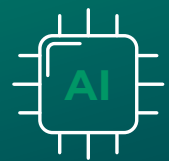


# Integrated Intelligence



The delivery of AI to seismic interpretation workflows

[geoteric.com](https://geoteric.com)

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The adoption of artificial intelligence (AI) continues to grow throughout the energy sector especially in operations. It is time for the benefit of AI to reach the rich subsurface data. Today, interpretation often requires compromise, it is largely accepted there will never be enough time available for interpreters to work through in detail the sheer volume of seismic data. Added to that, it is more important than ever to retain experience, ensuring knowledge of prospects and fields isn't lost.

AI presents a huge opportunity to improve seismic interpretation, especially if used to complement traditional techniques. It has the power to improve the quality, speed and understanding of subsurface data, which is why we've designed an integrated intelligence platform with the boost of AI to assist the seismic interpretation workflow.

## What is integrated intelligence?

Centred around the interpreter, integrated intelligence enables the application of artificial intelligence, machine learning and deep learning techniques to be adopted. Requiring no user knowledge of data science tools or programming techniques, we've done the computer science to let you concentrate on the subsurface.

The most appropriate tools can be selected by the interpreter for the most effective outcome when answering the questions at hand. The entirely customisable workflow is designed to assist the interpreter in a familiar environment, allowing users to do what they do best – interpretation – saving time and improving the quality of results.



# How does it work?

Placing the interpreter in control, the accuracy of the network result can be evaluated by the interpreter on any inline, crossline and time slice in real time. Fault sticks can be automatically extracted on the AI fault attribute to allow users to edit and effectively QC its results.

## Deep integration

Interpreter led changes to the results can be captured within deep learning training, allowing the network to learn from the interpreters and align with their expertise for deployment on the current or future datasets. This network can be applied across different datasets, transferred between regions, basins and epochs for company specific enhanced networks to help deliver more accurate results. To avoid the dangers of anchoring or simplified views of complex systems, multiple networks can be used to develop an understanding and build confidence of the interpretation.

- Accelerate analysis time
- Evaluate confidence of interpretation
- Interact with networks
- Capture individual geoscientist knowledge and experience
- Generate bespoke networks
- Increase operational efficiency
- Minimise traditional interpretation costs
- Maximise exploration and development success

Built to respect and complement the traditional seismic workflow, decision making is consistent with an interpreter's traditional approach and expectations. For example, it is anticipated that fault sticks will be a requirement to enable effective QC.

# Infinite possibilities

Work with us to experience the integrated intelligence workflow and understand the future of seismic interpretation.



