Agenda : 2017 SPWLA Houston Chapter Software Show

7:30 ……... Open for Exhibitors to set up
8:30 ……... Participant registration begins
9:00-9:15……Opening \ Event Welcome
9:15-10:00 … Exhibition
10:00-11:30…Presentations: Morning Session (10 min each)

P1 Green Imaging Technologies, Mark MacKenzie : *Measuring Gas Isotherms in Shales Using NMR*
P2 Antaeus Technologies, Oswaldo Viloria *: Secure Cloud-based Software Platform for the Energy Industry: A New Collaboration Proposition*
P3 INT, Inc., Paul Schatz : *E&P Visualization in the Cloud: A Critical Component of Your Digital Transformation*
P4 Eriksfiord, Inc , Bernd Ruehlicke : *Borehole image logs to bracket the Stress Tensor - take out the guess work.*
10 min. Break
P5 iTomography, Dr. Michael Frenkel : *ITOMOGRAPHY'S DISRUPTIVE MICROCT 3D IMAGE RECONSTRUCTION WORKFLOW AND SOFTWARE FOR DIGITAL ROCK APPLICATIONS*
P6 Perigon, Chris Hanton : *Data management doesn't have to be daunting*
P7 Harvey Rock Physics, Nicholas Harvey : *LogScope - A Mobile and Agile Solution*

11:30-13:00…Exhibition \ Lunch
13:00-14:30…Presentations: Afternoon Session (10 min each)

P8 CGG GeoSoftware, Fred Jenson : *Machine Learning Using Python via PowerLog Extensions*
P9 Paradigm, Constantine Vavourakis : *Geolog 8 - Building the industry standard field development platform*
P10 Schlumberger, Samira Ahmad : *Petrophysical Evaluation in a Cased Well with Complex Completions: A Case Study Using the Next Generation High Temperature Pulsed Neutron Logging Tool*
P11 Rogii, Inc., Igor Uvarov : *StarSteer Geosteering Software: Extensive data integration for real-time geosteering and geological interpretation.*
10 min Break
P12 WellDrive, Derek Garland : *It's 3am. Where is your data?*
P13 Ingrain, Inc., Jacob Proctor : *Using RhoB and PE values obtained from Digital Rock Analysis for validation of Wireline data*
P14 WellLogData, Ted Kernan : *Well log data made easy*

14:30-16:00…Exhibition
16:00 ……. End of Event \ Closing Remarks
16:10-17:00…Exhibitors to pack

Presentation Abstracts

P1
Measuring Gas Isotherms in Shales Using NMR
Mark MacKenzie, Green Imaging Technologies

The total natural gas content in a shale consists of both absorbed gas in the porous spaces of the shale and adsorbed gas on the surface of the shale matrix. Adsorbed gas can contribute a significant fraction (~50%) of the total gas in place in a shale reservoir. Total gas in place is dependent on pore pressure and temperature, so oil and gas companies have use gas isotherms, which are a measure of total gas content as a function of pore pressure, to assess a reservoir's profitability. Conventional methods of measuring gas isotherms are destructive to the sample, but by using NMR to measure the isotherms, the sample can be preserved and additional information can be provided (pore size distributions).

P2

Secure Cloud-based Software Platform for the Energy Industry: A New Collaboration Proposition

Oswaldo Viloria, Antaeus Technologies

Oil and gas is currently following other industries to cloud technology. There is a new player in the upstream software sector with the goal of setting a standard in order to empower individuals and organizations to become more efficient. Oilfield data has moved from being mostly on paper and/or digital tape media to today's "digital oilfield" and the era of "big data". However, all this data is useless if "insight" is not extracted and value is not added from it.

The cloud-based software platform has three major components: relational, searchable, secure database; web based interface and visualization; and an application engine with access to a wide selection of Apps covering a variety of disciplines.

Collaboration. Everyone. Everywhere.

P3

E&P Visualization in the Cloud: A Critical Component of Your Digital Transformation

Paul Schatz, INT, Inc.

Why Digital transformation? Aging workforces and depressed market prices are forcing the oil and gas industry to rethink how to work, recruit, train, and operate. Companies that want to improve performance find success through faster access to ever-larger datasets and exploration workflows that are more nimble and much more efficient.

Our use case for Big Data Well Log Analysis shows how the newest cloud-based technologies can accelerate the delivery of geoscience, drilling, and production solutions to reduce cost, improve decision-making, and enhance optimization via the digital workplace.

P4

Borehole image logs to bracket the Stress Tensor - take out the guess work.

Bernd Ruehlicke, Eriksfiord, Inc.

A 10 minutes introduction how to create your stress stratigraphy using borehole image logs and dipole sonic tools within hours after having access to the data.

Keywords: Borehole image log, sonic log, geomechanics, stress tensor, Vinland

P5

ITOMOGRAPHY'S DISRUPTIVE MICROCT 3D IMAGE RECONSTRUCTION WORKFLOW AND SOFTWARE FOR DIGITAL ROCK APPLICATIONS

Dr. Michael Frenkel, iTomography

Micro Computed Tomography (microCT) imaging-based digital analysis of cores yields vital information about key rock and fluid properties at pore-scale resolution. In order to perform digital rock (DR) analysis, it is imperative to first obtain accurate microCT images of the rock cores. Common challenges, such as strong artifacts masking part of a core image and long CT scan times, faced by many microCT users limit the reliable usability of DR analysis for making field planning decisions.

Our studies with several microCT manufacturers allowed us to demonstrate that for a given microCT scanner it is possible to reduce or eliminate image artifacts (e.g., cone-beam and beam-hardening), improve image quality and, at the same time, increase by several folds the scanner throughput of rock cores/plugs by utilizing helical or Circle-and-Line (C&L) scan trajectories coupled with our exact 3D image reconstruction algorithms [1-3]. These algorithms have been originally developed for addressing practical medical imaging tasks [4-9].

