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Silixa – acoustic sensing with much less noise

Silixa has developed a fibre optic cable for recording seismic in wells, which is 100x more sensitive than the current Silixa iDAS seismic system, leading to improved imagery of the sub-surface.

UK company Silixa has developed a way to treat fibre optic cable so it is much more reflective – so it can record seismic data in wells with 100 times more sensitivity.

Companies record seismic data in wells so they can monitor what is happening in the reservoir around the wellbore.

One of the first installations is in Australia, where the well is being used to inject carbon dioxide into a reservoir. With repeated seismic surveys, it is possible to monitor the spread of the CO₂ plume within the reservoir. The CO₂ does not show up directly on the seismic image, but shows up indirectly, as extra distortion on the image.

The well is near Melbourne, run by the Otway Research Facility, part of research organisation CO₂ CRC.

The company has been selling IDAS services for four years on over 80 wells, onshore and offshore.

This newly developed technology is called “Carina” that increases the sensitivity by 20 dB.



Silixa's Mick Longton

Silixa does not disclose the details of how it is treating the fibre optic cable, but the result of its treatment is that more of the light going through the fibre is reflected by the seismic events. This allows the upgraded laser interrogator to deliver the improved sensitivity signal.

Silixa in general is seeing growing interest from the industry in installing fibre optics in wells for permanent reservoir monitoring.

For seismic monitoring however, it is much cheaper to trench the fibre at surface, than install in a well, says Mick Longton, com-

mercial director of Silixa.

The fibre optic system provides a geophone equivalent repeatable seismic recording at a much cheaper cost than using geophones down the well on wireline, which to date has been the standard way to record seismic inside wells.

The technology might make it viable to do permanent monitoring on some wells for the first time – it would probably be too expensive to monitor something like CO₂ injection using conventional surveys, he says.

The challenge now becomes changing industry culture – because the industry is very accustomed to recording well seismic using geophones on wireline. “Is the industry open enough to recognise a geophone isn't the only answer?” Mr Longton asks.

Silixa uses its fibre for a range of different areas in the oil and gas industry, including frac operations and monitoring well integrity. It also has a business unit focusing on other industries, with applications such as leak detection, power cable monitoring, and flowrate measurements.

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Find information on your computer like articles on eBay

In the oil & gas industry opportunities are missed and unnecessary risks taken because digging key information from reams of legacy documents takes too long.

Pinker, a low cost software tool, allows you to find information on your own computer as easily as finding articles on eBay. It was developed by Pinkerfind UG, a company based in Dresden Germany.

Taking the same approach as eBay in terms of using categories and filters to refine your search, Pinker lets you define your own categories called “topics”. (Technically, Pinker allows you to incrementally build ad-hoc ontologies and use them to speed up the search process.) As you apply filters, Pinker shows how many files match each of your topics, so you can quickly narrow down your search.

You can save useful combinations of filter settings and use them again the next time you look for the same or similar documents. This is akin to creating “logical folders” based on topics, independently of where files are stored.

“Pinker was not designed specifically for the oil and gas industry but I believe the industry could find it very useful for data room screening or sifting through legacy documents when decommissioning”, says Christoph Ramshorn PhD, co-founder of Pinkerfind and a former consultant and scientist with Petrotechnical Data Systems

BV and Schlumberger. “Pinker search is fast and flexible. It can even deal with homonyms (two words spelt the same but with different meanings) such as “article” in the header of this article. And you don't have to upload your data anywhere.”

You can install Pinker on your own PC and index the drives and folders of your choice - including USB, network, and cloud drives. Free trials are available from the website www.pinkerfind.com.

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