Minutes of the 36th

ISCWSA meeting

Industry Steering Committee on
Wellbore Survey Accuracy

and

SPE Wellbore Positioning Technical Section

San Antonio, Texas , USA

October 11th 2012

Meeting Venue

Grand Hyatt.

San Antonio,

Texas

USA

Agenda

The Industry Steering Committee on Wellbore Survey Accuracy, also known as the SPE Wellbore Positioning Technical Section, will soon hold its 36th meeting. This event will be held on the 11th October, 2012 at the Grand Hyatt Hotel, 600 East Market Street, SAn Antonio, Texas 78205. See the ISCWSA website; http://www.iscwsa.net/ for information

Activity	Presenter(s)	Title / Notes	From	To
Welcome & Coffee			**08:00**	**08:30**
Introductions	Bill Allen, BP	Introductions & Summary of Schedule	08:30	08:45
Presentation	Jim Hood, BHI	An unconventional tool for calculating wellpath position in high dogleg severity wells	08:45	09:15
Presentation	Clinton Moss, HAL	A comparison of active and passive magnetic ranging techniques in a relief well application	09:15	10:00
Coffee			**10:00**	**10:15**
Presentation	Benny Poedjono, SLB	Pad design Key for Marcellus Drilling and general Slot Allocation practice	10:15	10:45
Sub-committee update	Harry Wilson, BHI	Report of Collision Avoidance Sub-committee activity	10:45	11:05
Sub-committee update	Steve Grindrod, Copsegrove	Report on Error Model Sub-committee activity	11:05	11:25
Presentation	Dr J.Rasson, Institut Royal Météorologique	In-situ geomagnetic absolute orientation measurements with the AUTODIF instrument	11:25	11:55
Sub-committee update	Ross Lowdon, SLB	Report on Well Intercept Sub-committee activity	11:50	12:10
Lunch			**12:15**	**13:00**
Facilitated Discussion	Ross Lowden, SLB; Jeffrey Mohammed, BHI; Steve Mullin, Gyrodata	The business partner's perspective of current wellbore positioning challenges	13:00	14:20
Presentation	Stefan Maus, MagVar	The NGDC/USGS real-time magnetospheric disturbance field calculator	14:20	14:50
Administration	Robert Wylie, NOV	Treasurer's report	14:50	15:00
Coffee			**15:00**	**15:15**
Discussion	Neil Bergstrom, Devon / Pete Clark, Chevron	Operator focus group – incorporation into ISCWSA as a common practice sub-committee	15:15	15:45

Presentation	Xiong Li, Fugro, Benny Poedjono, SLB	Understanding how the main field model affects computing the vector crustal magnetic field for directional drilling applications	15:45	16:15
Sub-committee update	Steve Mullin, Gyrodata	Report on Education Sub-committee activity, Summary of SPE ATW "Collision Avoidance And Well Interceptions, Hits & Misses"	16:15	16:45
Update on new Website	Ross Lowdon, SLB	Update from the Webmaster	16:45	17:00
AOCB	Bill Allen, BP	AOCB, Wrap-up & goodbye	17:00	17:30

Attendees

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Meeting Minutes

Bill Allen introduction and thanks to the committee members

Jim Hood An unconventional tool for calculating wellpath position in high dogleg severity wells

Chris McCartney How close to the bit do you need to be?

Jim Hood Above the motor, or RSS but not on third point of contact needs to be above a stabiliser can get upto 11 DLS close as bit as possible.

Neil Bergstrom Skip taking surveys in magnetic interference areas, you could miss taking survey and ignore the information this could lead to a well collision.

Jim Hood you need an orientation survey before starting, we can probably use the bending moment as a survey.

Ed Stockhousen WRT intermediate surveys with incl and azimuth how do you do that

Jim Hood Back calculating from the DLS

Ed Stockhausen SAG causes a real issue

Jim Hood Missing local doglegs need continuous surveys

Ed Stockhausen Can use continuous D&I to fill in survey gaps

Jim Hood No other way to get a survey measurement from a casing exit

Junichi Sugiura Borehole size dictates DLS to some extent how do you control that?

Jim Hood Need an acoustic caliper at measurement points to make this work

Junichi Sugiura Is this sensitive to whirl and Stick slip

Jim Hood Needs to be extreme, whirl more of an issue

Junichi Sugiura Accuracy of this method

Jim Hood Looked at continuous surveys data

Bill Allen Minimum incl needed for this service

Lisa Grant Need bend on the hole

Jim Hood Incorporated survey into side forces

Jim Hood Yes this could prevent the loss of a well assistance for control and problem identification needs to be done, could use to tell when you need a survey

Pete Clark Can you use Mag TF to kick off from vertical

Jim Hood Need to upgrade the tool not a survey grade magnetometer

Clinton Moss A comparison of active and passive magnetic ranging techniques in a relief well application

