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Highlights

NEXT IN OIL IT JOURNAL, 2015 ECIM, HAUGESUND

In this issue:

Hadoop in the upstream

Apache trials Hadoop-based geo-analytics. Devon and Noble report on big data initiatives. OSIsoft's Project CAST brings fruit in new PI System Integrator for business intelligence.

Speaking at a Houston chapter meeting of the Esri Petroleum User Group last month, **Apache**'s Bruce Sanderson described the spatial data management window as 'too short.' Apache is trialing a Hadoop deployment to capture GIS and unstructured data from multiple sources. With help from Cloudera, Apache Squoop was used as an ETL* engine to transfer data to the Hadoop file system. The open source Snakebite Python interface to Hadoop feeds real time truck routes and directional drilling data to ArcGIS. A 'geo-analytics' interface embeds Cloudera's Impala analytic database for Hadoop.

Hadoop also featured in presentations made earlier this year at the 2015 OSIsoft User conference in a joint presentation from John Baier (**OSIsoft**) and Don Morrison (**Devon Energy**). Baier cited a high failure rate on business intelligence projects, in part due to complex and slow data export from PI and other systems. To date, the vision of wide data access has proved elusive. Enter the new PI System integrator for business intelligence which feeds real time data directly into business intelligence tools such as Spotfire, Teradata and Tableau, or into the Hadoop file system.

Devon has used a prototype of the integrator to pipe real time data into its tools of choice which include Spotfire, IHS Harmony and Excel. PI is used across the company's assets, from drilling to production. Currently this is done with PI DataLink which works for smaller data sets but does not scale to the multimillion point data sets that Devon receives from its unconventional operations. The Hadoop use case is an attempt to capture and blend real time data from PI and other sources to see how the Hadoop toolset performs.

A follow up presentation from Matt Ziegler (OSIsoft) and Wes Dyk (**Noble Energy**) set out to demonstrate the value of data science in production analysis and optimization. As we reported in our last issue, Hortonworks has been helping Noble aggregate data across Scada, subsurface and other systems.

OSIsoft's big data push began as Project CAST last year which set out to deliver 'data delivered on your terms, in your language, to the tools you use, and to the people that can make a difference.'

The question now arises, where does this put all the business intelligence bells and whistles that OSIsoft itself provides? The latest PI system release addresses this issue with new functionality that allows predictive data to be stored natively and exposed throughout the PI System, 'sharing data from 3rd party analytics and machine learning tools throughout the organization.' More from OSIsoft.

** Extract, transform and load.*

Consulting to-and-fro

Schlumberger closes doors on business consulting unit as personnel join Accenture. New deal with IBM to offer consulting and services around Avocet.

Schlumberger has sold its Business Consulting unit to Accenture. The 250-strong team will integrate Accenture's Strategy arm. The terms of the acquisition were not disclosed. Accenture's Mark Knickrehm said, 'The acquisition will strengthen our ability to provide strategic insights to upstream clients. Our technology-driven business strategies and digital knowledge complement the core consulting strengths of the professionals who are joining us.' More from Accenture.

Schlumberger has also announced a new teaming with IBM to offer 'integrated services to upstream oil and gas customers that will improve production'.

Schlumberger is to contribute production optimization services, upstream expertise and its Avocet production operations platform. IBM brings 'enterprise asset management and services' to the table.

IBM's John Brantley explained that the joint engagement model would integrate enterprise and domain-specific business processes with real-time intelligence. Curiously, there was no mention of Watson! More from IBM.

Planter moins, jardiner plus

Oil IT Journal editor Neil McNaughton returns from an Amazon web services summit with an inspirationally-sloganed T-shirt. Splunk's 'plant less, garden more' entreaty is a message for our times. He ruminates on gardening possibilities in energy saving, data management and IT.

We popped in on an Amazon web services summit recently and, while I would like to be able to bring you some snappy take-aways and suggestions as to how to move your business to the cloud, I confess that the whole thing was quite overwhelming. Beyond geeky in fact. I sat in on one training session and, with lots of hand holding and incomprehensible terse advice, managed to 'provision an instance' of something in the cloud. If I had stayed with it a couple of hours more I may have even managed a 'hello world' app.

My own take-away from the Amazon event was a great T shirt, kindly provided by an outfit called Splunk. The T shirt displays an inspirational slogan, '*Planter moins, jardiner plus*' which being interpreted means 'plant less, garden more.' When I jog forth in my new, fashionably black, T shirt, folks first see a philosophical entreaty. As I pass them, they read 'Splunk' on my back which causes some puzzlement.

In view of the $1.5 trillion of cancelled, sorry, deferred, oil country projects that WoodMac has just estimated, 'Plant less, garden more' is an excellent message for our times. Instead of going down to the garden center and buying new dahlias only to watch them shrivel up in the heat, get stuck into the bindweed.

So where is your 'bindweed?' In this issue of Oil IT Journal we report from the recent Belsim user group (page 11) where several presentations showed how major savings in energy use can be made in process optimization. Already widely used in refineries, the optimizing energy use should benefit offshore oil and gas platforms and especially onshore sites.

For non-conventionals, reducing energy consumption will lower the breakeven limit to production and allow cash-strapped operators to hang in a little bit longer and hope that they can avoid breaching their covenants for a few more months. And *naturellement*, lowering energy use in the production process is also is a step in the right direction for the environment.

On which subject, your organization may have reporting requirements for its carbon footprint in which case you should checkout our 'going green' section (page 5). It would seem that the market for carbon management software is a growth area.

If you are operating a data center, energy should be a concern too. In this context you might like to check out the Open compute project, a worldwide community of engineers whose mission is to 'design and enable the delivery of the most efficient server, storage and data center hardware designs for scalable computing.' The OCP advocates sharing ideas, specifications and other intellectual property as the key to maximizing innovation and reducing operational complexity in the scalable computing space.

If you are working in a large office, energy use might well be a good target for investigation, perhaps applying some of the building information management techniques that are promoted by Fiatech or by evaluating what is grandly termed the internet of things, connected devices to switch electricity consuming appliances on and off. This may involve some 'planting' i.e. purchasing new kit. But if you can use solutions such as Nest, the cost may be easy to justify.

Data management has always been about gardening. The lull in operations that the downturn will bring should provide some breathing space that might enable data managers to find and fix all those data busts. Such was the conclusion of a recent CDA-hosted 'data management in the downturn' workshop, more of which next month.

While this kind of data gardening may be worthwhile, it is difficult to justify in dollar terms, despite many efforts to do so. If HR is on the warpath looking for heads to chop I would not feel terribly comfortable if all I could come up with was business as usual.

How about instead, as I have argued here before, a data *automation* project that brings the promise of *reducing* future data admin and costs. We will be describing one such innovative approach in our next issue with an on the spot report from Norway's ECIM upstream data management conference.

IT is often perceived to be a driver of efficiencies and a destroyer of jobs. This is certainly not the case for the profession of IT itself which seems to multiply and breed applications, service requirements and complexity while achieving, well, let's say less than one might have hoped for. In evidence I call the collected work of Dilbert author Scott Adams.

