



Survey QAQC Activity Report

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Phil Harbidge - PathControl, General Manager - Kuala Lumpur
21+ 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 : **PathControl** : **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





API RP-78 Documents Project

- **COMPLETED :**
 - GYRO – 5th meeting Completed issue to API RP-78
 - DEPTH – 9th meeting Completed issue to API RP78
 - MWD – 11th meeting COMPLETED
 - Combined GYRO with MWD 12th meeting COMPLETED
- **COMPLETED :**
 - Directional Survey Records (DSR) API RP-78 2017 rev doc Meeting 13 and 14
 - Survey Records “SOP” for all three documents worked on
 - Reduced to 3 pages, now consistent with Combined, Depth and P7 content



API RP-78 Documents Project Next Actions

- Pete Clark, Jonathan Lightfoot, Ross Lowdon, Adrian Ledroz :
 - Meeting for update on the 4 API RP-78 Chapters Publishing Funding Approval



MWD GYRO DSR & DEPTH QAQC ISCWSA e-Book Project

DEPTH e-book content
re-write

GYRO – e-book content
re-write

MWD – e-book content
re-write

QAQC Minimum
requirements document
to verify and validate
any survey

**Directional Survey
Records (DSR)** content
e-book content re-write

**MSA and MSA ERROR
MODEL
RECOMMENDED
PRACTICE CHAPTER/
DOCUMENT**



DDQU Sub-Committee Activity Report

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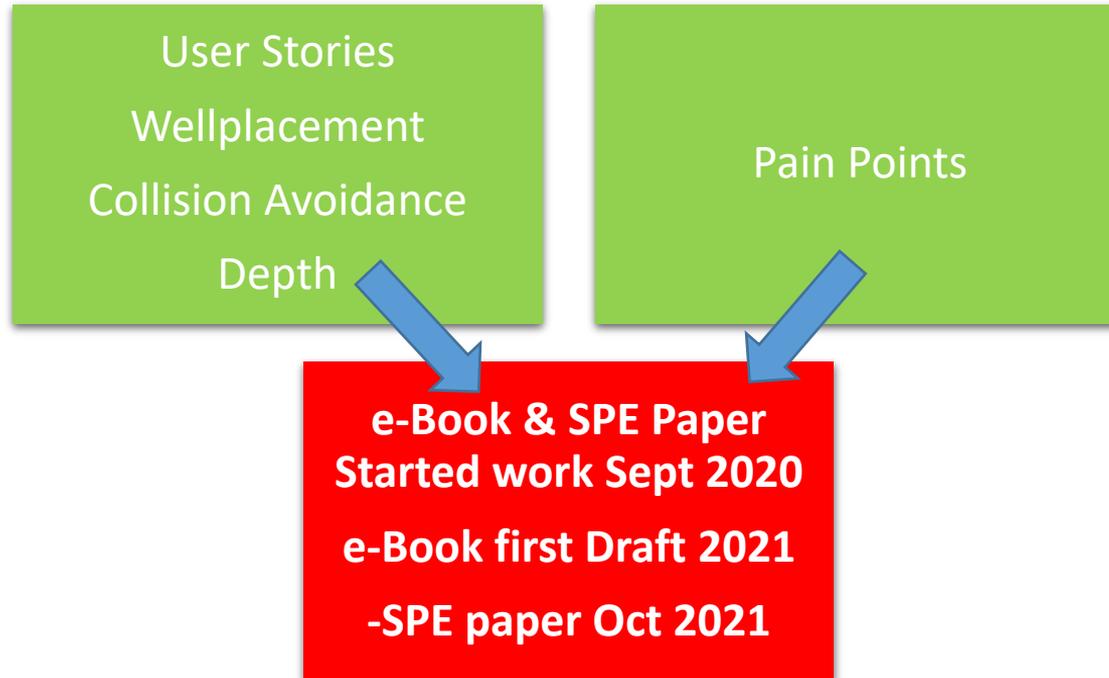


SPE DDQU - (DSATS DUPTS WBPTS QAQC SCs)

- Standardize the Industry
- Drilling Data Quality
- Drilling Data Uncertainty

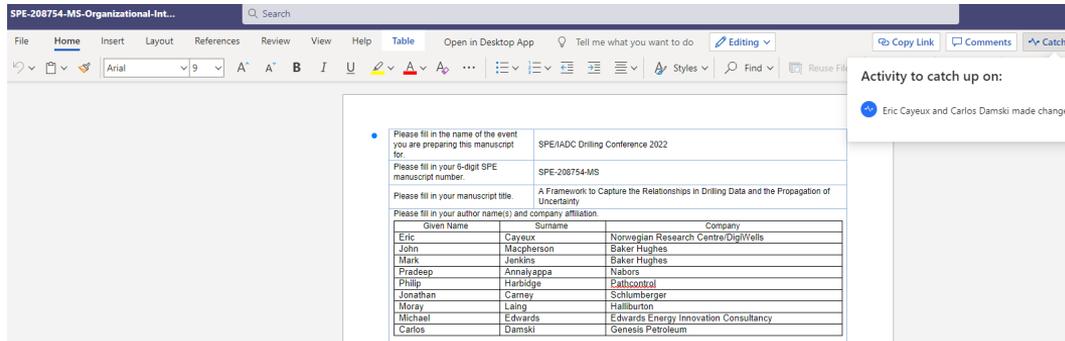


SPE DQUSC



Paper for the SPE/IADC Drilling Conference 2022

SPE-208754-MS



SPE-208754-MS-Organizational-Int...

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Activity to catch up on:
Eric Cayeux and Carlos Damski made changes

- Please fill in the name of the event you are preparing this manuscript for. SPE/IADC Drilling Conference 2022
- Please fill in your 6-digit SPE manuscript number. SPE-208754-MS
- Please fill in your manuscript title. A Framework to Capture the Relationships in Drilling Data and the Propagation of Uncertainty
- Please fill in your author name(s) and company affiliation.

Given Name	Surname	Company
Eric	Cayeux	Norwegian Research Centre/DigiWells
John	Macpherson	Baker Hughes
Mark	Jenkins	Baker Hughes
Pradeep	Arniyalappa	Nabors
Phillip	Harbidge	Pathcontrol
Jonathan	Carney	Schlumberger
Moray	Leing	Halliburton
Michael	Edwards	Edwards Energy Innovation Consultancy
Carlos	Damski	Genesis Petroleum

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

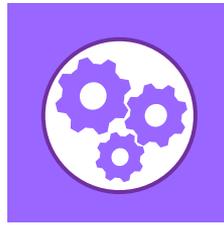


Thanks to

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

Operator Experts: Chevron, Oxy, ConocoPhillips, BP, Total, Devon Energy, ExxonMobil
....

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



Questions