



# Survey QAQC Activity Report

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Phil Harbidge - Independent - Kuala Lumpur

22 years Wellbore Positioning

Well Placement, CA, Risk Assessment, Survey QAQC & Optimization

ISCWSA Webmaster and Survey QAQC Sub-committee Chair,

Drilling Data Quality and Uncertainty Description Sub-Committee

Work : **PDHWellplacement : Intercept, Relief Well, P&A, Wellplacement, Survey Management  
Advanced Survey Corrections, Software Setup,  
Database Audits, Training and more**

Worked :

**Sperry-Sun, Baker Hughes INTEQ and Schlumberger : DD Service Companies  
Marine Surveyor and Civil Engineer and the Planetary Space Science Research Institute**





# Agenda I - Review of work to date

QAQC Subcommittee Activity :

Compile the 4 x word documents into a single document for publishing on the ISCWSA.net website

- Attached are the THREE draft QAQC e-book chapter documents :
- MWD - Chad 22 pages long **ISC 56 October meeting 85% completed**
- Gyro – Ben 19 pages long **ISC56 October meeting 0% Completed**
- DSR – not produced, **use a sanitised version** of the API document or use the minimum data requirements document **ISC56 October meeting 0% Completed**
- Depth – Harald 39 pages long **ISC56 October meeting 0% Completed**

**Request from 5 service companies and USA + International QAQC example documents for MWD, Gyro and Drilling Survey Records for inclusion into the public access QAQC E-book**



# Agenda I a.

- RED highlights are inconsistent with the rest of the API terminology. Basically we are correct and API other chapters are inconsistent with our documentation
  
- 1hr MWD Chapter review – Morten G
  - a. Recap on SHALL / SHOULD / MUST / MAY comments for including in our E-Book
  - b. MWD (& Gyro) pre run setup data examples (4 different company documents) Compile a list of example diagrams and forms for the major service companies to share
  - c. QC data template examples
  - d. Survey sensor Calibration data content examples
  - e. Survey tool calibration report example
  
- 1hr Gyro chapter review – Barry S
  - a. QC data template examples
  - b. Survey sensor Calibration data content examples
  - c. Survey tool calibration report example
  - d. More..



# Agenda II

- **1a. Add introductions to each chapter**
- Use existing intros content in API document, condense/re-word for eBook DRAFT version Phil and Gary made a while ago :
- *“The intention is for this document to form an operationally focused guidance document to help users achieve minimum industry recommended practice requirements.*
- *This is a non commercial document, which has been written in response to industry needs and has been authored by members of the Industry Steering Committee on Wellbore Survey Accuracy – Quality Control and Quality Assurance Sub-Committee and is a public access document. Please contact ISCWSA Education Committee Chair Mahmoud ElGizawy for suggested changes or additions to this document. ”*



# Agenda III

- **State the intended audience :**
  - a. *Survey sensor and calibration facility manufacturers*
  - b. *Survey data service providers and data users*
  - c. *Oil, gas and water operating companies*
  - d. *Government authority employees*
  - e. *Education bodies*
- “
- **1b. Assess the "must" statements in the documentation (see attached)**
  - "Must" statements not conducive for educational material for general audience, so change out the “Must” and “Shall” statements to “should” and “may”
- **1c. Turn DSR document into e-Book content**



## Agenda IV

- **1d. Peer-review documents for eBook audience/intent (currently written for API)**
- See files the 4 attached, named after the team who last edited prior to writing the API RP-78 docs. These docs have been submitted to the API team and are in progress.
- The objective of in-person meetings is to review/edit these documents for an e-Book audience. Once these documents are edited/peer-reviewed, they will be passed along to the Education subcommittee to be converted into a “Manula” e-Book. After they are on Manula, further editing would take place (trimming of content, addition of graphics, etc.) before public release.
- **Phil Harbidge will run the in person QAQC Subcommittee meetings 9<sup>th</sup> March 23 and monthly meetings ongoing, contact details : +60176020657 / philharbidge@gmail.com**