Feeling no particular need to 'upgrade' from my old Windows XP, I waited until last year when Microsoft switched off its life support before reluctantly, and at considerable expense in terms of downtime and frustration, 'upgraded' to Windows 7. Now, less than a year later, a little button has appeared offering me a 'free upgrade' to Windows 10! An invitation to 'plant more' methinks.

While you are wondering whether to click on the 'obtain Windows 10' button I suggest that you do two things. First read the Wikipedia entry on the philosophy behind the Unix operating system. This emphasizes 'building short, simple, clear, modular and extensible code that can be easily maintained and repurposed by developers other than its creators.' Tools for gardeners if you will. Next try and find anything anywhere on the 'philosophy' behind Microsoft Windows!

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Finally, with regard to the Volkswagen diesel debacle I have a trumpet to blow, my own. I invite you to read or reread my October 2008 editorial on the subject of gas guzzling, CO_2, horsepower and 'green'

@neilmcn

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Oil IT Journal interview—Bettina Bachmann, Shell

Shell's VP Subsurface & Wells Software tells Oil IT Journal how Jewel Suite fits with Shell's software portfolio and the software 'nuggets' that clinched the deal with Baker Hughes.

How does the Jewel Suite deal relate to your GeoSigns proprietary software?

Our GeoSigns tools predominantly have an exploration focus. GeoSigns' seismic interpretation, along with SipMap, our proprietary seismic processing toolset is used in basin and play analysis (BPA). Shell's approach is to seek a 100% working interest in areas where we can leverage these tools to 'see what others can't see' and to get a competitive edge in new ventures. All of this will continue as proprietary in-house development.

But further on in the field development cycle we had become over-reliant on third party tools, Schlumberger's Petrel in particular, which did not totally fit with our approach. So we went out to the market to look for alternatives. We were impressed with Jewel Suite which, although it was an immature tool (for our needs) did include some software 'nuggets.' Our joint venture with Baker Hughes has allowed us bring the technology to a higher level of maturity, particularly the API/plug-in environment that now supports complex upstream workflows. Jewel does not duplicate GeoSigns although there is some overlap.

Will the Jewel 6 edition that was announced at the EAGE benefit from the Shell-specific developments?

The basic public version of Jewel Suite is the one that has been jointly developed by Shell and BHI.

We have tracked Jewel Suite since 2004 and spotted its geomechanical functionality. The ability to swap between orthogonal and trimesh grids was interesting ...

Yes, you spotted on of our 'nuggets.' Jewel Suite makes some nifty connections with structural geology, faults and fractures. Along with its correct physics in modeling it adds a user friendly approach with guided workflows.

A Petrel salesperson might have said that! Why didn't you go with Schlumberger?

We use Petrel a lot and appreciate its strengths. But we did not feel that its fundamental architecture was the right nimble platform that we needed to add our own technology into.

In the early days of Jewel Suite it was presented as a 'componentized' .NET development as opposed to pre-.NET tools. Was this a consideration?

All vendors are constantly rejuvenating their technology. It is hard to say if this is really a differentiator although it is fair to say that Jewel Suite offers more modularity and integration potential than monolithic thick client tools.

GeoSigns was originally a Unix/Linux development. Has it all now migrated to Windows?

GeoSigns has now been completely ported to Windows but it actually runs on both. Linux remains important for our seismic processors and interpreters. But all the BPA applications now run on Windows.

You mentioned earlier Shell's next generation visualization tools. Could you say a bit more about these?

Not really. This is still in the R&D phase. But it covers real time rendering of data and we expect it to have a big impact in seismic interpretation and processing. This is a big investment area for us and we will be presenting the results when we are ready.

Look forward to it.

The Frackers - what was the role of the 'guvmint?'

The US DoE defends its role in unconventional development. Greg Zuckerman begs to differ.

This is not a review of Gregory Zuckerman's excellent 2013 book The Frackers*, 'the outrageous inside story of the new billionaire wildcatters.' If you have not bought it, do so forthwith. It is a great read which certainly plugged many gaps in our understanding of the oil and gas industry over the last several decades.

We report here on an enquiry that stemmed from our reading of The Frackers. That is on the extent to which government-sponsored R&D contributed to the development of shale in the US. Zuckerman makes several references to government backing for early trials of shale-related technologies but attributes the lion's share of the kudos to free enterprise.

To give the 'guvmint' a chance to defend itself we asked the DoE's Namrata Kolachalam for its side of the story. *'During the 1970s and 1980s, the DoE supported research that developed cost-effective horizontal drilling and advanced fracking technologies, proving that the economic development of unconventional gas was possible. In 1975, a public-private joint venture drilled the first Appalachian Basin high-angle Devonian shale directional and in 1986, a DOE-industry joint venture drilled the first air-drilled horizontal shale well. DOE also funded research on the basic science behind fracture mapping and opened the MWX well site for tight sand research in Colorado. From 1978 to1992, DoE put $137 million in the Eastern Gas Shales Research Program which advanced assessment of shale gas resources and led to massive hydraulic fracturing/ stimulation and other analyses. In the 1990s, the DoE joined with the Gas Research Institute to fund further crucial breakthroughs. DoE sponsored research helped expand the knowledge and understanding of shale gas and fostered the development of horizontal drilling and advanced hydraulic fracturing, the techniques that the pioneers in the private sector used to unlocked shale's potential.'*

We also pinged Zuckerman who kindly came back with the following. *'The left tries to underplay the role of the risk takers by saying that the government was key to the development but I didn't find that. It helped to have government support for early advances but the key breakthrough happed in the Barnett by the Mitchell team in the late 1990's. As for horizontal drilling, as I say in the book, government folks developed that original technique and got the patent for it, so I arguably should have done more about them in the book (though the book already clocked in at almost 500 pages, I didn't want to overwhelm readers). Of course, the guys in the fields, not the government people in the labs, implemented those advances. But the government did play a key role there.'*

** Penguin - ISBN 9781591847090.*

Petroweb's Enterprise Database

PPDM-based log and well file management system gets rules engine-based data QC.

The latest (15.1) release of PetroWeb's Enterprise DB, the PPDM-based log and well file data management system includes enhancements focused on data quality, visualization and speed. A new rules engine lets data managers author and run data rules against their data, identifying issues and providing data quality reports.

A new indexing platform provides Google-style search across databases, map services and file shares.

PetroWeb's Navigator GIS-based data discovery application has also been upgraded with workflows for identifying and analyzing data from map and database sources. Reports can be launched directly from the map via pop-ups. A new geo-faceting feature provides 'heat maps' of data by location.

Enterprise DB can also serve as a corporate well data master for the management of large volumes of subsurface data. More from PetroWeb.

Fraunhofer XTreemView - raytracing returns to the CPU

New 3D seismic viewer renders multi-terabyte seismic data sets fast *sans* GPU acceleration.

German R&D organization Fraunhofer has released XtreemView, a 3D seismic viewer which eschews GPU-based acceleration and relies purely on the CPU. The Linux-based software targets post-stack data and is claimed to scale seamlessly as compute nodes are added.

