## Drilling system optimisation by knowledge-based approach

Information of past drilling events can be used for efficient planning and design of a proposed drilling program. For instance, information of depth intervals for unconsolidated formation and lost circulation zone from past drilling events in a region can be used to design successful casing programs for a proposed drilling operation in the region. Similarly, drill string's fatigue assessment, optimum bit program and drilling cost and time prediction can be performed efficiently for a new well using past data. The current industry practice of storing and using such data is not systematic and consistent. This project aims at developing a drilling information system through system modelling approach identifying various operations, operational parameters and their interrelationships in a complete drilling program. The implementation of this system through relational database, object modelling or expert system will then establish a base to efficiently preserve and retrieve temporal data involved with many drilling events. A convenient interface can be designed to retrieve and use necessary data from this system with engineering computational modules for a future drilling program.