Musing: Oil & Gas Drones

Published: November 2016
<table>
<thead>
<tr>
<th>Company</th>
<th>Details</th>
</tr>
</thead>
</table>
| Anadarko Petroleum Corporation | • Anadarko participated in Commercial UAV (Unmanned Arial Vehicle) EXPO 2016 in October at Las Vegas  
  • [Conference link](#) |
| Apache Corporation | • Apache Corp. has used drone in the United Kingdom to monitor flare stacks at a gas plant  
  • [Web Link](#) |
| Baker Hughes     | • Baker Hughes deepwater pipeline solutions offer subsea flooding and testing using remote flooding module (RFM) and subsea hydrotect pump (SHP). Baker Hughes use ROV-powered boost pump to complete the operation in RFM  
  • [Web Link](#) |
| BP               | • Keeping road grader vehicles or drill rigs on course in a harsh Alaskan winter can be a slow, difficult business. So, too, can inspecting a flare stack on a refinery cooling tower. But, the growing use of unmanned aerial vehicles (UAVs) is helping organisations such as BP to change the way in which these necessary tasks are managed.  
  • [Web Link](#) |
Bristow Group Inc

- Bristow has invested $4.2 million in Sky-Futures, the leading provider of drone inspection data services for the oil and gas industry. This investment gives Bristow immediate entry to the fast-growing UAV services business and bolsters Bristow's offerings to include drone inspection services.
  - [Conference link]

Chevron Corp

- Chevron is currently using AI to identify new well locations and stimulation candidates in California. By using AI software to analyze the company's large collection of historical well performance data, the company is drilling in better locations and has seen production rise 30% over conventional methods.
  - [Web Link]
- Chevron Upstream Europe (CUE) already used small UAVs to visually inspect flare tips on the Captain and Alba platforms in the U.K. North Sea. This has reduced the requirement for the installation of scaffolding and manual inspection of the tips, hundreds of feet above the water, thereby mitigating potential risk to employees and contractors.
  - [Web Link]
- In a new video by energy giant Chevron its staff discuss some of the benefits they are seeing from the company’s ongoing drone (UAS) tests in California.
  - [Video Link]
ConocoPhillips

• ConocoPhillips Alaska has announced that in mid-September, using the Insitu Inc. ScanEagle® Unmanned Aerial Vehicle (UAV), the company completed the first approved commercial use of an Unmanned Airborne System (UAS) in the United States.
  • Web Link

• Norwegian-based specialist subsea service company DOF Subsea Norway has secured a contract with ConocoPhillips under the current frame agreement for Diverless Marine and Subsea Services.
  • Web Link

Era Group Inc

• Era Group Inc announced the launch of its Unmanned Aerial Solutions (UAS) service offering and an exclusive agreement with Total Safety.
  • Web Link

Exxon Mobil Corp

• Exxon this year successfully used drones along the Pacific coast off Santa Barbara, Calif., as part of an ongoing whale research project.
  • Web Link

• In 2015 ExxonMobil we piloted the use of unmanned aerial systems (UAS) to improve environmental performance. Its about how their engineers and scientists used UAS to evaluate tundra vegetation and water bodies near our Point Thomson project in Alaska.
  • Video Link

• Exxon mobil is participating is commercial UAV EXO 2016
  • Conference Link
ConocoPhillips Alaska has announced that in mid-September, using the Insitu Inc. ScanEagle® Unmanned Aerial Vehicle (UAV), the company completed the first approved commercial use of an Unmanned Airborne System (UAS) in the United States.

- Web Link

Norwegian-based specialist subsea service company DOF Subsea Norway has secured a contract with ConocoPhillips under the current frame agreement for Diverless Marine and Subsea Services.

- Web Link

The SUBSEA SPIDR® system provides the functionality of Halliburton's SPIDR® system in a package suitable for temporary installation on a subsea tree by a standard ROV submersible or diver.