Fraunhofer's Tobias Goetz told Oil IT Journal, 'Ray tracing started on the CPU and only moved to the GPU because no one could do it fast enough on CPUs. Now we can do fast ray tracing on the CPU so we no longer need the GPU. This is a big advantage for folks with compute clusters without GPUs, a common situation due to the high cost of retrofitting a cluster with GPUs. Also we render data in local memory and don't have to move it to and from GPU memory.'

Under the hood is Fraunhofer's GPI 2.0 technology that distributes data across multiple compute nodes. The 3D engine renders across distributed data at frame-rates that allow interaction at full 32-bit amplitude in high resolution. The system was on show at the EAGE in Madrid earlier this year showing volume rendering on multi-terabyte data sets, co-rendering seismic data with attributes such as velocity.

Fraunhofer's Franz-Josef Pfreundt added, 'Our CPU-based approach helps users overcome the limitations and bottlenecks of traditional visualization tools. The visualization kernel, the fruit of ten years of R&D, is used in our spin-out product, Pre-Stack Pro.' The viewer supports SEGY, Seismic Un*x and JavaSeis formats along with the GoCad/Tsurf format for horizons and triangulated surfaces. Data loading is parallelized to speed the time-to-image. The viewer is available as freeware (limited to 2 compute nodes and 40GB of data) or as a full featured corporate edition.

WellAware's monitoring-as-a-service for chemicals management

Automated telemetry based solution replaces operator-based tank and pump data gathering.

San Antonio-based WellAware, provider of oilfield communications and monitoring -as-a-service has announced new solutions for oilfield chemical management and optimization, targeting operators and chemical service providers. WellAware's solution replaces traditional manual monitoring of chemical tanks and pumps with a fully automated, telemetry-based solution. End users monitor and control tanks and other assets from Apple iPhone, Android or Windows endpoints.

WellAware CEO Matt Harrison said, '*Chemicals are one of an operator's main expenses. There is a huge opportunity to increase production and reduce operating costs with optimized chemical management. For example, low injection of paraffin inhibitors or H2S scavengers can increase required well remediation treatments and shut-ins, preventing operators from hitting targets. We provide reliable data collection, exception-based monitoring and control, and actionable analytics from our heterogeneous communications network.*'

WellAware also recently announced that it has received an additional $16 million in funding from Mitsui and Genscape, adding to its $45 million war chest. The monies will be used to expand operations and on oilfield analytics product development. Other investors include Activant, Carlos Slim, Ed Whitacre and Dick Cheney. WellAware was founded in 2013 (OITJ October 2013) More from WellAware.

FEI launches PerGeos pore space explorer

New software productizes digital rock data visualization and analysis.

FEI has launched PerGeos, a new software platform for visualization, analysis and modeling of digital rock data. PerGeos capitalizes on FEI's acquisitions of Visualization sciences group (2013) and Lithicon (2014) and productizes the digital rock techniques that were previously offered as a service.

FEI VP oil and gas Mark Bashforth explained, 'PerGeos works with multi-scale imagery and CT* scans of cores to investigate the microstructures of reservoir rocks. The high-resolution datasets are used to evaluate reservoir quality by identifying lithology, mineralogy, porosity and permeability.'

PerGeos performs statistics and extracts texture to reveal fractures, depositional features and pore fill. Petrophysicists gain insight into the pore space architecture that controls flow behavior. PerGeos workflows provide statistics on absolute permeability and capillary pressure. Along with the software, FEI provides a whole core viewing workspace that includes an auto core assembler for ease of data input. More from FEI[0901].

** Computer tomography.*

Software, hardware short takes

Aegex Technologies, Assai, Aveva, British Geological Survey, B-Scada, Cegal, Divestco, EssencePS, Kalibrate, Neuralog, OVS, Palisade, Troika.

Aegex Technologies has announced an intrinsically safe tablet that runs Windows 10 and will be universally certified for ATEX Zone 1, IECEx Zone1 and UL C1D1 hazardous environments. The 10.1-inch Aegex 10 intrinsically safe tablet runs Microsoft Office along with task-specific applications from Aegex for emergency response, fleet and personnel management and maintenance monitoring.

Assai has added 2D drawing drill down to its flagship AssaiDCMS engineering document management system. By clicking on a document tag, area or component, users can drill down to related documents and drawings.

V2.1 of **Aveva**'s Everthing3D plant design software introduces an enhanced user interface, new laser scanning capabilities for brownfield projects and performance enhancements.

The **British Geological Survey** has announced the beta release of Groundhog Desktop for the creation of maps and cross-sections from geological horizons and borehole logs.

B-Scada has announced the 3.6 release of its Status Enterprise scada management system. The upgrade provides enhanced sensor server usability, better alarm notifications and enhancements to the audit log.

Blueback BluePrint, **Cegal**'s latest plug-in for Petrel, is now available on the Ocean Store. BluePrint embeds and automates reporting geomodel QC and reporting into Petrel.

The **Divestco** Glass seismic interpretation package has been rereleased with new gridding algorithms, an enterprise framework for collaboration and integration with EnerGISite for downloading well data.

EssencePS's EssBuilder has now reached a V 0.3.0 prototype version. The free software includes an 'intelligent' editor of simulation decks and scripts, a 3D model viewer and a custom simulation pre-processing scripting language.

Kalibrate Cloud 2.0 offers a customizable and scalable, cloud-based end-to-end solution for fuel and convenience retail operators. The solution offers faster prescriptive business analytics leveraging Kalibrate's database of over 100,000 retail sites in 445 markets.

Neuralog's 300x printer adapts HP's Page wide technology to fast (14 ips) well log printing. Inputs include TIFF, PDF and vendor-specific formats.

The 4.0 release of **OVS**' eponymous oilfield data management and analytics system adds multithreading for faster query and data processing and in-memory caching of dataset results. A workflow version control system is also new.

The new V7.0 release of **Palisade**'s DecisionTools adds 'BigPicture,' a mind-mapping and data exploration tool, efficient frontier analysis in RiskOptimizer and custom Excel reporting.

Troika's Marlin/Midi seismic tape QC software combo offers 'three clicks to seismic compliance,' reading seismic data and providing compliance metrics and individual shot visualization.

Going, going ... *green*

Technavio on carbon management software. NETL monitors CCS. MIT on future of solar.

A new report from **Technavio** investigates the market for carbon management software. This is set to triple over the period from 2015-2019 as governments seek to reduce greenhouse gas emissions by formulating 'energy-based rules and regulations.' The study compares software from Accenture, Deloitte, IBM, Johnson Controls and SAP.

The DOE's **National energy technology laboratory** (NETL) is researching into CO2 storage technologies focusing on intelligent monitoring systems and well integrity under its carbon storage program. Project partners include Baker Hughes, Chevron, Computer Modeling Group, Schlumberger, Shell and several N American research institutes.

NETL is also funding small and large-scale CCS pilots in its carbon capture program. Here partners include Dresser-Rand, WorleyParsons, Alstom and GE.

Another NETL initiative is investigating the effectiveness of onshore and offshore carbon storage technologies to prepare them for 'widespread commercial deployment in the 2025–2035 time frame.'