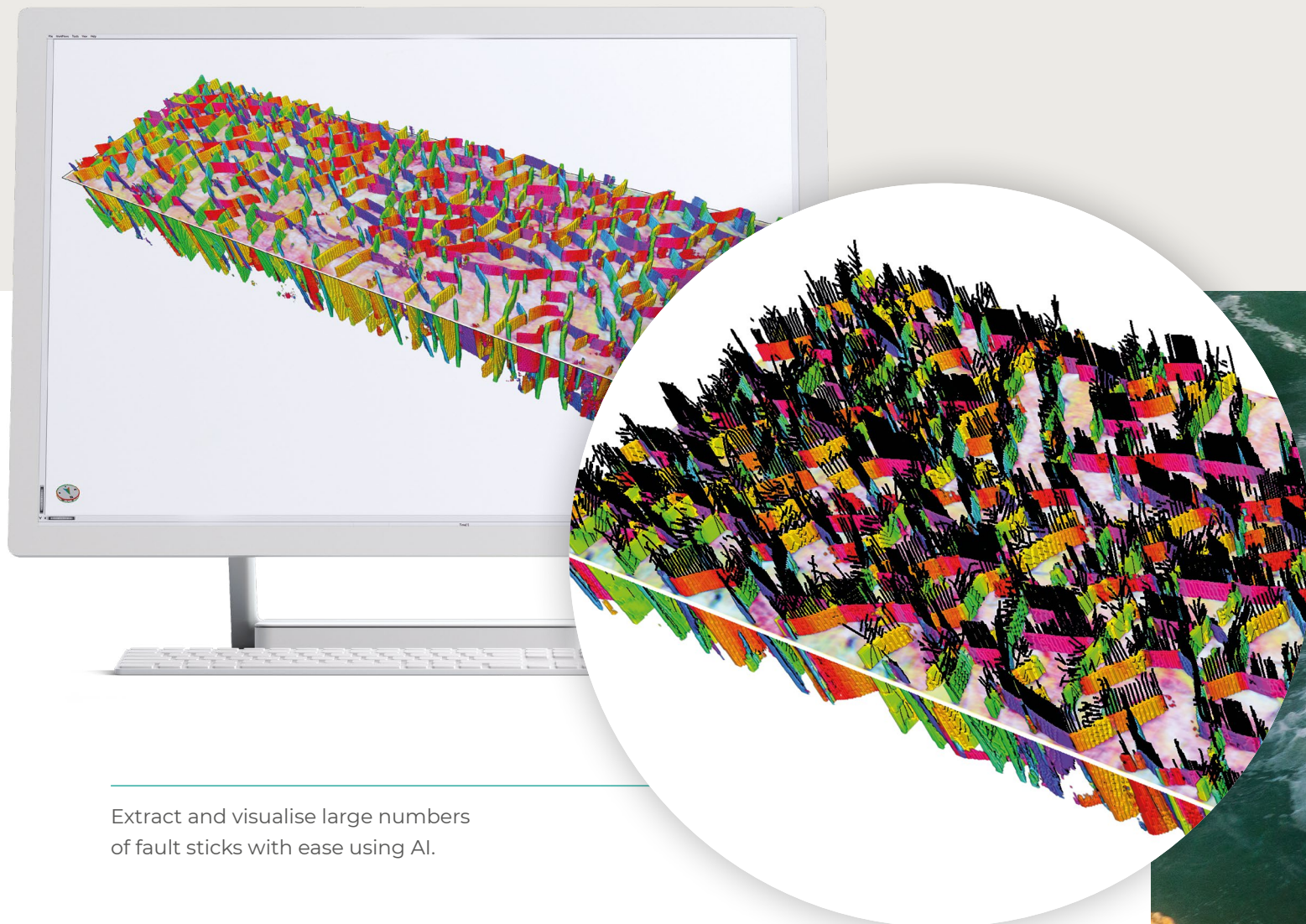
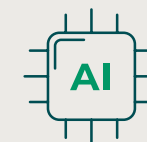
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# Shallow Subsurface

## Faster and more accurate analysis of small-scale faults

Integrated intelligence can take over those tedious, repetitive but necessary tasks - capable of extracting huge numbers of fault sticks if required. Interpreters can focus their time on areas that require those human interpretation skills the most, understanding complex structural details to take operations forward positively.

- Generate fault sticks
- Hazard identification
- Minimised drill risk
- Greater exploration success



Extract and visualise large numbers of fault sticks with ease using AI.

