

Integrated Field Modelling of the Miskar Field

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An Integrated Field Modelling project for the offshore Miskar field in Tunisia was carried out. Several objectives were defined for this project: reservoir management, production surveillance and production optimisation. A new phase of wells are to come online which will produce different inerts and liquid compositions to the current producing wells. This means that an integrated modelling system needs to be linked to a new metering system to monitor the resulting gas blend and whether it can be processed through the existing process facilities while accounting for the greater liquid content due to the higher CGR and observing the current constraints. To achieve the predefined objectives, it is therefore important to be able to forecast in real time the gas composition at the platform (CO₂, H₂S, N₂) and liquids production after infill drilling using high frequency data. With this information, a model based rate allocation and back allocation were achieved in IFM.

The first step had been to ensure that a fully integrated asset model was available (reservoirs linked to wells which were in turn linked to topsides and production facilities). This asset model was then integrated with the onshore processing plant and economic models. Following this the IFM system could be deployed with the associated workflows. This allowed various database systems to be connected as part of a PDMS refresh project using IFM to integrate the short-term forecasting methods and the production allocation.

The conclusion of this approach was a streamlined process with high frequency data being used to update the models from reservoirs to topside.

The benefits achieved from achieving such a streamlined process were:

1. Improved co-operation and sharing of data between teams.
2. Less time needed to update or calibrate models.
3. Increased accuracy in forecasting workflows.
4. Quicker decision making by the assets thanks to the automated workflows.

So overall, using IFM allowed an infrastructure which connects people with real time data while ensuring optimisation of the core business processes.