

Abstract

Profit = Revenue – Expenses. This equation also applies to the Offshore Industry, but here profit is critically related with risk management. Project management can do little in managing revenue because is highly related to regulatory risks, however we can do a lot to manage the huge costs derived from developing a project in the risky maritime environment.

So focusing on the Offshore Project Investment Cost, it is widely recognized that the biggest slice of the pie are logistics and installation project costs and risks. The importance of both factors comes mainly from the complex maritime environment, which cause the weather down time impact. The best way to deal with this challenge is to plan in advance, find the best strategy.

OSIAL is a new logistic planning tool which helps the project management team to find the best installation strategy, simulating what would have happened if the project were executed at any time in the past, based on the site's historical meteorological data. Carrying these simulations out several times and on different dates will help us to define the strategy and minimize time, cost and risk.



(Pacific Orca works tested by OSIAL. real WDT vs OSIAL WDT. Successfully results)

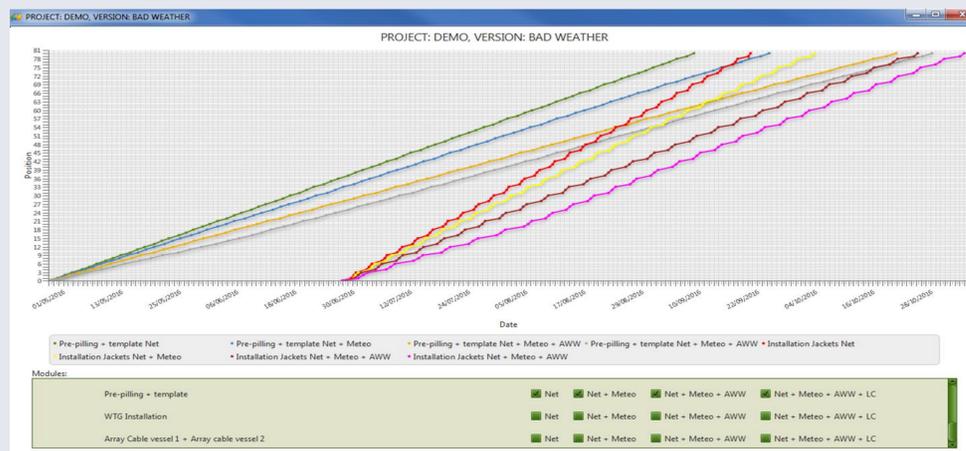
OSIAL history

Iberdrola Engineering and Construction faced the need to plan offshore projects, and minimize weather down time risks, but we couldn't find any application which met all our requirements. For this reason, we launched a joint IT project between the Installation & Logistic team and the IT Department to develop our own application. At present, OSIAL has been tested in our in-house projects with very satisfactory results.

OSIAL is user-friendly software that doesn't require advanced IT or statistical skills, it is designed to be used by the Project Management Team.

OSIAL plans all the project activities, all packages can be analysed as a whole or independently, detecting any clustering between packages. Simulations include many adaptable variables (workability, learning curves...) and operational limits across sites with different environmental conditions.

The most important difference is that the simulations run over real meteorological data. We do not apply more or less cooked statistical meteorological data to the project plan. We run the project plan across the raw historical data of the site, generating several simulations, and then analysing the results by applying comprehensible statistical methods. OSIAL has modules for managing storage areas, for calculating costs, for detecting clusterings...



(Clustering detection, interface for installation pre-pilling and jacket installation)

How OSIAL works?

The goal is to minimize the project cost, time and risk, optimizing the logistic and installation strategy. This is carried out in 6 main steps:

1. Add the project site or sites with their raw historical meteorological data or persistence tables, this can include various variables, wind, wave...
2. Define a project plan sequencing the activities. In particular defining durations, costs, required time frames windows, and weather operational limits.
3. Create a project simulation. Defining the time frame and the frequency of the simulation. E.g. Between 2000 and 2010, simulate the project starting each day, 3650 simulations.
4. Analyse the results. The system reports include detailed and graphical data to analyse each simulation project's performance, considering not only time but also cost.
5. Multiple versions of the project can be created, and for each version, multiple simulations can be executed. Afterwards, all results will be compared and with a continuous improvement process, modifying activities, sequence, vessels ..., it ends with a refined and optimized project strategy.
6. Select the best strategy.



(5 year simulations (1850 cases, 1850 different starting dates for a package))

Conclusions

By using OSIAL across Offshore projects with a complex logistical process, the Project Management Team can optimise the project strategy and is able to take early decisions based on serious grounds, prior to going offshore.

Ultimately, reducing the required investment cost and risk of the offshore projects, improves the expected industry profitability, guaranteeing a promising future.

OSIAL has been tested with different works which have been developed in WoDS with successfull results.

Currently, OSIAL is using in calculations for Wikinger and East Anglia projects and in 2015 3.0 version of OSIAL is being developed.



(Costs module interface)

