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Providing "Mega Project" Topsides Facilities in Deepwater Malaysia

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Abstract

Description

This paper describes the project management processes used to design and procure the topsides facilities for the Gumusut-Kakap project.

Gumusut-Kakap is a “mega-project” to be installed in Malaysian deepwater to produce up to 150,000 bpd sales quality oil whilst injecting up to 220,000 bpd seawater and up to 300 MMscfd gas to the reservoir. The topsides facilities are thus world-class in scale. They will be supported on a new-build, moored semi-submersible, receiving production from subsea wells. Interfaces between the topsides and the hull, the subsea systems and the export pipeline are complex and are described in the paper.

The topsides execution strategy is aligned to the project's drivers: Safety, Technical Integrity, Capability Development, Schedule and Cost. These drivers were enforced throughout the FEED phase which was executed in Shell's US design centre and the Detailed Design phase which was transitioned to a Malaysian EPC contractor to facilitate Capability Development, Schedule and Cost. The challenges, plans and learnings from this transition are described in the paper.

The project management processes developed in Shell's deepwater projects group were adapted for the Gumusut-Kakap project and used to support the EPC contractor. Key processes implemented include: Design Verification, Weight Management, Interface Management and Flawless Start-Up, enabled through key Information Technology (IT) tools. These processes and their customisation are described in this paper.

The results presented in the paper will be **applicable** to mega-projects, especially those in areas developing local capabilities.

The **conclusions** are:

- Alignment of stakeholders on the project drivers is vital
- Contractor capability is a key areas to address in transition planning and capability development
- Project management processes need to be customised for the particular project

The **technical contribution** of this paper is through:

- Base plan for transitioning a design from a company center to the host country
- Improved techniques for developing capability of key contractors
- Enhanced tools for managing complex project interfaces

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