In order to make these technologies available to users of any microCT scanners in the Petroleum Industry, we have developed a novel workflow for core CT imaging (iTomo®), which allows to increase the value of CT scanning equipment available at oil and services companies. This workflow uses a set of numerically efficient software utilities developed for: selection of optimal CT core scan data acquisition parameters, bad detector pixel detection and correction, data denoising, beam-hardening correction, elimination of misalignment-imposed artifacts, exact 3D CT image reconstruction for helical, C&L, and other X-ray source trajectories, and others.

The benefits that resonated with oilmen are the ability to: (1) effectively use iTomo® software platform to address complex technical unmet needs by adding custom utilities that are not available on the scanners or provide more accurate, artifact-free results than ones used by the scanners; (2) obtain a unique capacity to perform independent in-house quality control of core imaging results, 3D CT image reconstructions, and other raw data processing and imaging operations, all on a stand-alone computer. We expect that the iTomo® platform will help to expand the utilization of microCT as a standard core characterization tool for both routine and advanced DR applications.

We will illustrate the performance of the novel iTomo® software platform using case studies with carbonate and shale core samples scanned by microCT scanners manufactured by Zeiss, Bruker, NSI, and Geotek, and show how our microCT data processing and imaging software tools allow to create disruptive (unavailable today) digital rock capabilities for the Petroleum Industry.

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P6

Data management doesn't have to be daunting

Chris Hanton, Perigon

Data Management of subsurface data is often treated with a certain amount of suspicion. This stigma often arises from either not believing it to be relevant ('we don't have enough data'), the apparent cost to value ratio or previous bad experiences with legacy technology ('the last system was a mess').

However, in the course of using any data at some stage and some level this must be managed. Whether it's keeping data in windows folders (yes, scattered around the desktop still counts) or an enterprise level remotely hosted database, we all manage data.

Regardless of the size and the variation of the data we all come across the same challenges and this presentation will focus on 5 of the key issues identified in the industry regarding data management. More importantly we will also present why this doesn't need to be the case and how data management is something to be embraced amongst the subsurface community.

P7
LogScope - A Mobile and Agile Solution
Nicholas Harvey, Harvey Rock Physics

Oil & Gas companies are frequently required to make quicker and better decision that impact the profitability of diverse and challenging resource plays. As the workforce evolves, individuals tasked with this effort are "general" geoscience and engineering professionals. To support this "generalist" community, software must become more intuitive, nimble and enabling. Concurrently, the energy sector is exploring the feasibility and benefits of horizontal IT solutions that drive down cost but enable innovation. That is, instead of legacy, deskbound, monolithic computational hardware and software, companies are exploring powerful, easy to use "app-style" solutions that can be rapidly developed and frequently released. These "app-like" solutions operate on today's modern devices (e.g., tablets), platforms and exhibit significant cost benefits. In response to this effort, Harvey Rock Physics has developed LogScope, a well log analysis "app" that runs on tablet devices. Developed by an experienced and credentialed petrophysical staff, predesigned workflows streamline once tedious work efforts, such that, robust results are easily obtained. Furthermore, the user interface was developed so that is it intuitive and practical, making it is suitable for the "general" geoscience and engineering communities. Come see the future path of tablet use in the energy sector as we demonstrate the effortless display of map and cross sections on LogScope.

P8
Machine Learning Using Python via PowerLog Extensions
Fred Jenson, CGG GeoSoftware

Machine learning is one of the hot topics in the oil and gas industry these days. We will show how using Python you can apply some basic machine learning techniques to petrophysical data. These techniques are general and can apply to all sorts of well and curve data. In our specific case we will use wells with electrofacies curves from PowerLog to train a variety of algorithms to generate electrofacies curves on a number of wells. We will go into detail on the specifics of how to get the data from the petrophysical application (PowerLog 9.7.1 in this specific case) into the machine learning application and how to write the output curves back to the PowerLog petrophysical database. Comparisons between the hand-picked facies curves and the machine generated curves will be made for a number of algorithms.

P9
Geolog 8 - Building the industry standard field development platform
Constantine Vavourakis, Paradigm

Geolog 8 features leading edge customizability for users. Through custom menus, workflows, modules, and workspaces, an entire deterministic workflow can be completed within minutes. You can shape the software to as you see fit to complete the tasks needed as efficiently as possible.

P10
Petrophysical Evaluation in a Cased Well with Complex Completions: A Case Study Using the Next Generation High Temperature Pulsed Neutron Logging Tool
Samira Ahmad, Schlumberger

P11
StarSteer Geosteering Software: Extensive data integration for real-time geosteering and geological interpretation.
Igor Uvarov, Rogii, Inc.

P12
It's 3am. Where is your data?
Derek Garland, WellDrive

The oil and gas industry has no trouble creating data. Tracking it down and making sure that everyone always has access to the same information is a different story. WellDrive solves this problem with a hybrid approach of using the latest web technology and employing a highly skilled operations staff to chase down the data, reports, and information. Working directly with the operating companies and service companies, the WellDrive team creates a complete, secure, validated, and accessible well file that is accessible anywhere you are.

P13
Using RhoB and PE values obtained from Digital Rock Analysis for validation of Wireline data
Jacob Proctor, Ingrain, Inc.

P14
Well log data made easy
Ted Kernan, WellLogData

Thirty years ago the personal computer revolution transformed interpretation techniques by increasing the amount of computational power workers had at their finger tips. Basic workflows, however, have gotten more complicated rather than simpler as desktop softwares strive to add functionalities and functions. WellLogData, through web technologies, focuses on common workflows for big datasets, saving time in getting the basics done so that insights can be gathered faster.