



Error Model Maintenance Sub-Committee

~~Andy McGregor~~, Helmerich & Payne

Marc Willerth



Error Model Maintenance Chair: Andy McGregor

Technical Director H&P UK

- Inverness, Scotland
- ~25 years in navigation & positioning
- ~20 in wellbore surveying
- Previously with Tech21, Weatherford, AJC
- Specialised in survey management, algorithms and error modelling





Error Model Maintenance Meeting

- October 18th
- 27 people in attendance
- Strong showing given a few notable absences



Revision 5 Adoption

- Several service companies now have (in theory) implemented full Rev 5
 - Including the partial geomagnetic correlations
- Most admit they have not had a good test case to see a difference
 - Outstanding item to see if test cases for correlations can be produced



Revision 5 – Misalignment Terms Case Study

- Equinor presented a case study with concerns about new misalignments
 - RIP tests for MWD / gyro Rev 4 vs. Rev 5
 - They have adopted a modified Rev5 that retains a systematic component
- Discussion that followed:
 - Mixed feelings as to whether Rev 5 feels optimistic or better matches data
 - Likely dependent on the wide variety of top-hole situations
 - Concerns around implications for relief wells
 - Questions around whether we should be conservative for safety or accurate and have conservative assumptions built into safety-specific workflows



Other Topics Discussed:

- Remit of committee with respect to Survey QC and CA separation
 - Possible need for cross functional meetings to work on edge areas
 - EM SC need to specify tolerances / good practices? (e.g. Stale magnetic values)
- What is the right amount of tool codes?
 - Small set vs comprehensive set? Maybe dynamic generation and naming?
Concerns about if any really uses a standard (e.g. operator specific modification)
- Should we revisit depth terms
 - Concerns about removing the biased error, and possible issue with shared names
- Discussion around continuous / rotating tool code & multi-mode surveys



Action Items

- Look into test data sets for correlated magnetic value terms
- Prepare proposal for what could dynamic model generation look like
- Review of P7/17 & WITSML format for exchanging error models
- Further discussion / data collection misalignment terms
- Discussion with other sub-committees about crossover work
- **Decisions / Tabled items**
 - For the time being the onus will be on survey providers using mixed-modes to provide an equivalent model under the current framework



Thank You! Questions?