MIT has published a free 365 page study, The future of solar energy, motivated by its 'enormous potential to reduce global CO2 emissions and the great importance of effecting those reductions.'

The Logistics Network

Oil patch e-commerce from Qv21, 'any format, any place, any time.'

Austin, TX-based Qv21 has announced 'The logistics network' (TLN), an addition to its cloud-based suite of dispatching and electronic ticketing products. TLN includes a field ticket manager for shippers counterparties and carriers, real time data integration with customer's ERP systems and an order management system that lets shippers submit orders directly to the Qv21 dispatch system.

Qv21 VP Maurice Pinto said 'Our functionality addresses customer's information needs on any system, standards and method across the supply chain. TLN is truly open, not because we adhere to a so-called "open standard," but because we adhere to *any* standard our clients require!'

Qv21's vision is for seamless flow of actionable information across the whole O&G supply chain, from contracts through pricing, order management, shipping and into accounting systems. The system aggregates data along the way with data from multiple, third party systems irrespective of format. More from Qv21 and on the Oilfield services logistics efficiency blog.

2015 EAGE, Madrid

Repsol 'non conventionals don't make sense!' Shell's future vision for data management. Energistics' data myth-busting. Total, 'data is the new oil.' Landmark, 'there are too many apps!' The standards debate. IBM's seismic processing in the cloud. A terabyte RAM 'commonplace.'

We reported from the first plenary session of the 2015 Madrid EAGE in our 'zeitgeist' editorial (Vol 20 N° 5) on the (downbeat) state of the industry. The second plenary investigated 'non technical risk' in the upstream. Mike Daly (ex BP, now with **Macro Advisory Partners**) had no difficulty enumerating the multiple geopolitical risks that confront oil and gas and society in general. 'Touchy-feely' globalization has led to the emergence of 'angry people' and increased turmoil. In the west, oils are confronted with uneducated people who lack trust in government. The huge power of the individual voice has led to the 'weaponization of everything!' For oils, planning a 30 year investment program has become quite a challenge.

Jagoba Cubes San Salvador (**Cepsa**) was more sanguine. In Chinese, risk means danger *and* opportunity. In Arabic, Rizq is a blessing. E&P has always been a risky business with extreme environments, weather, conflict and opposition. Risk can be minimized with a proactive approach tailored to the local situation. Expectations need to be managed through communication. Some risk will inevitably materialize, but its severity can be minimized through portfolio diversification and with an upstream/downstream balance.

Catherine MacGregor (**Schlumberger**) looked into the use of local content (people and services), as viewed through a risk lens. Local content can drive costs up. Partnerships increase risk exposure from reputational damage. But for 35 years, Schlumberger has been developing its global workforce to the extent that Schlumberger is now 'diverse' at all levels of management.

Albert Paardekam (**Shell**) advocates proactive risk management, especially in deepwater projects. Risks need to be identified early on. Some known issues trigger severe cost escalation and poor permitting will cause delay. But true risks are harder to address. Changing regulations need to be anticipated by keeping an ear to the ground and integrating them in the risk management plan. 'Don't treat these as nasty things done by bad people, relish them as a challenge.'

Antonio Merino (**Repsol**) made a valiant attempt to address the risk of oil price volatility. The current situation reflects a move from Opec dominance to non-conventional oil price dynamics. Merino questioned the sustainability of investment in non-conventionals with their high depletion rates. US independents have a ratio of organic capex to operating cash flow at around 400%. Investing here 'does not make sense.' Merino observed that in a world of unlimited liquidity, finance drives production, even with breakeven at $90. If Opec continues to produce at current rates, in a couple of years we will know what breakeven means for shale!

For Marcos Gallego of HSE consultants **ERM**, non-technical risk is the main source of project delays and cost overruns in larger oil and gas projects. Companies lack tools for early detection as portfolio management is focused on technical risk. Climate change adaptation and extreme weather need consideration as witnessed by the recent drive to render carbon 'unburnable' and the statement by EU oils on need for a carbon tax. ERM maps political risks with some interesting results. Australia has moved up in riskiness, from N° 10 to N° 1, because of permitting delays due to intensive social pressures. Canada is N°2 and Denmark N° 3.

The Q&A was a rather stilted affair with questions registered online via SendSteps and filtered by the moderator. Gone are the days of a good old rant from the floor! On the question of cyber-attacks, a massive effort is underway to protect communications. Social tools present a particular risk. 'IT says do this, don't do that, use this.' Getting the message out to affiliates is work in progress. Some give employees phishing drills. Multi stage firewalls and strong passwords help, but 'this is an evolutionary race, there is no infallible system.'

Answering a question on climate change, Paardekam observed that this could not be addressed at the project level but rather at the corporate level. 'We need to debate oil vs. gas vs. carbon capture and create a level playing field. My family says "how can you work for Shell?" They don't understand – try having a hydrocarbon-free day. We have been battered by the bad examples and have shied away from communicating.'

We took a break from the plenaries to trawl the exhibition floor and came across **Ikon Sciences** CEO Martyn Millwood-Hargrave in full flow on the need for better technology to address the challenge of production decline and a forecast 40mm bopd shortfall required to meet demand in 2020. 'We have a huge task ahead of us. Shales have been hit by the oil price collapse. We need to find high value reserves in "good rocks".' Enter the RokDoc/JiFi 'revolution' that offers pre drill geoprediction, real time model update and a 'platform for robust science.' Ikon has got backing from a major for its 'Metastore,' which blends, rock property data, analogs and analysis.

There were no standards or data management sessions at this year's EAGE so it was refreshing to sit in on **Shell**'s booth presentation of its 'future vision' for data management. Shell was joined by representatives from Energistics, Landmark, Schlumberger and Total. Matthias Hartung showed a video of Shell's 2012 cleanup of its Gulf of Mexico Mars data. Now, all major projects involve a data manager. The debate ranged widely over topics that will be familiar to readers of Oil IT Journal. For Hartung, data management is a non-competitive issue. All companies need trusted data, now seen as a corporate asset and as offering attractive career opportunities. There is no difference between data management and geoscience or engineering as regards career possibilities. And there is no room for Shell vs. Exxon or Schlumberger vs. Halliburton standards. Standardization is the 'next innovation' and there is strong demand from industry.

Jay Hollingsworth (**Energistics**) set out to kill a data management 'sacred cow.' Users have never spent 60% of their time looking for data. But when data comes back from the geotechs or third parties, it often doesn't match, causing much work sorting out the mess. The key is better metadata that is automatically created, stored and transferred by the programs that use the data. Enter Energistics' energy subset of ISO 19115 for metadata. Witsml, ETP, Ppdm and ISO 15926 also ran. While there is room to harmonize these, 'it is not like we are starting from scratch.'

Evelyne Tourte described how **Total** has introduced a new 'geo-information' job title alongside its geoscientists. Total and Shell are to sponsor an MSc in oil country data management to be taught at the IFP School with a distance learning parallel track to be given by Heriot Watt University. Tourte observed that along with the standards, industry now has a huge amount of data and need better data science to get more value from data. Tourte also argued for a move from a 'hairball' data architecture towards smoother, data-enabled workflows. 'Data is the new oil.'