- Web Link

**Helix Energy Solutions Group Inc**

- **T-1200 Seabed Trencher**: The T-1200 jet-trenching ROV operates in water depths to 3,000 m, cutting trenches up to 3-m deep in soil strengths up to 100 kPa

- **Rovdrill**: The ROVDrill Mk.2 system is a fully automated seabed drilling module capable of carrying out a range of drilling, sampling and in situ tests

- **Schilling UHD**: Schilling Ultra Heavy Duty UHDTM Work Class ROV System delivers performance and power for the most challenging marine contracting applications.

  - Web Link (Page 10)
Oceaneering Intl Inc

- Oceaneering participated at Drone World Expo at San Jose Convention Center
  - Web Link
- Oceaneering is the world's largest Work Class ROV (Remotely Operated Vehicle) operator and the leading provider of ROVs to the oil and gas industry.
  - NEXXUS ROV, eNovus ROV, Millennium Plus ROV, Magnum Plus ROV, Maxximum ROV, Spectrum ROV, Omni Maxx ROV, Sea Maxx Satellite ROV
  - Web Link
- The FAA has certified and authorized about 5,500 operators to fly drones for business purposes. Oceaneering International, Inc. was approved for to operate drones for hire on 6/6/2016.
  - Web Link
- Remote Aerial Vehicles (RAV) capabilities
  - Video Link
- Oceaneering to Provide ROV and Subsea Tooling under Master Service Agreement with Heerema Marine Contractors
  - Web Link

Oil States International Inc.

- Oil States use remotely operated vehicle (ROV) for its Deepwater Pipeline Repair System (DPRS)
  - Web Link
Royal Dutch Shell

- Royal Dutch Shell has used Wave Gliders to collect data from submerged sensors via acoustic modem.
  - [Web Link]
- Shell is increasingly using ROAVs to inspect the condition of its oil and gas facilities in hard to reach places, like a tall tower or the underbelly of an offshore oil rig, because it’s safer and more efficient than sending people.
  - [Web Link]
- Sensabot, the first resident mobile robot certified to work in difficult and hostile environments, has been launched by Shell.
  - [Web Link]
- Royal Dutch Shell began using remotely operated aerial vehicles to examine its large energy plants in Europe. The company says it is increasingly using this technology to inspect the condition of its oil and gas facilities in hard-to-reach places, such as a “tall tower or the underbelly of an offshore rig because it’s safer and more efficient than sending people.
  - [Web Link]

Schlumberger

- Schlumberger also used the software’s multi-drone function to manage flying two UAVs at the same time.
  - [Web Link](Page 35)
- **Article:** AERIAL VEHICLE ACQUISITION OF SEISMIC DATA
  - [Web Link]
<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statoil</td>
<td>Oil majors including Statoil, Shell and Chevron are experimenting with various technologies, from drones and drill design to data management, to drive down costs and weather a deep downturn.</td>
</tr>
<tr>
<td></td>
<td>• <a href="#">Web Link</a></td>
</tr>
<tr>
<td>Superior Energy Services</td>
<td>CATS — Complete Automated Technology System — is leading the industry into automated well completion services with a focus on meeting today's completion challenges of long lateral applications.</td>
</tr>
<tr>
<td></td>
<td>• <a href="#">Web Link</a></td>
</tr>
<tr>
<td>Tide Water</td>
<td>In 2013, Tidewater Subsea is formed and takes delivery of six work-class remotely operated vehicles (ROV) for expansion into the growing subsea marketplace.</td>
</tr>
<tr>
<td></td>
<td>• <a href="#">Web Link</a></td>
</tr>
<tr>
<td>Total SA</td>
<td>At Biscarosse (Landes), Total made a demonstration of its new drone developed as part of an internal innovation contest the group. His name: Helper for Environment and Human Life Protection Emergency Response.</td>
</tr>
<tr>
<td></td>
<td>• <a href="#">Web Link</a></td>
</tr>
</tbody>
</table>