



APSG 44 FALL MEETING

EMBRACING THE DIGITAL REACH

CHALLENGES, LESSONS LEARNED, & MOVING FORWARD



APSG
THE ASSOCIATION OF
Petroleum Surveying & Geomatics

TUESDAY, NOVEMBER 10, 2020

VIRTUAL | ONLINE WEBINAR

APSG 44 FALL MEETING

AGENDA

VIRTUAL WEBINAR

8:30 - 8:40 AM CT

Welcome & Chair Updates

Chris Echols | *APSG Chair*

8:40 - 8:45 AM CT

Introduction To "Embracing the Digital Reach: Lessons Learned and Moving Forward"

Stacey Lyle | *APSG Education Chair*

8:45 - 9:10 AM CT

Digital Moving Forward With Confidence

Dawn Robertson | *Global BD Director, Bureau Veritas*

9:10 - 9:35 AM CT

Starlink - What The New Low Earth Orbit Satellite Constellation Will Bring To Survey and Geomatics

Guy Holmes | *President and CEO, TapeArk*

9:35 - 10:00 AM CT

Pipeline Inspections Using Machine Learning, Our Human In The Loop Approach

Mike Gallo | *Technical Business Development Manager, Rovco*

10:00 - 10:10 AM CT

10-Minute Break

10:10 - 10:30 AM CT

APSG Education Foundation Updates

Ellen West Nodwell | *Chair, APSG Education Foundation*

10:30 - 10:55 AM CT

BP Atlantis Ocean Bottom Node and Wolfspar® Survey Remote Monitoring and Remote Operations

Ian Dootson | *Hydrographic Surveyor, BP*

10:55 - 11:00

APSG Elections + Introduction to New Chairs

Chris Echols | *APSG Chair*

11:00 - 11:25 AM CT

Risk Adaption As A Requirement For Surviving and Winning In A Digital World / Lessons Learned From Military Special Operations, Leading Business Teams, and Raising Venture Capital

Joe Wolfel | *CEO, Terradepth*

11:25 - 11:50 AM CT

How The Coming Satellite Constellations Will Affect Offshore Communications

Keith Vickery | *President, Zupt*

11:50 AM - 12:00 PM CT

10-Minute Break

12:00 - 12:25 PM CT

Ensuring Remote Connectivity To Enable The "Rig Of The Future" Today

TJ Gallagher | *Business Development Manager, Oceaneering Remote Operations Group*

12:25 - 12:50 PM CT

Enable Geomatics Where It Needs To Be

Kris Berglund | *Vice President of Sales, Blue Marble*

12:50 PM CT

Closing Remarks + Thanks

Aidan Thirsk | *Incoming 2021 APSG Chair*

**8:30
AM**

Welcome & Chair Updates

Chris Echols | APSG Chair | chair@apsg.info

Our current Chair will welcome attendees to this online event, providing updates on membership within the Association of Petroleum Surveying and Geomatics (APSG) as well as any upcoming events.

**8:40
AM**

Introduction To "Embracing the Digital Reach: Lessons Learned and Moving Forward"

Stacey Lyle | APSG Education Chair | education@apsg.info

Our current Education Chair will provide an introduction to the theme of this meeting, laying the groundwork for the topics our presenters will cover throughout the morning and relating these innovations to our perspectives fields.

**8:45
AM**

Digital Moving Forward With Confidence

Dawn Robertson | Global BD Director, Bureau Veritas

The oil and gas industry is currently enduring one of the most challenging periods in its history. The impact of the COVID-19 pandemic significantly accelerated an existing decline in global demand for hydrocarbons, resulting in the lowest oil prices for 30 years. This has left the industry facing the dual challenge of ensuring successful and safe working conditions and practices for employees while maintaining the economic viability of assets.

One area that has the potential to present significant opportunities for oil and gas companies is the greater adoption of digital technology, most specifically in improved asset integrity management. Bureau Veritas have embraced and accelerated the transition to remote inspections, remote verification and digital twin technology. With the increasing focus on remote operations to maintain the economic viability of assets, increase safety and reduce risk, the current market conditions coupled with COVID-19 are working as a catalyst for change and represents the perfect window for digitalization to make a quantum leap from a 'want' to a 'need'.

**9:10
AM**

Starlink - What The New Low Earth Orbit Satellite Constellation Will Bring To Survey and Geomatics

Guy Holmes | President and CEO, TapeArk

The low latency high bandwidth LEO satellite system will offer the entire survey and geomatics community new, safer, faster, and more accurate methods of performing their tasks while also being universally available around the world in all geographies and environments. The new satellite system will open the flood gates to high volume low latency live data acquisition from the field direct to the user by the end of the year 2020. The presentation is meant to provoke thought on what new possibilities this technology will enable.

9:35
AM

Pipeline Inspections Using Machine Learning, Our Human In The Loop Approach

Mike Gallo | Technical Business Development Manager, Rovco

Pipeline inspections are amongst the most time consuming, error-prone operations in O&G surveying. At Rovco we set out to use our Machine Learning (ML) expertise to solve this issue. We created a capable ML tool that allowed users to identify features and defects quickly, turning hours into minutes. After the first iteration, we were left with the following questions:

- *How do you verify that the ML output is correct?*
- *How do you get the system to spot unexpected features and anomalies, things it hasn't seen before?*
- *We all understand ML systems can improve over time, but how do you train a ML engine, whilst still saving time?*

We managed to solve all of these challenges by bringing the Human in the Loop. Using sorting criteria to spot anomalies and find similarities, allowing users to improve the ML engine, whilst still turning hours into minutes. All of this with the peace of mind benefit of a Quality Check step. Our Machine Learning solutions are part of our Intelligent Digital Platform offering, enabling users to take years of legacy data and have them analyzed objectively, spotting changes and allowing focused future campaign planning.

