

“Upgrading the Grading: Let’s talk about the progress made and plans forward”

AIR DATE: 9 FEBRUARY 2022

Presented by

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Data Management Work Group Update

Feb 9th, 2022

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- The Team
- Objectives and Charter Statement
- Masterclass Series
- Guidelines documentation
- 'Training Dataset'
- Next steps

Charter Statement

Objectives

Re-design the IADC dull grading system to better support a workflow focused on **root cause analysis**.

Focus on the **development of guidelines** on common digital data formats, storage, and exchange of bit dull grading and BHA codes, digital visualizations, and other metadata about drilling bits, BHAs and the operations

The digital data shall be **usable for machine learning tools** and **real time data exchange on drilling rigs**, at the shop, at universities, and so on.

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Charter Statement

Create a Guideline describing common digital data formats, storage, and exchange methods.

1. Investigate best practices for bit, BHA and surrounding data format (PPDM, etc.), exchange (JSON, REST, XML – DDR Plus, etc.) and propose standard digital format(s) for the workgroup and industry.
2. Investigate best practice to collect and classify digital visualizations such as photos, videos, 3D models, etc.

2021 Data Management Masterclass Series

Date	Presenter	Company	Presentation
April 14	David Shackleton	Independent Data Services	'IADC DDR Plus™ (IADC/SPE-199664-MS)'
April 28	Séan Emery	Trax Electronics	Data Management for Autonomous Digital Dull Bit Grade Forensic Scanner System
May 26	Rana Ahmad	DarkCirrus AI	AI System Design
June 9	Nathan Zenero	Teradata	General data brain grab...
June 23	Tartan Collier	ExxonMobil	Current State & Future Vision for Well Data Management
July 7	John Hanson	Independent Data Services	Capturing Bit Data in the IADC DDR Plus™ Report: Delivering a Searchable Common Database
July 21	Jeremy Kuhlman	Drakewell	Bit Data Management and Tying it All Together
Aug 4	Chaitanya Vempati	Baker Hughes	Drill Bit Dull Grading

Guideline Document

Data Management Guidelines for Bit, BHA and Operational Data

For Reporting, Forensics and Operational Optimization at the Rig, Shop and Beyond

IADC GUIDELINES

0.1 EDITION, December 2021



Guideline Document

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Charter Statement

3. Design and propose to leadership a **searchable, secure, accessible database with bit, BHA & metadata**. Suitable for human and AI/ML training and certification a metadata.
 - a) **Collaborate** with the other workgroups to collect and store example data.
 - b) Advise leadership group and IADC on **storing data** in a manner that can be accessed via a **web Interface** or direct data pipeline (IADC or university hosted?).
 - c) Based on the example data, **create a training dataset** of forensics photos with agreed upon codes
 - d) Divide the training data into two groups:
 - i) Open dataset that can be used by the industry for training purposes (human and AI/ML tools)
 - ii) IADC Confidential data set which can be used to independently verify human training and AI/ML tools

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What still needs to be done?

Collaborate with the other Teams to:

- Determine if proposed changes fit with existing standards, e.g., PPDM, WITSML
- Does existing data management best practice facilitate best case studies / desired workflow?
- Develop the road map for designing, building, and making available the 'Training Dataset'

Data Management Work Group Update

09 Feb 2022

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Questions? And please get involved!

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