Neil Bergstrom Can we improve the signal source to improve for passive ranging

Clinton Moss No the signal to noise is too low

Neil Bergstrom How long to do active ranging NB

Clinton Moss 24 hr average per run 7pprox.. 20 days for the well

ED Stockhausen EOU plan for the relief well not to be intercepted to soon ES

Clinton Moss Need to plan up front need to be able to kill the well at you TVD interception point

John Stigant Why did people not realise this was something wrong -

Clinton Moss Can't really comment

Le Fai How do you account for formation effects

Clinton Moss Very small effect on tool from bed boundaries at max range 45m closer there are far fewer problems

Anas Sikal Did they analysis to see why the first 11 attempts failed apart from casing corrosion

Clinton Moss Can't comment on this

Neil Bergstrom Signal was not above the noise level poor interpretation

Clinton Moss Agreed

Ludovic Macressey All the ranging companies depend on interpretation so big range on accuracy/ranging box side, what is being done to solve this

Clinton Moss Working to improve the reliability of the measurement need a better gradient measurement

Ed Stockhausen Sometimes the boxes are not right, sometimes the box's are too optimistic so that is a safety issue

Clinton Moss Agreed sometimes this happens

Candidates for ISCWSA positions

ISCWSA Secretary Ross Lowdon vacated his post and Chad Hanak was voted in as secretary

ISCWSA Treasurer No contest Robert Wylie stays in post

ISCWSA Webmaster Ben Hawkinson contested Phil Harbidge won the vote and stays in post

Benny Poedjono Pad design Key for Marcellus Drilling and general Slot Allocation practice

Lisa Grant What is the survey program? How do you manage to avoid well collisions as MWD are not reliable LG

Benny Poedjono Need to survey to get to right sail angle

Pete Clark Thoughts on slot separation distances at surface

Benny Poedjono It is defined by the size of the rails for the rig 7m would be good but not always possible

No survey redundancy with drilling shoe to shoe RG

Benny Poedjono Verification of surveys so GWD and MWD overlap, rely on magnetics after that and no redundancy

Roger Goobie Collision avoidance issues with old mine shafts?

Benny Poedjono This does happen but not in Marcellus, but is a real issue in other area

Roger Goobie How far apart are the surveys at TD, more than 25m absolute or relative positions critical

Benny Poedjono EOU's at TD need 700ft spacing, both are necessary

Neil Bergstrom How far away to not see offset wells NB

Benny Poedjono Need to be 35ft separation

EM MWD can be used for air drilling RW

Benny Poedjono Hammer drilling is the issue, MWD cannot survive

Harry Wilson Collision avoidance workgroup

2 page document on how to mitigate safely

Fundamentals of collision avoidance management – high level document needed now need to turn this into a management system

Expanded well set for testing collision set rules to be published 1 ref and 10 offset wells

Work done on implementing error models

Sum up what is left for the workgroup – defining the best possible method is critical – need to define best practices on how to implement this Ross Lowdon has offered to do this.

Lisa Grant Spoken to relief well companies and got stats on relief well caused by well collisions

Harry Wilson That info will be useful yes

John Stigant Are you going to translate that into a definitive document

Harry Wilson No that is a step to far, we are not a standards committee

Harry Wilson Error model maintenance sub-committee

Only revision memos difficult to implement and be consistent. Combined error models needed now described so software providers can implement easily.

Recommendation on inclination only data to come, as there is no standardisation and technical integrity

Ross Lowdon Could the committee work on how to manage correlation/de-correlation of error model terms

Dr J. Rasson In-situ geomagnetic absolute orientation measurements with the AUTODIF instrument

Son Pham Is there consideration for artic deployment Son P

J Rasson Not yet ready for this, need to address the issues with snow and fog for the laser sight

Benny Poedjono Crustal variation must be taken into account

J Rasson Taken account of the mail field model movement, does not measure vertically

Eric Nyrnes Station does not give B total SN

J Rasson That is correct

Bill Allen Do you build non mag theodolites BA

J Rasson Yes

Ross Lowdon Well Intercept Sub-committee meeting

Ed Stockhausen Govt demands relief well planning, what is the group doing towards this? ES

Ross Lowdon This is in the works

John Stigant What else is ranging used for

Ross Lowdon SAGD, P&A, coal bed methane, well avoidance, completion recovery

Ross Lowdon, Jeffry Mohammed, Chris Chia Steve Mullin The business partner's perspective of current wellbore positioning challenges

Ed Stockhausen, Chevron: Government requires relief well plans to issue permits, do you provide guidelines and references?

Ross Lowdon we need to do that we need to lay down terms and references and should produce something useful to the industry on relief well planning.

Bill Allen there is a lot of work within this group, and we need more people to get involved in this sub-committee.

John Stigant I am interested to know some of the examples/definitions of the interception wells?

