

Danish Offshore Technology Centre Technology Conference 2022

Modular Maintenance - modular architecture creating a more accurate overview of the continuous maintenance efforts and propose enhanced frameworks and methods for planning maintenance activities

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Maintenance is an important element of running large, complex assets. It plays a critical role in ensuring the key factors of asset operations: high availability, lowering operational costs, and ensuring safety for both employees and the environment. Both industry and academia identify high complexity and aging assets to be one of the most challenging combinations for maintenance management: aging assets tend to require more maintenance while digital documentation is either lacking or expensive to acquire. This makes it difficult to implement newer methods such as predictive maintenance, as large parts of the knowledge required only exists as experience or in papers. These assets tend to also have solutions developed over time with multiple levels of additions, with work occurring in strict silos, making the implementation of new systems and processes more complex. There is therefore a need to gain an overview of the operational process. We have developed modular maintenance, an approach for understanding the interactions between the assets, the maintenance activities, and the IT infrastructure. By viewing all of the interactions across the operational organization in one, it is possible to identify opportunities of standardization that can improve the organization's ability to improve the maintenance management. Modular maintenance enables the introduction of tools that are difficult to implement when the interdependencies of the operational organization are unclear. The implementation of these tools have shown a potential of cost savings of between 5% - 12%. This indicates that modular maintenance has the potential to play a key role in the future of maintenance management.



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