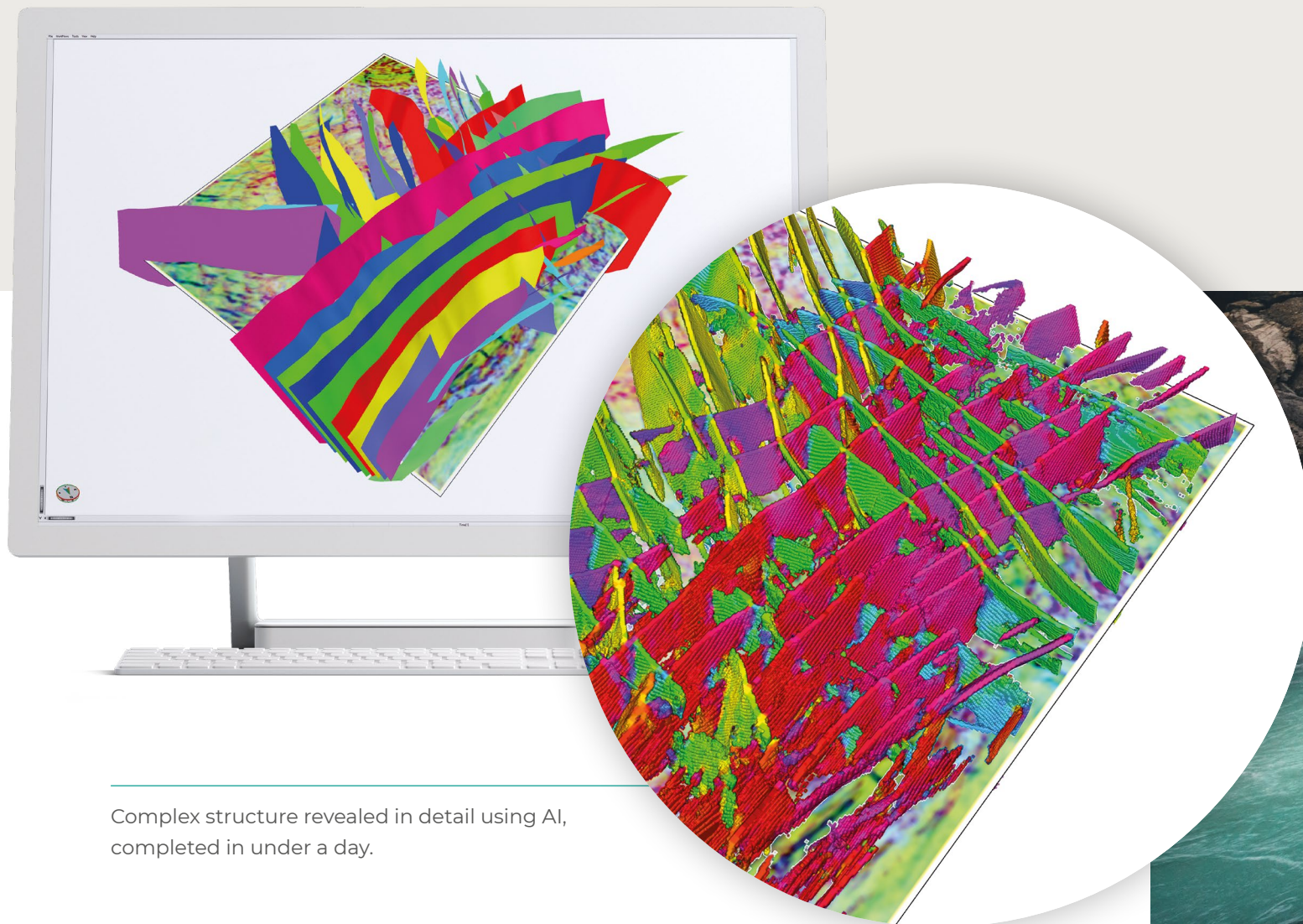
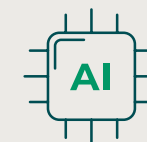


# Anticline

## Effective results without compromising quality

A timely alternative to traditional techniques for more effective exploration, appraisal and development decision making. Original traditional seismic interpretation time seven days (computer image); fault interpretation using AI (circular image) completed in less than a day. Interpreter time is better spent on more complex areas QC'ing individual faults for accurate and appropriate understanding.

- Effective screening assessment
- Quick extraction
- Utilise full data value
- Greater certainty



Complex structure revealed in detail using AI, completed in under a day.