Chandra Yeleshwarapu (**Landmark**) said, rather disarmingly for a software vendor, 'there are too many apps.' It is hard to make sense of data that is constantly being changed by apps. It is a big challenge to managing the workflow continuum. 'We throw people and tools at users, the industry goes up and down, resources come and go. That's the real data challenge!'

Stephen Warner (**Schlumberger**) wants to move the focus from end user technology onto more asset team-focused solutions. Information needs to be easily accessible, maybe from hosted content. It is an exciting time in technical data management with more standardization and contextual search.

There ensued a wide ranging discussion where something of a consensus emerged that it was preferable to provide a geoscientist with the IT wherewithal required for data competency rather than vice-versa. Having said that, views on the role of data management and how data services should be provided ranged widely. Yeleshwarapu observed that standards take a long time to prescribe and by then industry has moved on. Standards' evolution needs to keep pace. Hollingsworth reported a 'chicken and egg' problem in that data providers don't want to supply in a standard form and app developers won't support standards that aren't used. However a few companies do actually include standards in their contracts.

Dissecting the 1,000 plus papers for software use cases we came up with the following sampler. **IBM** reports successful use of a high performance computing cloud environment for seismic processing with 'similar or even lower' turnaround times to those achieved on site. **Saudi Aramco** is using Micro-CT core scans along with **FEI**'s digital rock technology to investigate the internal fabric of tight formations. The methodology is mature and moving from R&D to operations. **Repsol** has used **Rockfield Software**'s Elfen geo-mechanical software to make 3D prediction of stress distribution above a deepwater salt diapir.

Emerson/Roxar was not actually exhibiting, opting for an ambush marketing approach from a nearby office location to promote its forthcoming move to a computational cloud. The Linux cluster-based geomodeling and 'big loop' optimization solution is currently being developed in collaboration with Statoil.

Schlumberger was showing off its Oil Sim training program and simulator that targets operators, governments and emerging NOCs. The upstream learning simulator is also used to identify leaders, team players and communicators in your midst, and to see who cracks under pressure.

Finally, **Sharp Reflections'** Bill Shea tells us that a terabyte of RAM is now commonplace in a workstation meaning that a large pre-stack data set can be analyzed in memory. Prestack Pro performs multi-azimuth analysis for unconventional frac analytics.

SMi 2015 Oil and gas cyber security conference, Oslo

NIST/DoE capability maturity model. Oil and gas cyber security information sharing center. Secure-NOK's cybersecurity for drilling handbook. FBI on the Havex virus. Iguana's 'Blue Box.'

SMi's Oil and Gas Cyber Security proved a rich source of information on various initiatives underway to protect oil companies' business and control systems' networks from what is perceived as a growth threat. Donna Dodson from the US **National institute of standards** and technology outlined the 2013 presidential executive order 13636 which sparked off Nist's cross-industry voluntary framework for reducing cyber risks to critical infrastructure. The US Department of energy has been named as the energy sector-specific agency and has worked to adapt the framework to energy sector owners and operators. The DoE has produced a guidance document from the framework which includes a capability maturity model for self-testing.

Michael Lewis outlined **Chevron**'s involvement in the DoE initiative and introduced the Oil and natural gas information sharing and analysis center, created to 'provide shared intelligence on cyber incidents, threats, vulnerabilities, and associated responses present throughout our industry.' Also of note are the API's IT security subcommittee and a similar initiative from the American gas association.

These initiatives were analyzed by Siv Hilde Houmb, a 'white hat' hacker who heads-up Norwegian cyber security specialist **Secure-NOK**. There has been criticism of the 'voluntary' aspect of Nist compliance. Over the next decade it is likely that the framework will become the de facto industry standard. It is expected that increased regulatory powers will make reporting of cyber breaches mandatory for SE-regulated companies, even if no damage is done as this is deemed 'material information.' Moving to the EU, Houmb cited work done by the Netherlands-based WIB whose security requirements for process control leverages the Wurldtech/ Achilles methodology. Secure- NOK has also produced a Cybersecurity drilling guidebook.

James Morrison of the **FBI** ran through the many ways in which hackers hack. Distributed denial of service and phishing being the main hostile acts. One company, Wombat, provides simulated phishing as part of staff (including senior execs) awareness training. Attacks on scada networks are on the rise as witnessed by the 2014 Havex virus which uses remote access Trojans to attack electricity grids and oil pipelines. Unfortunately, according to a study by Frost & Sullivan, 'Cyber security is currently not a spending priority among oil and gas companies.' And attacks on oil and gas companies are underreported.

An alternative solution to process control was presented by **Iguana Security**'s Keith Chappell who is a 'certified ethical hacker.' Iguana's 'Blue box' is a hardened alternative to the conventional router that is built in the UK using 'no far eastern chipsets!' The unit is claimed to move the attack surface away from the process network and onto a trusted device. More from Iguana and from SMi Conferences.

Folks, facts, orgs ...

Petroshare, Euler Hermes, CSB, EnergyIQ, Energistics, Fairwood, Honeywell, IOGP, New Century Software, Tendeka, OFS Portal, PG&E, PIDX, Siemens, Smith Flow Control, Energy Ventures, Magma, Atwell, Dril-Quip, Qinetiq, SEG, CGI, GSE Systems, OVS Group, Energy Navigator, Natural Gas Partners, Geospatial Corp., Integrated Environmental Technologies, Navigator Energy Services, ENGlobal.

Bill Lloyd has joined **PetroShare** from Cirque Resources.

Jay Rose is MD of the newly established **Euler Hermes Energy** credit support and risk management specialists for the energy industry.

Vanessa Sutherland has been appointed chair of the US **Chemical Safety Board**. She hails from the US Pipeline and hazardous materials safety administration.

Scott Schneider and Chris Verret are to lead **EnergyIQ**'s new Exchange division. The unit supplies integration software for E&P master data management.

Jana Schey is now COO of **Energistics**. Devon Energy's Ben Williams is chairman of the board. He is joined by new board members Kevin Ball (ExxonMobil) and Evelyne Tourte (Total).

Kailash Singal has joined **Fairwood LNG**. He hails from Cheniere Energy.

Bruce Calder is the new CTO of **Honeywell Process Solutions**.

John Chaplin (ExxonMobil) is now chair of **IOGP**. Michel Contie (Total) and Simon Durkin (Shell) are vice-chairs. Stephen Jones (Shell) leads the security committee.

VP Mike LaMont heads-up **New Century Software**'s new Integrity Plus unit.

Tendeka has appointed Scott Watters as COO and Annabel Green as CTO.

GE Oil & Gas CIO Bhushan Ivaturi has joined the **OFS Portal** board.

PG&E has named Melissa Lavinson as chief sustainability officer, Bernard Cowens as VP and chief information security officer and Kathleen Kay as VP business technology.

Andrew Mercer (BP) and John Tombari (Schlumberger) have joined the **PIDX** board.

