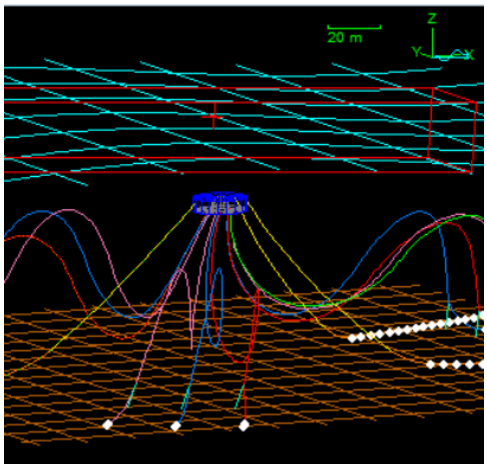
Zebec
MARINE CONSULTANTS & SERVICES

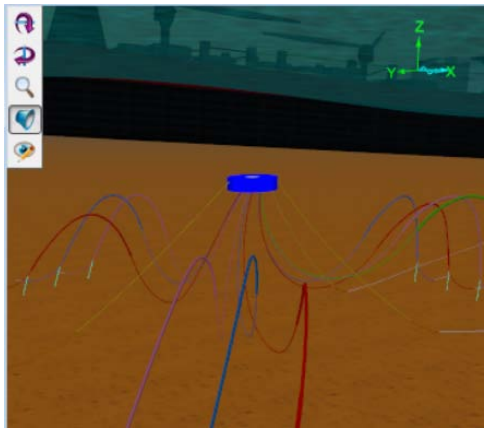
RISER INTEGRITY ANALYSIS

Zebec performs analysis of flexible risers and umbilical subject to site specific environmental conditions. Both static and time domain simulation are covered in the analysis domain. The analysis can be covered at the riser level or at an integrated level involving the vessel, the mooring system and the riser & umbilical system. Various types of riser systems along with the incorporation of mid water arch can be effectively incorporated into the model. The riser system is assumed connected to the PLEM at one end and to the turret bottom at the other end. Fatigue analysis of the riser system forms an integral part of the analysis work. All calculations are carried out as per class recommendations as well as recognized international guidelines.

The typical studies include the following :

- Global strength analysis – installation, extreme, operational and accidental conditions
- Riser configuration optimization
- Fatigue analysis of riser system
- Interference / clash analysis
- Integrated analysis involving vessel and the mooring system
- Calculation of global forces at PLEM end
- Calculation of loads on riser hang-offs
- Calculation of riser angles at turret
- Calculation of maximum excursion of riser system
- Effect of mooring failure on riser s**ystem**
- Evaluation of performance of mid water arch
- Estimation of touch down point (TDP)





Following details taken into consideration :

- Stiffness of riser elements
- Vortex induced vibration (VIV)
- Sea bed friction
- Incorporation of system damping and drag

The following environmental conditions can be imposed:

- 100 year return wave condition
- 100 /10 year return wind condition
- Current speed with appropriate return condition

Software used:

- Orcaflex from M/S Orcina

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