

## **Digitalization and Information and Communication Technology Security (Cyber Security)**

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The petroleum industry is becoming increasingly dependent on digital systems, and the companies have ambitious plans for increased use of digital technology – along the entire value chain. Industry specific initiatives show that digital technology will be instrumental in optimizing production and efficiency as well as having an effect on health, safety and the environment<sup>1</sup>.

In the petroleum industry, digitalisation involves the introduction of digital technology, such as computer engineering methods and tools, to replace, streamline or automate manual and physical tasks. This involves increased use of integrated operations, remote operations, automatization, robot technology, artificial intelligence (AI) and access to computer resources in order to analyse large volumes of data. Furthermore, digitalisation initiatives in the industry will bring about a radical change in the way the companies work, both within the individual companies' own operations and organisation, but also the implementation of new forms of collaboration and business models.

On one hand, this development is capable of producing more efficient work processes, replacing manual labour, yielding better analyses and improved decision-making. This may have clear benefits for health, safety and the environment (HSE) and increased efficiency for companies in the industry. On the other side, there is also a need for the industry leaders to understand how this development may also introduce new risks and challenges. For example, with increased use of standard IT equipment and solutions in the industrial automation segment, cyber security becomes a relevant challenge within the industrial Information and Communication Technology (ICT) domain.

The digitalisation process and development programs are going forward at high speed in the industry. During 2018, the PSA will carry out several projects within the area of digitalisation and ICT security. This will include risk-based audits of the company's own follow-up of the implementation of digital solutions and ICT security within areas such as Drilling and Well Interventions. Digitalisation and ICT security is a prioritized area in various R&D activities in the Norwegian petroleum industry.

Going forward, the industry needs to actively monitor changes related to HSE risk resulting from digitalisation. This includes a strong focus on ICT security, ensure employees and leaders have the necessary digital skills and competence as well as involving employee representatives in digitalisation initiatives. This is important in order to succeed with the ongoing changes and, not least to ensure safe and reliable operations.

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<sup>1</sup>**Konkraft report(2018)**. Konkurranssekraft – norsk sokkel i endring. [http://konkraft.no/wp-content/uploads/2018/02/Konkurranssekraft-fullstendig\\_rapport\\_web\\_ny-06.03.18.pdf](http://konkraft.no/wp-content/uploads/2018/02/Konkurranssekraft-fullstendig_rapport_web_ny-06.03.18.pdf)

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