Jürgen Brandes is now CEO of **Siemens**' process industries division. Peter Herweck is leaving the company.

Sander van den Bos has been promoted to international business development manager with **Smith Flow Control**.

José Formigli has joined **Energy Ventures** advisory board.

David Raun has joined the **Magma** board of advisors.

Atwell has hired Teresa Harris as senior project manager and Scott Klipstine as director of oil and gas operations.

Dril-Quip has appointed Steve Newman to its board.

Qinetiq has named Jamie Pollard as CEO of OptaSense succeeding Magnus McEwen-King who is now executive director.

Chevron retiree, Bill Abriel is the **SEG**'s president-elect for 2015-2016.

CGI has appointed Heather Munroe-Blum and Tim Hearn to its Board of Directors.

Kyle Loudermilk is **GSE Systems**' CEO and president. He hails from MicroStrategy. Jim Eberle has left the company.

Sebastiano Barbarino is now **OVS Group** CEO. He succeeds Jose Alvarez who is now chief research officer and chairman of the board.

John Lee has joined **Energy Navigator** as Senior Consulting Engineer.

Patrick McWilliams is MD of **Natural Gas Partners**. He hails from JP Morgan Chase.

Molly Zuccaro has joined **Geospatial Corp**. as executive VP operation and strategy. She was previously with Navteq.

Chad Crady is VP sales and operations for **Integrated Environmental Technologies**' oil and gas division.

Albert Johnson has joined **Navigator Energy Services** as VP business development.

John Offutt has joined **ENGlobal** as general manager, midstream projects and Bob Sammons as general manager automation engineering.

Done deals

Emerson, Yggdrasil, Hannon-Westwood, Novas, Hercules, KPMG, Bank Ewing, Neos, ION, Transzap, ADP, Panduit, Network Vision, Recon Technology, QHDT, Seagull, ExTek, Tieto, Wood Group.

Emerson has acquired Norwegian flow assurance and production optimization software house **Yggdrasil** whose Mette solution will integrate the Roxar reservoir management software portfolio.

Hannon Westwood has acquired upstream project, due diligence and appraisal and valuation specialist **Novas Consulting**. The deal follows Energy Ventures' participation in Hannon Westwood earlier this year.

Hercules Offshore has filed a pre-packaged plan of reorganization under Chapter 11 of the U.S. Bankruptcy Code to continue its financial restructuring.

KPMG Corporate Finance has acquired Bank **Ewing Bemiss**' energy practice along with its 'established and meaningful' presence in energy mergers and acquisitions.

Neos GeoSolutions has acquired **ION**'s Denver land seismic data processing operation in a cash and paper transaction.

Transzap's **Oildex** unit has acquired **Automatic Data Processing**'s procure-to-pay business, adding ADP's OpenInvoice automation solution to Oildex' accounts payable and business-to-business segment.

Panduit has acquired **Network Vision**'s Intravue visualization and diagnostics for industrial Ethernet control networks.

Recon Technology has acquired **Qinghai Huayou Downhole Technologies** in a cas hand paper transaction.

Seagull Oil & Gas has acquired **ExTek AS**, provider of safety training and certification to Norway's oil and gas industry.

Tieto has acquired enterprise content management developer **Software Innovation** for NOK 610 million cash.

Wood Group has acquired **Beta Machinery Analysis**, a Calgary-based specialist in vibration analysis, for $14.3 million.

OSIsoft EAME Midstream 2015, Paris

PI Connectors for big data. PG&E's 90 foot video wall. Chevron Pipeline's ops data console.

Speaking at the OSIsoft EAME Midstream Oil & Gas Industry Forum in Paris earlier this year, Yves Gauthier walked through some of the innovations in the real time data capture and analytics toolset. Of particular interest were the new PI Connectors that automate the configuration of new classes of equipment, rationalizing PI Server's 500 interfaces into 20 'connectors.' The move to the cloud is now a reality and cloud connect allows sharing of data with partners and authorized contractors. PI Integrator now offers 'big data' connectivity, pushing data to analytical engine from Spotfire, Cognos, SAS and SAP or into roll-your-own Hadoop-based systems. PI to ESRI ArcGIS was also a highlight.

OSIsoft's Michael Graves described how flagship client **Pacific Gas & Electric** is working to make sure nothing like the San Bruno pipeline catastrophe (OITJ December 2014) happens again. According to PG&E this was caused by a 'failure to understand what was happening in the data and in the system.' PG&E had to change and now has an OSIsoft-based solution that provides access to data across the pipeline network from an impressive, 90 foot video wall. The software provides predictive capabilities and operational intelligence leveraging again the ESRI to PI link. Graves also walked through **Chevron Pipeline**'s 'operational data console' which uses PI Asset Framework across operations and the business, blending SharePoint components from OSIsoft and Microsoft.

Emmanuel Freitag showed how GDFSuez' unit **Storengy** has rationalized data flows across its underground natural gas storage network. Storengy stores natural gas in aquifers and salt cavities across France. PI Asset Framework organizes data from 20,000 scada tags and 13 storage sites. An in-house developed model, 'Ultim' links PI with Matlab to optimize system performance. More from OSIsoft.

API/NIST roll out pipeline safety standard

New recommended practice for pipeline safety management systems.

The American Petroleum Institute has announced a new standard for pipeline safety management. The API Recommended Practice 1173 is now the American National Standard (ANS) for pipeline safety management systems (PSMS). The RP provides a risk management framework for continuous improvement of pipeline integrity. The PSMS builds on an operator's existing pipeline safety system, including the operator's pipeline safety processes and procedures. This RP defines the elements needed to identify and address safety for a pipeline's life cycle.

The standard advocates a 'plan, do, check, and act' philosophy along with periodic reviews and corrective actions. Developed with help from National Transportation Safety Board (NTSB), the Pipeline and Hazardous Materials Safety Administration (PHMSA) and other stakeholders, API 1173 comes as a 27 page document and costs $85 from the API.

Netwrix Auditor for Mansfield Oil IT revamp

IT auditing software removes IT 'blind zones,' raises productivity and security

Mansfield Oil, a US downstream oil distributor, has deployed Netwrix' IT auditing software to improve cyber security and IT productivity. Netwrix Auditor performs continuous auditing of Active Directory, SQL, SharePoint, Exchange, VMware and file servers. Auditor provides actionable information, protects systems and data through timely detection of malicious activity. The deployment is a component of a complete transformation of Mansfield's IT.

Mansfield's Hercu Rabsatt said, 'Now we are able to see what is changing and how across all our IT systems. Netwrix Auditor has removed the blind zones. We now have a complete audit trail about who has access to what, when and where. This helps define areas over which we need to keep a closer watch.'

Netwrix CEO Alex Vovk added, 'Visibility and granular control of all levels of business-critical IT systems help companies protect their digital infrastructure. A comprehensive security strategy boosts defense against cyber threats.' More from Netwrix.

NERC rolls out SciDB 'smart science' gateway

Paradigm4 open source online testbed for terabyte datasets.

