

# Advanced TVD Wellbore Placement

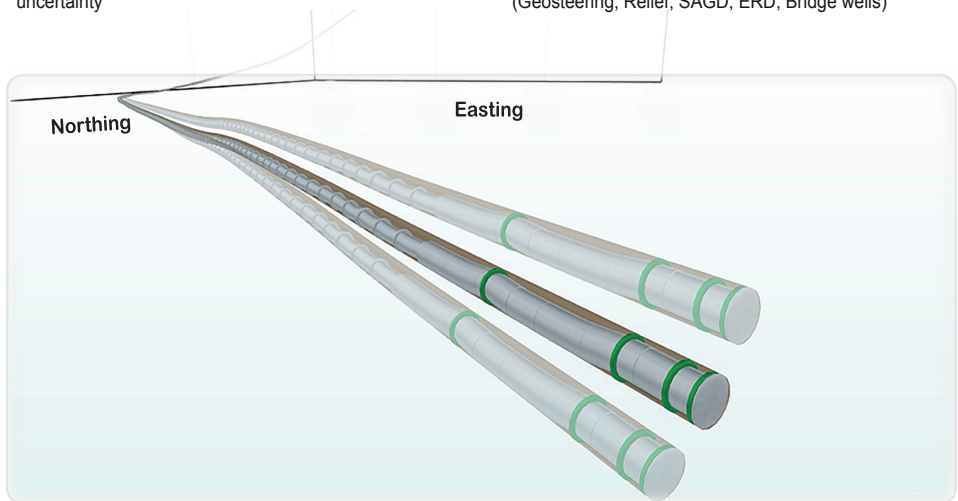
Ref: SM03

## Objectives

- Improve wellbore placement by combining Sag Management [SM01] & Local Dogleg Analysis [SM02]
- Address challenging collision avoidance cases with better wellbore position and uncertainty knowledge
- Real-time wellbore position placement improvement in the pay-zone
- BHA sag correction for each survey station [SM01] and well path reconstruction between them [SM02]
- Correct the TVD throughout trajectory and reduce its uncertainty

## Benefits / Real Time Post-Well

- Improve collision avoidance process and drilling operation safety
- Improve initial BPD and ultimate recovery by reducing TVD uncertainty
- Update reservoir model with accurate wellbore surveys to improve oil recovery solving production issues
- Revisit mature field refining existing wellbore placement and identify new infill targets
- Increase precision of complex or sensitive wells (Geosteering, Relief, SAGD, ERD, Bridge wells)



Optimise drain position throughout the pay-zone by reducing TVD uncertainty

## Includes

- 3D BHA sag correction using unique BHA deflection model combined with ISCWSA error model framework
- Trajectory reconstruction between surveys using field data and step by step trajectory prediction
- Real-time support in sensitive drilling phases (collision avoidance, intercept...)
- Real-time or post mortem survey legs concatenation to define a reference wellbore trajectory
- Applicable to any type of survey tool, drill string and BHA (Rotary, VGS, RSS, Motor, URWD)

## Deliverables and Timing

- Earliest result delivery within 7 days after reception of full and usable set of data
- Delivery of final PowerPoint® or written report within 3 weeks, intermediate reports on demand
- Result support from our most experienced Drilling Champions, upon request
- Result presentation in client's office (optional)
- Real-time support available onsite or remotely (optional)