## Additional Projects in the pipeline

- QAQC Parameters Survey Related to New WPTS Error Model (s)
  - FAC
  - Some of the gross errors captured, not capturing all
  - Validation at different levels Accuracy of Corrections as per claimed accuracy for EM used
  - QAQC Software testing project



# Ongoing Meetings

- Monthly Online – TEAMS meetings
- 5 meetings before October 2023 ISCWSA 58



## Thanks to

Manufacturer & Calibration Experts: BenchTree, Scientific Drilling, Halliburton, Gyrodata, Schlumberger, Baker Hughes, Weatherford and JAE, ICE FIELD TOOLS

Operator Experts: Chevron, Oxy, ConocoPhillips, BP, Devon Energy, ExxonMobil, **Shell,**  
**TotalEnergies, Aramco, AkerBP**

Service Company Experts: Baker Hughes, Halliburton, Depth Solutions, Schlumberger, Weatherford, Gyrodata, Scientific Drilling, Mostar Drilling, SuperiorQC, Independent Consultants, EOG Resources, PathControl, Pacesetter Directional ....



# Drilling Data Quality and Uncertainty Description Subcommittee Activity Report

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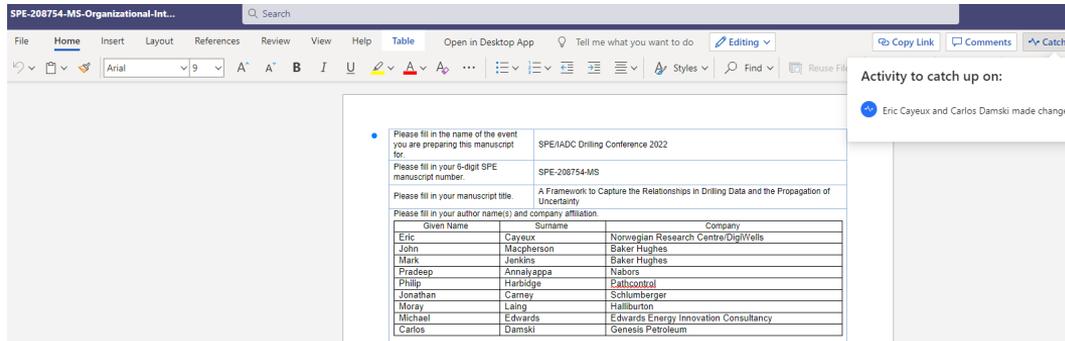
[Phil Harbidge philharbidge@gmail.com](mailto:philharbidge@gmail.com)



# SPE Affiliated “DDQUD” - (DSATS - DUPTS - WPTS Subcommittees)

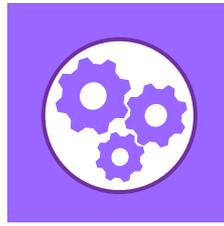
- Standardize the Industry
  - Drilling Data Quality
  - Drilling Data Uncertainty
- Published Free to Public Paper [SPE-208754-MS](#) Peer Reviewed
- Publish use cases [DSABOK](#) & SPE Paper use cases worked up into Semantic Graph and Data Lake

# Paper presented at SPE/IADC Drilling Conference 2022 SPE-208754-MS



Drilling oil and gas wells is a complex process involving many disciplines and stakeholders. This process occurs in a context where some pieces of information are unknown, or are often incomplete, erroneous or at least uncertain. Yet, during drilling engineering and construction of a well, drilling data quality and uncertainty are barely addressed in an auditable and scientific way. Currently, there are few or no placeholders in engineering and operational databases to document uncertainty and its propagation.

USER STORIES // DATA MODELS FRAMEWORK // SEMANTIC NETWORK // DATA LAKE // UNCERTAINTY PROPAGATION INFLUENCE DIAGRAMS and GRAPH THEORY



# Questions?