

Avoiding well collisions

One of a series of fact sheets produced by the Well Expert Committee's International Standards Task Force.



During 2014, IOGP's Wells Expert Committee (WEC) performed a gap analysis on Global Industry Response Group (GIRG) Report 463. The aim was to check which recommendations on deep water wells had been acted upon and which recommendations needed further work. On May 2nd 2014, drilling managers from several oil companies met to discuss the Wells Expert Committee work programme, including recommendations cited in IOGP Report 463. An additional recommendation was to collect available documentation for the topic of well collision avoidance.

Well collision risk – and its avoidance – is an important aspect of any well design, especially in mature fields. Many operators and service companies use similar methods for collision avoidance calculations. Where they differ is in the factors they use and input parameters. These can depend on internal policies, regional operating experience, and overall well risk profile.

There are currently no international standards on management of well collision risks. However, the Society for Petroleum Engineers (SPE) does provide best practices and recommendations on wellbore positioning and collision avoidance through its Wellbore Positioning Technical Section (WPTS). The SPE WPTS is also known as the "Industry Steering Committee on Wellbore Survey Accuracy" (ISCWSA). This group was formed in 1995 by professionals from several oil and service companies. These include Statoil, BP, Baker Hughes Inteq, and Sysdrill. The Committee meets approximately twice a year. Minutes and presentations are available on its website: <http://www.iscwsa.net/>

The main committee establishes and disbands working groups as required. The work groups meet independently of the main Committee. Currently there are five work groups:

- Collision Avoidance
- Error Model Management

- ISCWSA Industry Education
- Operator's Wellbore Survey
- Well Intercept

ISCWSA members have published several SPE papers on wellbore positioning, a fundamental aspect of collision risk management:

- SPE 67616, *Accuracy Prediction for Directional Measurement While Drilling*
- SPE 90408, *Prediction of Wellbore Position Accuracy When Surveyed with Gyroscopic Tools*
- SPE/IADC 105558, *High-Integrity Wellbore Surveys: Methods for Eliminating Gross Errors*
- IADC/SPE 103734, *The Reliability Problem Related to Directional Survey Data*
- SPE 95611, *Quantification of Depth Accuracy*

For more examples of relevant publications, see the *Position Uncertainty Bibliography* at ISCWSA.net: <http://www.iscwsa.net/index.php/iscwsa-doc/>

In 2015, API formed a task group to develop a recommended practice on Wellbore Surveying and Accuracy (tentatively designated RP 78). This will leverage current industry knowledge in an effort to further formalize the work completed to date by the ISCWSA and key industry stakeholders.