Program, I-SSPDE, integrates edge computing with advanced analytics utilizing the full potential of Industrial Internet of Things (IIoT). By combining latest smart technologies and tools, I-SSPDE acts as a force multiplier and allows manufacturers in the Oil & Gas, Midstream, Refining, Petrochemicals industry, to advance their energy management, safety modeling and automation processes. Ranjit Panchal Ingenero
10:00	TBA Bentley Systems Gold Sponsor
10:30	Real-time Hydrocarbon Blending Optimization Using Virtual Analyzers • Midstream crude oil facilities often lack information on their product quality, which leads to either overly conservative/unoptimized or risky blending programs • One way companies can address this is with digital twin type solutions that can accurately predict unknown product quality properties and automatically optimize operations in real-time. Using probabilistic approach to optimization allows companies to: - Quantify the measurement uncertainty and its sources - Optimize safety margins - Provide a justifiable measurement program • Once midstream companies implement these digital twin controls, they can increase blending terminal profits by blending closer to the targets while reducing the shut-in risk by carefully accounting for measurement uncertainty. Misha Askerka Validere Gold Sponsor 
11:00	PROMERSIVE AT A GLANCE • AI-Assisted Computer Vision • Core Features • Compatible Data Sources • Codes & Standard Compliancy Nakisa Jahromi Enerkeen Bronze Sponsor 
11:30	Operational Improvements using Digital Twin • Breakdown of the 3 Digital Twin Streams and how WSP approaches them • How visual digital twins are used for operations training Jean-Frederick Duquette WSP Bronze Sponsor 
12:00	Networking Break
12:30	Globally Connecting The Full Spectrum of Air and Gas Handling Assets • A couple of minutes on the intro point. • 20 minutes on the various technologies used. • A couple of minutes on future predictions and trends. Billy Milligan Howden 
13:00	Process Expertise and Digital Technology at the service of our Customers: a Real-Time Digital Twin for Snamprogetti™ Urea Performance Service • Digital Technology allows process licensors to propose Innovative customer engagement models offering flexibility and a personalized experience, opening up new revenue, cost saving and reliability enhancing opportunities for plant operators. Saipem, in partnership with Honeywell, now offer a new service based on a digital twin solution for plant performance optimization, mixing the most advanced digital technology provided by Honeywell with Saipem's Urea Process expertise. • The Digital Twin for Snamprogetti™ Urea Performance Service focuses on process performance optimization, improvement of productivity and energy efficiency, reduction of carbon emissions. The solution will allow customers to gain insights on deviation from optimal performance, to identify opportunities and issues rapidly, to access alerts and actionable recommendations both through digital solution and/or Saipem expert guidance. • The Digital Twin Solution consists of a SaaS Offering, based on Honeywell FORGE technology and Snamprogetti™ Urea process models, and Saipem expert support services to customer plant operators. Giuseppe Trefiletti Saipem Andrea Mancini Honeywell 
13:30	Employing Combined Subsurface and Facility Digital Twins to Optimize Production and Reduce Carbon Footprint of Oil and Gas Assets • Practical digital twins that span reservoir and facility models and data to maximize asset performance • Exploit existing data and employ hybrid models to integrate AI into predictive power of the digital twin • Identify opportunities for carbon emission reduction in producing assets • Case studies Gerardo Muñoz Aspen Technology 
14:00	Disrupting Physical Assets into Smart Digital Entities • How we reduce employee operational costs by endowing physical assets the capability to interact with them bi-directally • Centralize all the services related to an asset, from the asset itself. Interconnect existing systems such as ERP's, AR's, active IoT, etc. and make them available from the asset itself • We make it happen in 2 simple steps and 1 easy action, with no need to change any existing infrastructure • Simply Connect Jordi Breda TicTAP - Simply Connect 
14:30	Networking Break
15:00	How will investments in digital twin capabilities pay off? • Business process improvements • Product/service enhancements • New business model opportunities Alan Coughtrey Tech-option
15:30	End of Day 3