Bill Allen A comment: the industry does not clearly understand these technologies, we need to raise awareness. This group has a real opportunity to help out and clear the understanding of this technology.

"The Business partner's perspective of current wellbore positioning challenges" Panel session

Ross Lowdon presentation Suggested to get operator/service companies agree on ONE standard.

Pete Clark We had an item on the agenda of the last meeting that the operators to see what are the challenges of the wellbore surveying. Pete suggested going through all panel presentations first then ask questions.

Jeffery Mohamed gave a presentation "Wellbore positioning challenges"

Steve Mullin, Gyrodata gave a presentation "Tell us what you want? Tell us the volume of the work?"

Chris Chia Presentation

Chris commented on how big the group has grown up and it is fantastic to have these discussions with operator companies. This group includes people who manage the wellbore survey industry. He recommended that operators should support the work of this group on the wellbore positioning and the error models. Operators should sponsor technical advisors who are dedicated to Wellbore placement, and who will be talking to the government and regulators.

Other things, validating the error models are very important and we need to investigate the bases on the assumptions associated with the error models, such as the calibration. There should be standard means to discuss the validity of the calibration, and make sure the assumptions fit the error models.

Large chunk of the industry do not know about the wellbore positioning. There are some small service companies do not use the BGGM models and maybe we can find way to make sure our work is accessible by the entire industry. There are still a lot of operators and service companies need our help and need to know about what we have.

Pete Clark there is a high desire to incorporate more operators going forward. Question: can we identify/quantify the cost or value of this?

Ross Lowdon we waste thousands of dollars and hours because we do not have one standard. We keep going back and forth between each operator standard and our standard.

Pete Clark Is there an easy way to know what is the expected savings?

Jeffry Mohammed highlighted there is a management cost that is separate from the operation cost and training cost.

John Stigant I did compile some survey data about how often things went wrong by measuring the defects and their cost. My analysis concluded that 37% of the time something went wrong.

Bill Allen I would like to ask each one of you if you will change one thing what is it?

Ross Lowdon Standardization

Jeffry Mohammed Data quality and data integrity

Steve Mullin Better understanding of technology by operators

Chris Chia continue growing expertise and promote developing industry advisors.

Son Pham We need to realize the difference between a low tier service companies and high tier service companies, and large operator companies and small operator companies. We can get together as one industry and have one standard.

Aprameya Muralidhara, Weatherford: We all suffer from missing well database and this presents a significant problem. Someone has to take responsibility of the well database.

Chris Chia: We as a group need to define a standard database. It is up to a group like this to define the database standard.

Jeffery Mohammed Even large operator/service companies still suffer from this as much as the small operator/service companies.

John Stigant Sometime one operator does not agree internally on one standard.

Neil Bergstrom When something goes wrong, no one would like to admit the mistake.

Alisha Collins Communication between all parties is important. Between the service provider and the operator as well as between the office and the field operation are important to make every one understand the operation needs.

Jeffery Mohammed yes this is in line the operation management system.

Stefan Maus The NGDC/USGS real-time magnetospheric disturbance field calculator

Ross Lowdon Is this service free

Stefan Maus Yes

Stephane Menand Is this going to be a webserver so data can be grabbed

Stefan Maus Yes that can be done

Neil Bergstrom This should be a solution of the Argentina ranging issue

Stefan Maus Yes it might have helped solve the issue

How old is the model, and is it being used PM for Compass

Stefan Maus The underlying model has been used for a while, but the data in this format is new

Ed Stockhausen Can you get space weather warnings

Stefan Maus Yes this can be done, NOAA service space weather prediction center

Is this just the disturbance component in the data WP

Yes, but will include main field or HDGM model in the future

Robert Wylie treasurers report

PC what can we do with this money

DLL for the error models, UHI survey MSc sponsor a student, education work

How are we with following trends on attendance Piper

Good at predicting, need sponsors now because of the size of the attendees, need sponsors for the next meeting.

Neil Bergstrom operators group

Some Questions to the audience

How do you get an invite not formal just ask.

Can we bring the operators group into the ISCWSA? Yes approved, will do work between meetings, done every 2 months, open format

Robert Estes Could you invite government agencies to these meetings so not seen as an anti-trust activity

Neil Bergstrom yes

Produce a JIP to allow things to be brought to a point

Son Pham secretary and Neil Bergstrom chairman

Xiong Li, Understanding how the main field model affects computing the vector crustal magnetic field for directional drilling applications

Neil Bergstrom This is main field model specific?

Li Xiong You can take out the components and then apply it to another model, you compute the differences between the models and apply that.

Steve Mullin Report on Education sub-committee

Bill Allen Linkedin only way to go

Volunteer to complete a mentoring task No one volunteered.

Ross Lowdon Website update

Bibliographies need to be improved link to SPE website

AOB and Next meeting

PathControl offered to sponsor the event in Paris after the last day of the IADC/SPE conference in Amsterdam on 8/03/2012.