

## InnoSHM - Innovative Structural Health Monitoring and Risk-informed Structural Integrity Management

### Novel technologies supporting the sustainable change

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The background for the project is the ongoing huge investments made in the Danish North Sea to ensure continued oil & gas production which is needed by the society to enable the global transition towards renewable energies. The project secures that production in a transition period can be performed more efficient, resilient and sustainable by for example reducing the consumption of the world's natural resources by re-use of already existing infrastructure and at the same time maintaining the safety for humans and the environment.

The value of the project is secured by further R&D of novel technologies within digital twins, machine learning and big data analytics for combining structural health monitoring (SHM) and data-driven decision-making, enabling detection of damage caused by for example extreme events, delivering information for critical decision making, and defining measures for control and mitigation, all in a risk-informed structural reliability framework.

The technology and knowledge acquired during the project are multi-purpose methods for structural integrity management and can be applied for all types of both new and existing structures such as for wind turbines, bridges, high-rise buildings, towers, etc. and as such, supports an even broader range for securing a sustainable and greener future.

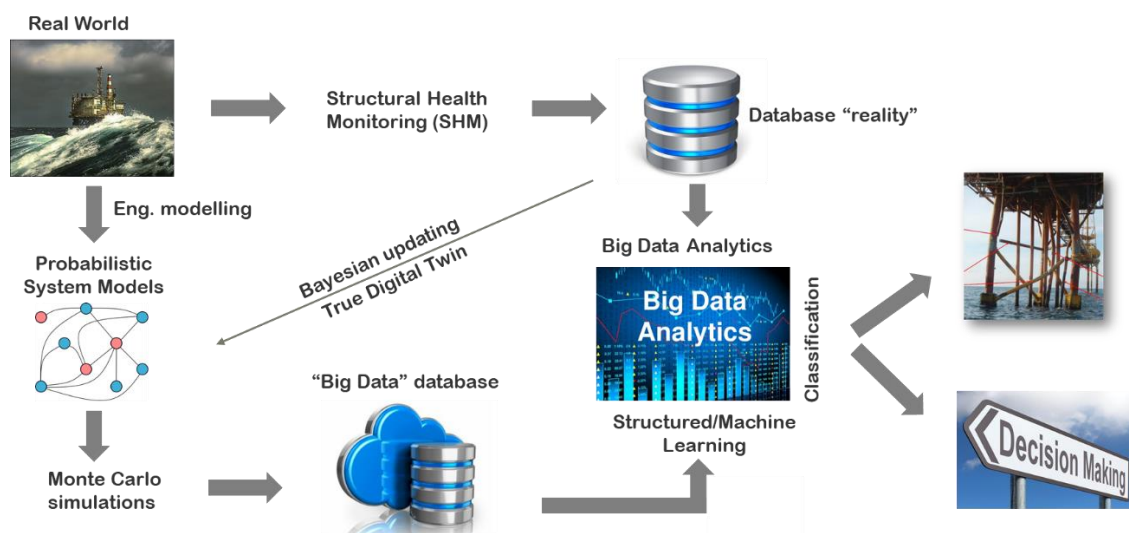


Figure 1: Improvement of structural integrity management by implementation of SHM, digital twins and advanced damage detection for extreme events