The US Department of Energy's National energy research scientific computing center has announced a 'smart science gateway,' an online testbed for developers working with complex queries on terabyte data sets. The gateway is a front end for a hosted edition of Paradigm4's SciDB, an open source database for large scale array-structured data. SciDB has applications in time-series sensor data, satellite imagery and as a store for big data 'graph-like' structures. SciDB leverages parallel architectures for fast analysis of terabyte arrays of scientific data.

The database scales across hundreds of nodes and can be deployed on commodity hardware or on supercomputers. NERSC claims SciDB's main virtue is that it enables the use of HPC hardware without the need to learn parallel programming and I/O. More from NERSC.

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Sales, deployments, partnerships …

Applus+, Aptomar, Exova, Alliant RigServ, IFS, Intergraph, eVision, Kalibrate, LR Senergy, Peak Group, McDermott, OpenLink, Petrofac, Ikon Science, PetroTrace, Schneider Electric, Secure-NOK, Portal Architects, TCG Consulting, Tendeka, Eternal Asia SCM, Zycus.

Applus+ has been awarded a trio of inspection engineering, asset integrity management and advanced non destructive testing contracts worth AU$22.5 million for work on the Ichthys LNG Project.

Aptomar has delivered its 'Clean to operate' services to Tullow Oil Norge AS on the Zumba field and to DEA Norge's drilling campaign on the Titan field.

Exova is to provide materials qualification testing for Maersk Oil, an extension of a 2014 contract on the Culzean development.

Alliant RigServ is to provide implementation and deployment of **IFS Solutions**' ERP system to the North American offshore oil and gas industry.

Korean Pields Engineering is to use **Intergraph** Smart 3D to design a floating production, storage and offloading vessel for Petrobras.

Intergraph and operational safety specialist **eVision Industry Software** have signed a strategic alliance to provide a framework for companies to integrate their solutions.

Compañía de Petróleos de Chile is to deploy **Kalibrate**'s location intelligence solution across 500 retail outlets in Chile.

LR Senergy and **Peak Group** are to offer 'optimization options' from reservoir, through well and facilities to the point of export; leveraging Wellscope, LR Senergy's computational fluid dynamics inflow modeler and flow assurance skills.

MOL Energy UK has adopted a collaborative business model and has signed a partnership contract with five companies: **AGR Tracs** for subsurface, Petrofac unit **SPD** for wells, **Wood Group** for facilities, **Subsea 7** for subsea and **Proserv** for hardware.

OpenLink's RightAngle Energy Trading and Risk Management Solution has been selected by United Petroleum to support its network of over 300 stations throughout Australia and to establish a new Singaporean oil trading operation.

Kuwait Oil Company (KOC) has awarded **Petrofac** a $780 million contract for engineering, procurement and construction of the manifold group trunkline project in the north of Kuwait.

Ikon Science and **PetroTrace Global** have expanded their collaboration by deploying the seismic data processing workflows using a new high performance computing cluster in Ikon Science's UK office.

Shell has signed a global agreement with **Schneider Electric Software** to use its SimSci Spiral Suite for planning and scheduling.

Secure-NOK has been awarded a 3-year contract with an estimated value of $5m by National Oilwell Varco to introduce 'SNOK,' its cybersecurity-monitoring product into NOV's proprietary drilling control systems.

Landmark Field Services has deployed **Portal Architects**' SkySync to 'tether' its cloud storage platforms.

Tendeka has signed a two-year agreement with **Eternal Asia Supply Chain Management** for the exclusive supply of its FloSure autonomous inflow control devices in China.

Forum Energy Technologies has selected **Zycus**' Strategic sourcing suite including e-sourcing, supplier management, spend analysis and contract management.

TCG Consulting has signed an agreement with KBR to deliver outsourced program management travel solutions.

Saudi Aramco and **McDermott** have signed their second Long Term Agreement (LTA) for future brownfield engineering, production, construction and installation in Offshore Saudi Arabia.

Standards stuff

OPC open sources UA. Energistics rolls out ETP transfer protocol. Energistics/PPDM national repository metadata push. EarthServer 'big earth data at your fingertips.' OGC CDB.

The **OPC Foundation** is to make its OPC unified architecture (OPC UA) specifications and technology available as 'open shared source' on github. A release of the complete infrastructure for .NET (sic) is scheduled *real soon now*.

Energistics has released the Energistics Transfer Protocol for real time inter-application data exchange using the EnergyML family of data standards, includes Witsml, Prodml and Resqml. Energistics' raster well log depth registration data objects for Witsml 1.4.1.1 have been released. They were developed under the auspices of the Standards leadership council in a joint Energistics – PPDM initiative. The Energistics-sponsored **National data repositories** special interest group is planning a new initiative to standardize metadata, in particular well header data. Contact Energistics for more.

The EU-backed **EarthServer** group initiative has announced 'big earth data at your fingertips,' a.k.a. 'agile analytics on petabyte data cubes as a commodity.' EarthServer uses Rasdaman's raster data manager to enable researchers to browse, access and analyze massive multi-dimensional data sets from a wide range of sources. The system replaces isolated data silos with a single, uniform information space, eliminating the 'artificial differentiation between data and metadata.' Phase 2 of EarthServer has started up with the goal of petabyte-scale data cubes and the addition of the NASA World Wind viewer.

The **Open Geospatial Consortium**'s membership has ratified the OGC Common Data Base (CDB) specification as an OGC Best Practice. The CDB is an open format and encoding standard for the storage, access and modification of a representation of the natural and built environment for simulation applications. CDB defines the data representations required for a 'worldwide synthetic representation' of the earth along with the conventions required to support the subsystems of a 'full-mission simulator.' The CDB is tailored for real-time applications and provides support for inter-connected simulators that share a common view of the simulated environment.

Belsim 2015 User Group, Brussels

Vali update. Belsim/Prosim at Total Le Havre. Energy savings at Aramco's Haradh gas plant.

Brussels-Belgium based Belsim provides software and implementation services that focus on quality data acquisition in the process industry. Belsim's flagship, Vali performs full physics, model-based real time data validation and reconciliation. The tool delivers a single set of coherent measurements by solving mass and energy balances. Vali is also used to estimate unmeasured variables, acting as a 'soft sensor' or virtual meter. In the upstream, Vali is used by Hess to reconcile wellhead data prior to analysis in Spotfire. Belsim announced that Vali's configuration engine, ValiStudio, is now available as a cloud-based, hosted application. New functionality in Vali 5 reflects a move from reconciliation to process optimization, abnormal event detection and root cause analysis.

Belsim's Frederic Lecoq summarized collaborative work between Total, Belsim and ProSim on optimization of energy use at **Total**'s Le Havre refinery complex. This involved the development of a link between Vali and ProSim's Ariane plant management environment. Total's 'ValiAri' solution combines Vali's data reconciliation with ProSim's optimizers and has led to significantly reduced energy bills. Boilers and turbo machinery use, steam generation and output temperature can be accurately measured and the whole optimized to minimize operating costs. Pinpointing and fixing excessive steam venting has saved Total over a million Euros per year and has identified several future energy saving projects. Similar results were reported by Suryaprakash Digavalli on deployment at **Saudi Aramco**'s Haradh gas plant where a detailed energy assessment has led to recommendations to the operator for waste heat recovery, oil circulation optimization and improvements to the propane cycle. More from Belsim and in our earlier report (OITJ July 2013).

