Paradigm’s volume-based subsurface modelling

Oil and gas E&P software company Paradigm reports a big take up of its SKUA volume-based subsurface modelling software suite in 2013.

It also has advanced tools that give you a better sense of your uncertainty, both by keeping track of the amount of uncertainty in your data as the modelling progresses, and by tools that test your current model to see if it would make sense if (for example) the faults were placed in a different position.

“Understanding uncertainty in subsurface models should go a long way in helping oil and gas companies make smarter investment decisions in exploration wells,” Mr Chakrabarti says.

The software has many tools for automating subsurface processes, so they can be done faster and with less need for expert knowledge. “The software does not go as far as to give a 25 year old the same modelling capability as an experienced 55 year old, but is aiming to move in that direction,” Mr Chakrabarti says.

SKUA makes it easier to incorporate well log data in your subsurface models, something which is becoming increasingly difficult as the amount of well data increases. “People have more well data than they are able to digest and use in their models,” Mr Chakrabarti says.

Well data is very important for modelling because it is the only information from the subsurface that you can be sure about, he says. “If you have very little well data, you're effectively peanut buttering that little bit of information across the vast areal extent of your model. You’re saying, ‘I’ve got a well bore - 18 inches of ground truth, and I’ll spread that like peanut butter across tens of kilometers,’” he says.

“But if you have data from many wells, you say, ‘Well 1 looks like this, the information with Well 2 has shifted, what does that mean for the ground in between?’” he says. “It lets you add information properties in a much more intelligent manner.”