Maximo Application Suite in the Offshore Energy Sector

- how MAS can help with early identification of maintenance issues

In the race to expand renewable energy production, the offshore energy industry presents an extremely attractive option – particularly in the UK, where land-based developments, even in essential industries, are restricted by planning laws and government energy policy.

Organisations in the renewable energy sector are harnessing new technologies to help turn the 'green revolution' into reality. At the same time, the requirement for effective enterprise asset management in this sector is growing, with windfarms becoming increasingly integral to power generation throughout the UK, Europe, and the rest of the world. The new Maximo Application Suite from IBM has enhanced the benefits offshore companies can get from an EAM system.

So, how can Maximo Application Suite (MAS) help in the progression of the offshore energy sector – and which technologies in MAS will benefit offshore energy the most?

Identify anomalies with Maximo Visual Inspection

The process of identifying anomalies can be made more sophisticated for offshore energy companies through technology such as Maximo Visual Inspection.

This software provides additional anomaly detection algorithms, so that you can now train a model to recognise what is 'normal', and the model will flag any differences as anomalies. Maximo Application Suite will automatically create alerts, and can even directly initiate maintenance calls if required.

For example, automated image analysis could be used with a turbine-mounted camera, to visually examine blades when they are stationary. Although the amount of maintenance required for turbines is low, the cost of going out to do maintenance, with the large vessels required for newer, larger turbines, is high. It therefore makes a lot of sense to monitor turbines remotely, and schedule maintenance (and preventive maintenance) of multiple turbines together, where possible. Maximo Application Suite can make all of this a reality.

Combining current and historical data to improve maintenance

MAS apps such as Maximo Monitor and Maximo Health, enable you to combine live data from remote sensors with historical data, to enable automatic anomaly detection. Algorithms compare current performance of your offshore turbines with established patterns to spot any anomalies, and give you early warnings of issues requiring further investigation or maintenance. This can also make it easier to schedule maintenance calls optimally, reducing your costs.

You can configure the Maximo Monitor dashboard to show you the asset metrics that are most important to you, and to issue alerts according to the conditions that you set.

Gathering data inputs with Maximo Health and Predict, as part of the anomaly detection process, also helps to put you on a pathway to true predictive maintenance. Although this is not available yet, having quality performance data will be a key part of any predictive maintenance solution in the future.

Compliance and work processes

The hazardous nature of work in the offshore energy sector means that there are safety requirements all operators in the industry must follow. Maximo Application Suite has been designed so that a minimum required level of expertise or qualification can be tagged to any service request that goes through the system. This ensures that maintenance work is only completed by engineers with the required experience, expertise or permit.

Maintenance processes can also be strictly enforced, so that engineers must perform all actions in a precise order, and every action they take is logged in Maximo. You can create and edit mobile forms directly from the MAS dashboard, which can then be used in a mobile EAM solution such as Peacock Engineering's Fingertip, to ensure risk assessments and maintenance procedures are carried out in the order that you want. Information from the forms, and other mobile inputs, are captured by Maximo to provide a full digital audit trail for any maintenance or other work procedure. Where health and safety standards and operational quality are critical, auditing is often a major part of the work process; MAS and Fingertip fully support audit tracking and management, as required by insurance providers such as Lloyds Register or DNV.

Achieving continuity of expertise in a highly skilled workforce

Offshore energy is an extremely complicated sector with a highly skilled workforce – and this means that achieving continuity of expertise is crucial for a company's success. Maximo Assist, part of MAS, enables this continuity of expertise.

Using Maximo Assist, engineers/technicians can initiate a collaboration session with a remote subject matter expert, which can include audio, video, and even Augmented Reality. The remote expert has access to the work order and asset details and history, to provide additional context. Both the on-site engineer and the remote expert are able to record and annotate the collaboration stream to highlight areas of interest or suggested actions.

Maximo Assist saves the summary of any collaboration sessions that take place – between an engineer/technician and a remotely-based expert. This summary will include process steps associated with a fix, as well as any chat conversations that take place.

Your engineers can not only view the maintenance history of an asset, but also the steps and conversations that were taken during previous maintenance. This ongoing record of conversations helps you to retain valuable specialist knowledge, and helps you to move away from reliance on any individual engineer. This improves your overall knowledge bank and makes specialist knowledge available to all members of your team. So even if one of your most senior engineers leaves your organisation, their expertise is retained through the Maximo Assist technology.

For a full list of features in Maximo Application Suite, or for more information about how the software can be configured to your offshore energy company's requirements, please contact us today on **+44(0)20 3356** 9629 or **info@peluk.org.**

About Peacock Engineering

Our consulting team is made up of long standing IBM Maximo professionals, each with an average of 12 years' experience in the product and who, together, have amassed over 400 man-years of Maximo systems implementation experience.

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