



SEA 3D Case Study

ffa Fault Imaging Technology

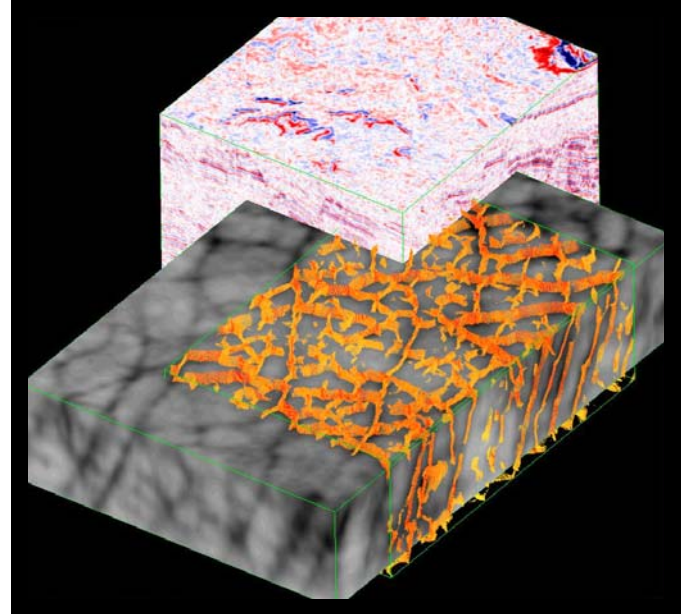
Hydro forecast efficiency improvements in seismic interpretation and geological modelling using ffa's subsurface information volumes

The Project:

The brief was to investigate and compare manual high-density fault interpretations with the subsurface information volumes generated by ffa's fault imaging software & services.

The Volumes:

The reflectivity volume covers an exploration block in the Norwegian North Sea. The area is characterised by a high density of intersecting faults that proved time consuming to interpret using conventional techniques. ffa's FaultAttribute, FaultImage and FaultIn volumes fast-track fault interpretation by detecting potential faults and their likelihood automatically from the original reflectivity cube. No prior interpretation is required. The volumes were created at ffa's dedicated services centre in Aberdeen and illustrate the quality of results achievable by asset geoscientists using ffa's SEA 3D® image processing and analysis software.



FaultImage volume (orange) opacity rendered with FaultAttribute volume (greyscale – highest fault probabilities in black) and original reflectivity cube

The Results:

Hydro concluded that ffa's fault imaging volumes have the potential to substantially improve the efficiency of the fault interpretation and geological modelling work processes.

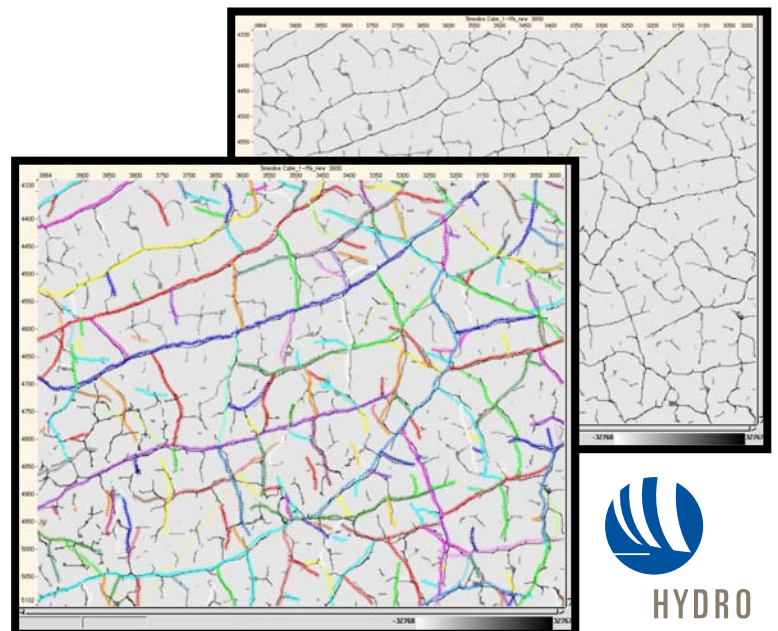
- There was a very good match between the FaultImage volume and the majority of the manual interpretation
- FaultImage was able to highlight faults not picked in the original interpretation due to their small throws. These faults were further investigated and considered for incorporation into the fault model
- ffa's fault volumes provided valuable information about the geometric relationship between branching and master faults.

ffa were able to provide an accurate and detailed overview of the complex faulting within the dataset in days. A process that, when undertaken using conventional techniques, had previously taken Hydro several weeks.

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FaultImage displays high fault probabilities in grey. Manual fault interpretation, when placed onto the FaultImage volume, shows a close correlation with ffa's automated interpretation techniques