

ISCWSA / SPE Wellbore Positioning Technical Section

Error Model Maintenance Work Group

Minutes of the Meeting at ISCWSA#51, Online, 8th April 2020

Present

Andy McGregor	H&P Technologies	Shuba Love	H&P Technologies
Jon Bang	Gyrodata	Phil Harbidge	Pathcontrol
Harry Wilson	Baker Hughes	AnaS Sikal	Pathcontrol
Phil Scott	DGI	Steve Sawaryn	Independent
Darren Aklestad	SLB	Susan Macmillan	BGS
Pete Clark	Chevron	Ciaran Began	BGS
Adrian Ledroz	Gyrodata	Jerry Codling	Halliburton
Gunnar Tackmann	Baker Hughes	Jonathan Lightfoot	Occidental
Steve Grindrod	Copsegrove	Neil Bergstrom	H&P Technologies
Scott Farmer	Total		

Revision 5 Documentation

At the previous meeting the committee approved the release of revision 5 as a beta version. This release includes changes to misalignments and sag, addition of long course length terms and re-organisation of geomagnetic errors to deal with correlations. Documentation describing these changes has been placed on the website.

A comment in the release note about guidance for software implementers is not clear.

The group identified that diagnostics for: i) irregular course lengths and ii) anti-collision with relative geo-magnetic correlation between differing geo-magnetic models should also be included.

The discussion also covered the standard set of collision avoidance wells and whether changes are needed with these. Harry Wilson re-iterated that these profiles were designed just test the collision avoidance calculation and any error model could be used for that. The three test wells used to validate the error models are distinct from the collision avoidance set. Any considerations about updating the CA profiles are deferred to that committee. A formal clarification will be written to clarify this distinction.

The release of rev5 may have implications for the error model WITSML schema but should not affect the new P7 format.

ACTION: Andy McGregor to update release note to point to technical notes.

ACTION: Andy McGregor to add to diagnostics.

ACTION: Steve Sawaryn, Harry Wilson and Andy McGregor to draft a clarification on use and intent of the test profiles.

ACTION: Scott Farmer to liaise with Energistics and inform them of the rev5 changes.

ACTION: All to send any review comments on the documentation to Andy McGregor

Revision 5 Implementation

All the software groups in the meeting had plans to implement rev5 within the next year. Landmark have already released rev5 IPMs and several other teams had started software development. The operators on the call also intended to move to use of rev5 in their organisations once the relevant software was available to them and had been assessed.

The discussion also covered whether rev5 would replace existing MWD tool-codes. The meeting thought that it would and that we might make that recommendation once the beta test phase is over.

There was some concern that with rev5 increasing top hole uncertainty and the use of the surface margin term in the ISCWSA collision avoidance rule might be overly conservative. This will have to be assessed as users test rev5.

This committee had previously agreed that the error model should give our best estimate of true survey uncertainty. If users need to change their anti-collision then that is a separate matter.

Update of OWSG Models

The existing release of OWSG models (rev2) which have not been available online for some time have now been placed on the ISCWSA website, along with a note stating that we intend to update these as soon as possible.

Since this committee has taken on management of the OWSG models, it seemed appropriate to rename this set of tool-codes. After some discussion it was agreed that “ISCWSA Generic Tool-code Set” was the best title along with a clarification that these are default, conservative tool-codes for use when more specific models are not available. For now, we will also add that, “these were formerly known as the OWSG tool-codes.”

Funding for updating the OWSG models is an issue. The main ISCWSA committee have started to apply for funding but this will likely take a while. Pete Clark commented that many operators are more likely to contribute to the IOGP and perhaps we can collaborate with them.

Steve Grindrod and Andy McGregor had met to discuss how rev5 maps in to the OWSG set. MWD and EMS are relatively straightforward. All other tools except FINDS and BLIND get the XCL terms. However, we suggested that the misalignments should not be changed in the DIPMETER and CB-FILM models. This is summarised in the table below:

	XCL	XYM3E + XYM4E + SAGE	GeoMag
MWD	✓	✓	✓
MWD+AX	✓	✓	✓
EMS	✓	✓	✓
EMS+AX	✓	✓	✓
GYRO-MWD	✓	✓	
GYRO-NS	✓	✓	
DIPMETER	✓		
CB_FILM	✓		
BLIND (+TREND)			
INC ONLY	✓		
UNKNOWN	✓		
FINDS			

Scott Farmer questioned whether that would mean that these models are smaller than MWD rev5 in top hole. He will evaluate this.

Darren Aklestad queried the application of location based geomagnetic lookup tables into rev5. A workgroup was set up to discuss this at the 49th meeting. This action is carried forward (see minutes [here.](#))

Darren also suggested breaking the models down into their component parts to be re-created dynamically rather than having to maintain all the possible combinations.

ACTION: Scott Farmer to compare CB-FILM-xxx models with MWD rev5.

ACTION from #49: Working group (Darren, Andy S, Jerry, Steve G) to consider the implications of handling magnetic uncertainties from lookup tables or web services.

Close

Having used up the allotted time the meeting closed, with some matters still outstanding. A follow up online meeting will be called in about two weeks.