AIS internet of things meets the digital oilfield

American Industrial Systems hardware supports IT/OT convergence.

A white paper from American Industrial Systems investigates IT and operations technology convergence as the internet of things meets the digital oilfield. AIS manufactures ruggedized, open architecture computers and touch panel systems. AIS argues that the need for greater safety along with a shrinking oil and gas workforce is driving take-up of smart human-machine interface (HMI) systems. AIS's HMIs track pressure, flow, temperature and operating data. The kit is certified compliant with the Department of transportation's pipeline and hazardous materials safety administration regulations and ATEX Zone 2. AIS' latest offering includes Industrial box PCs, DIN rail and thin client industrial PCs. A new 'internet of things' gateway provides flexible input/output interfaces to process control and scada networks. AIS' client workstations are equipped with 'ThinManager, a smart process controller used by Chevron. More from AIS.

IBM Watson + Arria NLG = Polus

Natural language specialist teams with IBM to leverage artificial intelligence in refineries.

Natural language generation specialist Arria[2500] (OITJ June 2014) has announced Polus, a joint venture with IBM that applies the latter's Watson artificial intelligence engine to leak detection and repair in chemical plants and oil refineries. Polus uses NLG to provide operators with a textual summary of a plant's current fugitive emissions. Watson's Jeopardy-winning question-answering faculty has been interfaced to the large amount of legislative documentation that governs fugitive emissions (an area where non-compliance can mean fines). Watson then generates plain English reports that answer the operator's query, possibly asking for more input from the operator. The system also generates reports automatically from monitoring data.

Arria showed off Polus at the recent IBM 'World of Watson' event in New York. Other uses of Watson include Perficient's Incident-Insight and EnGeo's GoFetch-Codes. IBM is reported as planning a $1 billion investment in its Watson line of business.

Aconex' engineering document management for Japex

Cloud based system underpins Soma LNG import terminal construction workflow.

Japan Petroleum Exploration Co. Ltd. (Japex) is to deploy Aconex' cloud-based engineering document and project management platform during construction of its $500 million Soma LNG import terminal located in Fukushima prefecture, Japan. Aconex centralizes project information and processes on a single, neutral platform in the cloud. Stakeholders all work from current versions of documents. Document workflow and communications between project team members across organizations are visible in real time, reducing errors and rework. The software provides document control and an audit trail of decisions and actions.

Japex' Wataru Maeda said, 'We've noticed a big boost in efficiency and lower costs. Document searches are fast and easy and we can see when all are on track with their part of the project.' Localization of the software and documents to Japanese was key to Japex' adoption. The tool was up and running in one month with minimal training as most all stakeholders were already familiar with Aconex. More from Aconex.

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BP's production data infrastructure from bespoke to COTS

GE Predix connects BP worldwide wells to the 'industrial internet.' Predix 'now in the cloud.'

In a new production optimization effort, BP is to deploy GE's Predix data infrastructure to connect its wells to what GE likes to describe as the 'industrial internet.' Initially, some 650 wells will be connected with a forecast expansion to 4,000 wells across the world over the next several years. Predix is the core industrial data platform for all of GE's industries, on top of which, 'Predictivity' solutions are built for applications such as alarms and notifications, electrical submerged pump monitoring and more.

BP's Peter Griffiths said, 'This technology will improve efficiency and reduce the complexity of our operations, making them safer and more reliable. The standard platform supports BP's move away from bespoke software to off-the-shelf industry solutions. These integrate with our work processes but come without the long-term support costs of a bespoke approach.'

In a separate announcement, GE reports that Predix is now available as a cloud-based hosted option. It's not clear whether BP's data is hosted by GE (we did ask). Another issue for cloud-deployed analytics is the degree to which companies will share their data in the cloud. GE claims that Predix is in operation on some 14,000 ESP wells world-wide (OITJ Feb 2014). More from GE.

Battelle enters oil big data fray

EluciData analytical engine applies machine learning to 'separate good wells from poor performers.'

US R&D establishment Battelle has customized its 'EluciData' analytical engine for use in the oil and gas vertical. EluciData's analytical and machine learning methods were originally developed for data-heavy applications such as national security and healthcare. The development combines geoscience with advanced statistics to develop predictive models for optimizing well design. One approach is to identify statistically the factors that separate good wells from poor performers and to relate production rates to geologic formations.

The big data toolset includes data mining, clustering, machine learning and experimental design. Inputs can be structured and unstructured data. Battelle has also adapted its computer solutions for oil and gas equipment monitoring applications, replacing manual inspections with a drill site camera. Natural language processing is also in the mix.

Under the hood there is a Hadoop/NoSQL data environment with extensions for business intelligence tools such as Spotfire. Battelle is also offering training and consulting in data science to oil and gas clients. If you want to learn more about decision trees, random forests, Bayesian and Markov chain models then talk to Battelle.

Fiatech, IBM team on 'cognitive companions'

'Thought leaders' workshop to investigate Watson's use in capital facilities/construction.

IBM Watson, Black & Veatch and Fiatech are to hold a workshop for 'thought leaders' in capital facilities and construction on the potential applications of cognitive computing. The workshop sets out to identify problems and prioritize how these should be addressed.

IBM envisages a use case for 'cognitive companions' in construction and operations, analogous to a Watson-based app that its IBM Research India unit has developed to accompany visitors to art galleries and museum. The Android app, 'Usher,' supplies information about nearby artwork in a museum and answers visitor's questions. The app analyzes accelerometer data from the phone to tell if the user is walking or standing still, and to figure out where they are looking. The app can then tell the visitor 'On your left is van Gogh's Sunflowers.'

In an offshore context the technology could be used to guide workers around a facility, monitor worker health and provide access to offline resources and Watson's intelligence. A paper on Usher was presented at the 20th International Conference on Intelligent User Interfaces in New York earlier this year.

Schneider Electric Software to buy Aveva

Cash and paper transaction sees ex-Invensys unit combine with Aveva.

Having shelled out some $5.2 billion to acquire Invensys last year, France's Schneider Electric is now to acquire UK-based Aveva in a cash and paper deal. Schneider is to contribute a selection of its industrial software assets to Aveva along with a £550 million cash payment. In return, Schneider will receive new Aveva shares, giving it a 53.5% stake in the new Aveva Group. Aveva shares popped 30% on the announcement but failed to register on Schneider's €32bn market capitalization.

The partners plan to 'create a global leader in industrial software,' with asset management solutions that span design and build through to operations. Synergies are expected from cost cutting and leveraging 'complementary' market exposures, customer bases and product portfolios.

In a recorded webcast meeting with analysts Aveva management added little to the official release before allowing lots of time for questions. Some were answered, others not! The analysts seemed puzzled. Our theory is that the deal was driven by a desire to lose the steampunk 'electric software' name that Schneider gave its Invensys purchase. More from Aveva.