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Best Practice for Quality Control, Management and Transfer of Borehole Image and Dipmeter Logs -- Towards an Integrated Workflow

Production problems triggered a joint initiative by NAM and Shell Expro to fully integrate borehole image and dipmeter logs in the subsurface workflow.

Large amounts of these high-resolution data are digitally stored in NAM's RECALL database, however they are rarely fully integrated in 3D static models. This is due to lack of in-house specialists, lack of data transfer procedures and limited functionality in modeling packages.

An inventory of NAM's database revealed that more than 70% of the 460 digitally stored logs are of good quality. Remaining incomplete logs can often be restored in a cost-efficient manner using original data tapes and field prints. Thorough quality control however is prerequisite for use of these complex data. Hence a robust quality control procedure was established, which consists of:

o Check for presence of essential log data curves, such as tool deviation, using a designated RECALL data dictionary.
o Data quality assessment using standardized QC reports.   o Production of data QC report for each image / dipmeter log.

Such quality checked data can be visualized subsequently in spreadsheets and GIS maps using a web-based search tool. This tool gives a rapid overview on data availability at the beginning of each project. Selected imaging log data can then be moved from the database to modeling packages using a detailed data transfer manual.

The established workflow and its application are exemplified with a facies prediction study based on dipmeter interpretation from the Southern North Sea.