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From Subsea to Separator: Simulation for the Oil & Gas Industry



The oil and gas industry faces many engineering challenges. New field developments in ultra-deep water, long subsea tie-backs with challenging production conditions and harsh marine environments place increasing demands on production equipment, its installation as well as its operation. In addition, operation of ageing offshore facilities and field life extension can test safety and process engineering systems to the full. In many of these areas, engineering simulation can provide invaluable insight, knowledge and engineering solutions and there is still much potential for development of applications and simulation techniques.

This presentation aims to demonstrate how simulation is being used to address a range of challenges in the oil and gas industry as well as introducing ongoing developments in the field of simulation using STAR-CCM+. Examples will showcase studies of how STAR-CCM+ is helping to develop hydrate avoidance and sand management strategies, enhance separator performance and improve offshore safety.

Furthermore, applications and new modeling techniques will be introduced to demonstrate ongoing development to provide solutions to complex issues such as hydrate formation, pipeline slugging, emulsion formation and coupled fluid-structure interaction, which has numerous offshore applications.

Coupling of STAR-CCM+ with a number of other industry simulation tools will be discussed to show how complete system solutions can be obtained.

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