10:00
AM

Intermission / Break

A brief (10 minutes) break will be provided before presentations continue.

10:10
AM

APSG Education Foundation Updates

Ellen West Nodwell | Chair, APSG Education Foundation

Members of the Board governing APSG's sister organization - the APSG Education Foundation - will provide attendees updates on this group. This includes the scholarships and award programs it has developed for Texas A&M University students as well as recent recipients of these awards.

10:30
AM

BP Atlantis Ocean Bottom Node and Wolfspar© Survey Remote Monitoring and Remote Operations

Ian Dootson | Hydrographic Surveyor, BP

A presentation on the 2019 Atlantis 4D Ocean Bottom Node and Wolfspar seismic survey. The survey comprised of one node deployment vessel, two source boats and one vessel for towing the Wolfspar device. Wolfspar is a low frequency sound source used for velocity model building which improves imaging beneath salt layers. The presentation will focus on how the installation of dedicated communications allowed for monitoring, navigation oversight and some operational tasks to be performed from onshore.

10:55
AM

APSG Elections + Introduction to New Chairs

Chris Echols | APSG Chair

Our current Chair will introduce members and attendees to nominees for incoming Chairs for various positions, etc.

11:00
AM

Risk Adaption As A Requirement For Surviving and Winning In A Digital World / Lessons Learned From Military Special Operations, Leading Business Teams, and Raising Venture Capital

Joe Wolfel | CEO, Terradepth

When you've historically been very successful, well resourced, and responsible for changing the way humanity goes about its daily business, it's easy to think you've identified and mitigated the risks to continued success. The issue is that some change is so insidious and slow, it's difficult to perceive, much less acknowledge - and, if acknowledged, it's even harder to move resources to do something about it. The relatively slow evolution towards higher machine autonomy and fuller digitization in the offshore sector constitutes one of these insidious risks that stand the potential to topple the most successful entities in the space. The COVID-19 pandemic has accelerated incentives for adaptation to a more digital environment. It's time to play a different game - and to adapt more quickly across the board to survive and win in a vastly different future.

11:25
AM

How The Coming Satellite Constellations Will Affect Offshore Communications

Keith Vickery | President, Zupt

Today and in the last 5 years, offshore service providers have had difficulty in selling the concept of remote services to Oil and Gas Operators as there is a perceived "risk" in the bandwidth capability offshore. In reality, the bandwidth capability is readily available offshore, but the access is restricted by the vessel operators or Oil company for service contractors. The available bandwidth speeds can be increased for remote services at minimal expense to the Oil company or vessel operator in question. However, even with increased and guaranteed bandwidth speed, some tasks such as ROV-to-structure intervention, crane operation, etc. cannot be completely remotely due to the nature of latency in the current satellite communication systems.

Satellite companies such as StarLink (another Elon Musk endeavor) already have permission to launch over 30,000 low earth orbiting (LEO) satellites in the next 10 years as part of their comprehensive satellite constellation program. Not only will the commercialization of satellite communications allow service contractors the ability to purchase their own bandwidth while offshore, but the communication latency involved with LEO satellites will be negligible for many operations (20-30ms). It is still up for determination on whether tasks such as ROV operation will be feasible with this magnitude of latency, but many Oil and Gas companies will have to accept that there are significant benefits to completing certain services without sending additional personnel offshore anymore. Service companies will be able to purchase their own flat panel antenna assembly that contains all the necessary equipment to establish an external bandwidth connection for the service equipment onboard. This communication ability may seem distant, but within the next 2-5 years, individuals will be able to purchase their own flat panel antenna assemblies for <\$2000 and purchase month satellite bandwidth for <\$200/month, dramatically changing the way business is completely offshore.

This presentation will look at the new generation of satellite delivered bandwidth from a service companies perspective and we will share our thoughts and expectations.

11:50 AM Intermission / Break

A brief (10 minutes) break will be provided before presentations continue.

12:00 PM Ensuring Remote Connectivity To Enable The "Rig Of The Future" Today

TJ Gallagher | Business Development Manager, Oceaneering Remote Operations Group

Reliable and resilient connectivity are imperative when conducting drilling operations in remote offshore environments. With unpredictable weather and other unforeseen circumstances, plans can change quickly. Downtime and interruptions in real-time transmissions of critical data can translate into safety issues and even financial losses. Always-up network coverage is an absolute must. Oceaneering's Satellite Agnostic Intelligent Link (SAIL) system combines LTE, Wi-Fi, and Multi-Orbit Satellite Constellations to provide secure communication and networking capabilities. Oceaneering partnered with Oracle to help Pacific Drilling meet its goal of developing the world's most technologically advanced fleet of connected drillships that boost output and lower operational costs.

12:25 PM Enable Geomatics Where It Needs To Be

Kris Berglund | Vice President of Sales, Blue Marble

Geomatics work, by nature, has had field elements in it since it evolved. The surveyor goes out, collects the data, comes back, and hands off to the office crew to do the processing and mapping. This year has made clear that sometimes we need to be ready to go out into the field and not come back to finish the project. We didn't always imagine that the "field" might be our own homes. Positioning workflows depend on reliability and replicability, checks and validations, and access to authoritative information and tools. Mobile and cloud-based workflows have become normal for many types of projects, but positioning work has mainly stayed in the office desktop environment. This talk will explore how we have been navigating these challenges at Blue Marble, enabling our customers to take their positioning and analysis work both mobile and online with new tools and moving forward in a shifting landscape of training and online collaboration.

12:50 PM Closing Remarks + Thanks

Aidan Thirsk | Incoming 2021 APSG Chair

Final remarks and questions.