

Collision Avoidance Work Group

13th meeting, Grand Hyatt Hotel, San Antonio, 10th Oct 2012

MINUTES OF MEETING

Present: Darren Aklestad, Bill Allen, Andy Brooks (minutes), Pete Clark, Ian Mitchell, Erik Nyrnes, Wayne Phillips, Benny Poedjono, Andy Sentance, Anas Sikal, Harry Wilson (Group leader).

Absent: Jerry Codling, Maxime Devilder, Steve Grindrod, Phil Harbidge, Angus Jamieson, Fernando Laroca, Dave McRobbie, Mark Michell, Ross Lowdon Jim Towle

Visitors: Neil Bergstrom – Devon, Aprameya M. Dhara - Weatherford, Jonathan Lightfoot – Oxy, Roger Goobie - BP, Adrian Ledroz - Gyrodata, Son Pham - ConocoPhillips, Jim Shipstead - SDI, Stefan Maus – NGDC, Brett van Steenwyk SDI, John Weston - Gyrodata

Changes to Group membership

With the exception of John and Stefan, all of the visitors listed above confirmed their wish to join the Group, attend meetings and contribute to the generation of best practice recommendations.

Minutes of the last meeting (Harry Wilson)

The minutes were read. The following were noted during discussion of the minutes:

- Pete Clark has submitted a document describing process flow and will circulate this to software providers for comments.
- No progress reported on Best Practices document, so this action item remains open for Ross Lowdon.
- Ian Mitchell will need input from operators to define a HSE Risk well. Bill Allen noted that there are concerns about reputation which mean that contractors also have an interest in decision making for wells which are not classified as HSE risks.

The minutes were approved.

Action: Pete to distribute process flow for comment.

Lexicon (Pete Clark)

Four additions have been made; available space, collision, collision probability, and OSF. Pete will review the definition of "collision", to clarify that the definition refers to a hypothetical event. Jonathan Lightfoot suggested that "combined covariance" might be included, as it refers to an option in Compass.

Action: Pete to get a definition of "combined covariance" from Landmark.

Bibliography (Pete Clark)

Some papers are probably included which should not be.

Action: Pete will filter the bibliography and report to the group before the next meeting.

Current Common Practice (Harry Wilson)

It was suggested that ellipse expansion should be included.

Action: Angus: ensure that the ellipse expansion method is defined correctly.

Action: Harry and Erik Nyrnes: clarify or update the Statoil method to reflect their current practice.

A list of “desirable features of a clearance scan” has been included.

Action: Andy Brooks to add to this list that the outcome should be independent of the ellipse plot scaling.

Separation Factor Calculation Process (Pete Clark)

Pete described a document “Directional Software Anti-Collision Algorithm: Expectations”, which was developed within Chevron to provide assurance that different software platforms would produce similar results. Pete invited comments on the document. Harry suggested that the references to Chevron could be removed and the document could be re-titled “An Example . . .”.

Action: Harry to add a reference to Pete’s document in the “Current Common Practices” document.

Recommendation Against M.A.S.D. Dispensation (Harry Wilson)

The document did not originally state that $P1 \cdot P2$ should be very close to zero; i.e. either P1 or P2 must be very small. The document was modified to state that because P2 cannot be quantified, it should be assumed to be 1 for HSE risk wells.

There was some discussion concerning what was meant by “very close to zero”. Kevin McClard suggested we might talk to someone in the insurance industry. Wayne Phillips argued that the existence of an anti-collision rule is equivalent to selecting a value.

Hugh Williamson of BP has commented on the mag ranging section saying that he feels ranging’s main advantage is that it provides a positive indication of relative position and that drilling within the MASD is admissible if in possession of ranging information of sufficient quality and clarity. Anas described how PathControl have calculated uncertainty for position determined by ranging. It was generally felt that, given a ranging distance and a valid ranging uncertainty, it should be possible to calculate a new MASD value. Bill Allen noted that BP do not use passive ranging techniques for anti-collision purposes, because they consider that there is a finite risk of failure to detect.

Standard well sets (Harry Wilson)

Pete Clark would like to see a true 90 degree intercept, which can be done if the reference well is extended to horizontal, also a true head-on approach and a well with multiple close approaches.

Action: Harry to publish the sets as they are, and consider adding more cases later.

Action: Andy Sentence to evaluate what would be required to include a true head-on approach.

Process Management (Harry Wilson)

Some legalese has been removed and a disclaimer has been included. Bill Allen has also made a few changes to the text.

Action: Bill and Harry: Modify the document as suggested.

Appraisal of Collision Avoidance Rules (discussion)

The “Chairman’s short list” included three methods, Statoil, OSF, and Tech 21.

Erik Nyrnes described a recent master’s thesis by Bjorn Erik Loeng, and then he presented Statoil’s current calculation of separation factor.

Wayne Phillips gave a brief description of Schlumberger’s OSF method. It was agreed that these two methods were very similar except for the cut-off point.

Action: All to give some thought to the importance of considering the orientation of the reference well (in particular; is it thought to be approaching or receding from the object well, and should this influence the outcome?). Be prepared to discuss at the next meeting (and feel free to initiate discussions in the meantime).

Meeting closed.