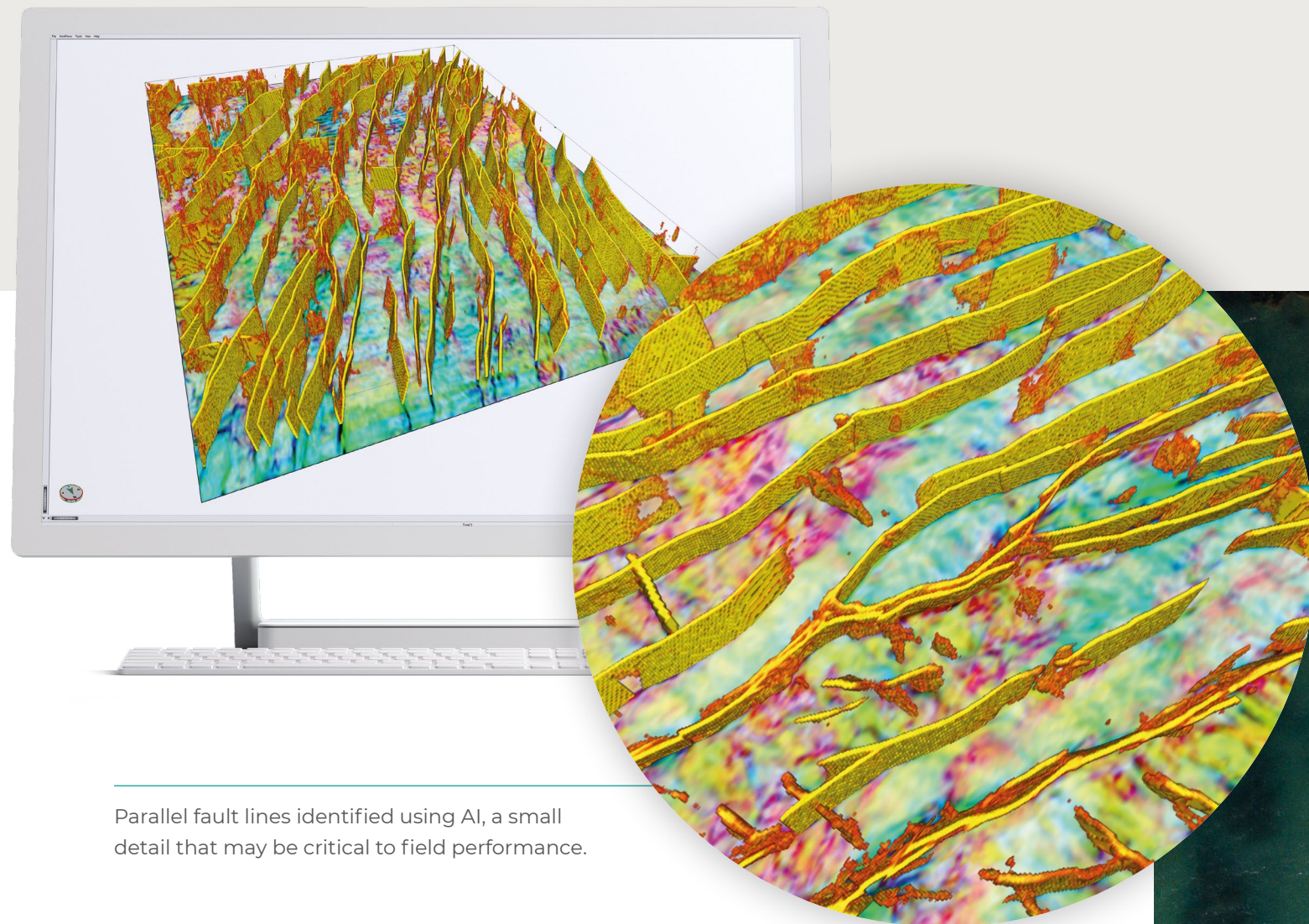
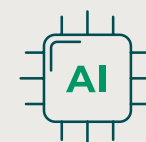


# Complex Tectonic

## Identify and better understand segmentation and connectivity

Enhanced seismic data analysis from fields where production is proving difficult to predict may indicate missing critical elements. Such detail maybe challenging to identify and track using traditional interpretation workflows. Using integrated intelligence quickly and smoothly extract the full value of all your data.

