OSIsoft IIOT summitt
Advanced Analytics, and Big Data Summit
JW Marriott – Galleria

«Delivering Business Value with IIOT and Advanced Analytics with MAX™»

Hege Kverneland, Corporate VP & CTO

Houston, 12th of October 2016
We are a global family.

We are thousands of individuals, working as one team to create lasting impact for our customers, ourselves and the communities where we live and work. We take responsibility for each other and our company’s future, knowing that personal ownership leads to broader success.
We believe in purposeful innovation

We see where our customers’ needs are not being met and we act. Through business innovation, product creation and service delivery, we are driven to power the industry that powers the world better.
We believe in service above all

We are the backbone of the oil and gas industry with a singular focus to deliver the finest products and services, on time and on budget, to push our customers’ business forward.
What do we do?
Closed loop control system...
What do we do?
4th Industrial Revolution

1st: Mechanization, water power, steam power
2nd: Mass production, assembly line, electricity
3rd: Computer and automation
4th: Cyber Physical Systems

Source: www.allaboutlean.com, Christoph Roser
Internet of Things (IoT)

Source: graphic from The Connectivist, data from CISCO
Our software capabilities...

asset performance management

- RigSentry
- Drillshark
- prognostic model
- operational optimization
- data visualization
- predictive maintenance
- aftermarket services
- product development
- product improvement
- condition monitoring
- prognostic model
- analytics
- Softspeed
- product development
- after market services
- prognostic model
- NOVOS
- real-time monitoring
- data visualization
- predictive maintenance
- operational optimization
- condition monitoring
- NOVOS
- Softspeed
- predictive maintenance
- product improvement
- data visualization
Blow Out Preventer (BOP)
Subsea BOP – Retrivable Pods
Cost of rig ownership

DAY RATE IN 2013

$600K

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Annual Offshore Rig Maintenance Cost

$15M

DAY RATE IN 2016

$280K
Asset performance management
BOP regulator valve
Traditional v. condition-based maintenance

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<th>Traditional preventative maintenance</th>
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<td>Condition-based maintenance</td>
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<td>BOP predictive</td>
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- **In-use**
- **Replaced**
- **Flagged as high risk**
Condition-based maintenance: The bathtub curve

Hypothetical failure rate versus time

- Infant mortality
- Decreasing failure rate
- Normal life (useful life)
  Low “constant” failure rate
- End of life wear-out
  Increasing failure rate

Cycles

Increased failure rate
Our first breakthrough
RigSentry for BOP
Coming soon, RigSentry for…
RigSentry™