- Identify connected or disconnected volumes
- Understand complex compartmentalisation
- Improved well planning
- Better risk management
- Improved understanding of the regional setting

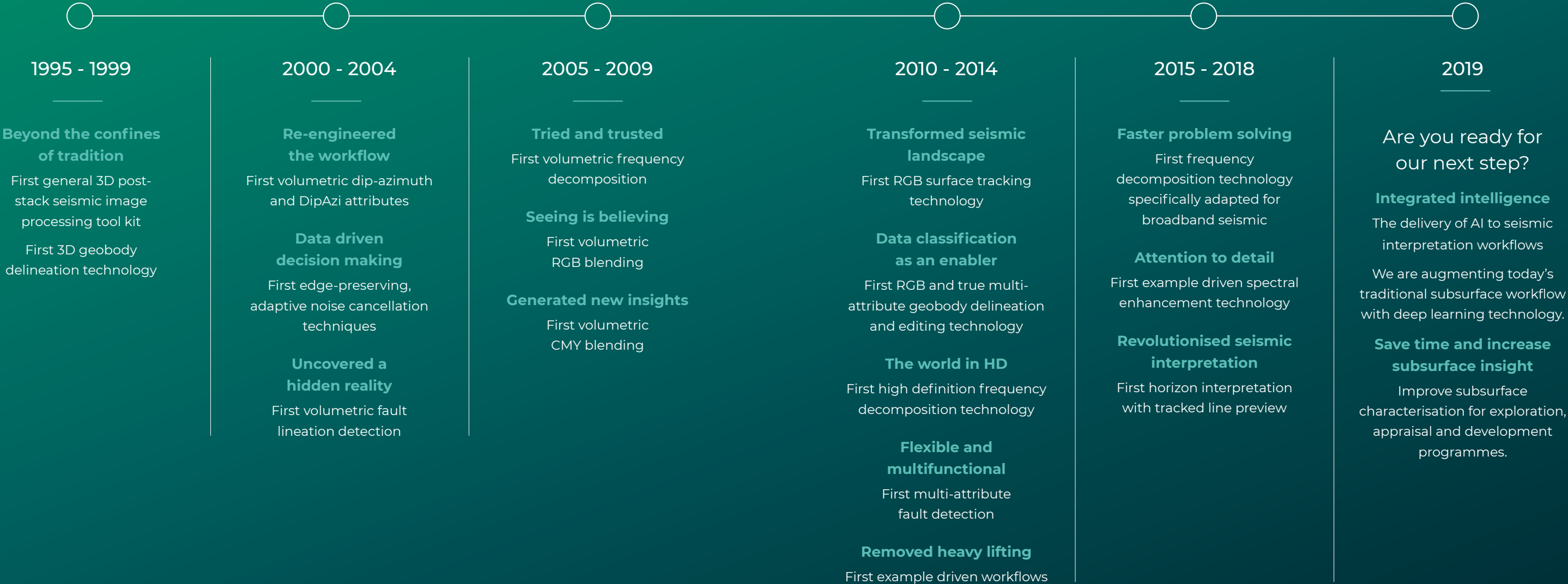


Parallel fault lines identified using AI, a small detail that may be critical to field performance.



# Strong foundations

For over 30 years our pioneering software has revolutionised attribute generation and visualisation. With a background in medical imagery, Geoteric brings with it a pedigree of introducing ground breaking technology.





# Introducing Geoteric 2019.1

With enhanced tools for manual and automatic fault interpretation, Geoteric 2019.1 delivers improved functionality within the Interpret module, complementing our integrated intelligence workflow.

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- **Automated fault stick extraction**  
Fast and easy workflows to reduce time-consuming manual picking
- **Filtering and rose plot**  
Aids in structural regime understanding
- **Fault stick grouping**  
Enhanced user experience for structural model building
- **Adaptive fault stick editing**  
Easy interaction in 2D/3D, reducing click and screen travel
- **'Unassigned' fault picking workflow**  
Fast and efficient interpretation method
- **Performance**  
Quickly extract and visualise over 100,000 fault sticks with ease





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Geoscience Australia and New Zealand Petroleum & Minerals

