

Cycle Time Reduction in Salt Model Editing

The Challenge

A national oil company in Western Europe runs exploration in a large block offshore of the west coast of Africa. In order to image potential prospects below salt, they needed to interpret the salt envelope precisely.

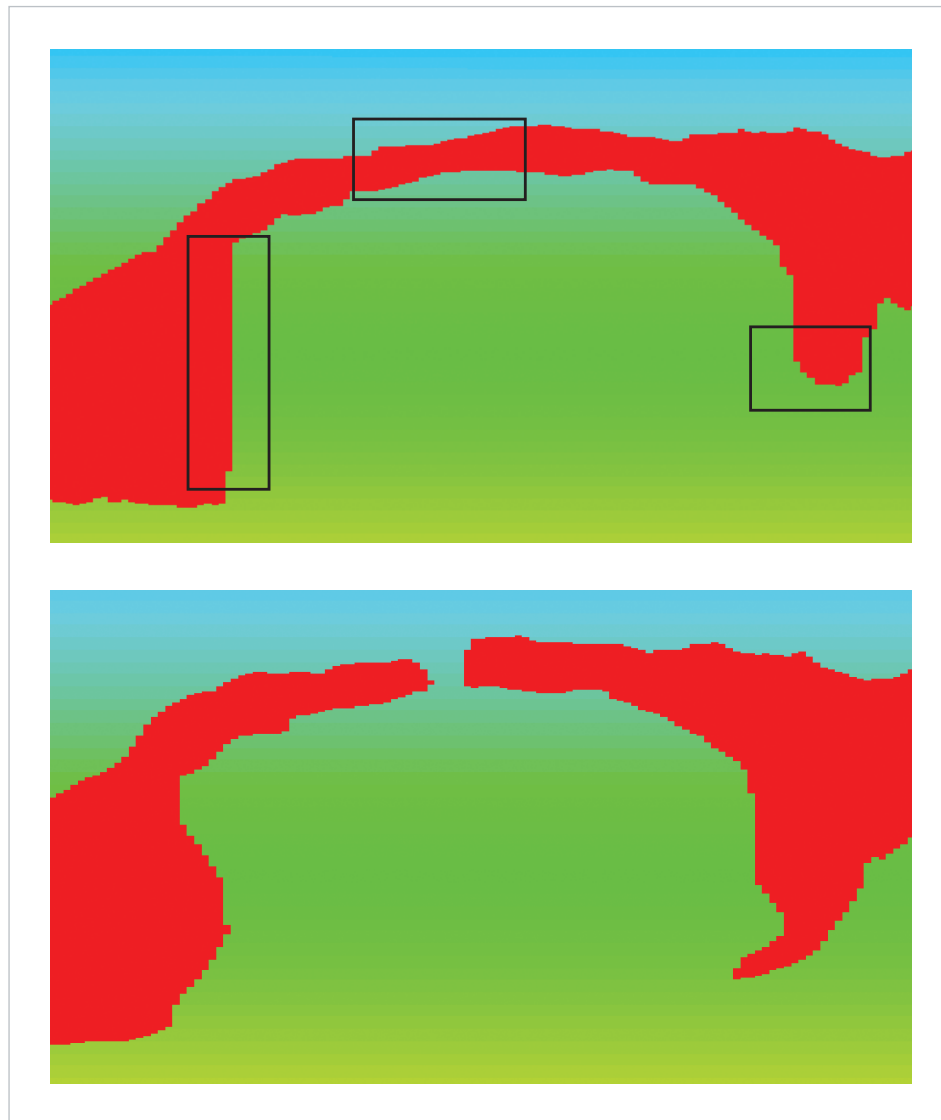
The Assessment

To process each iteration of the salt model and subsequently update the velocity model took one geoscientist up to one month.

A single iteration included over fifty editing steps per patch area. Time constraints necessitated the customer limiting the total number of iterations to only three or four, resulting in vague or blurry images representing the areas below the salt. Unfortunately, this salt editing method resulted in unacceptable uncertainty levels for the well planning process.

Velocity
Model
Update:

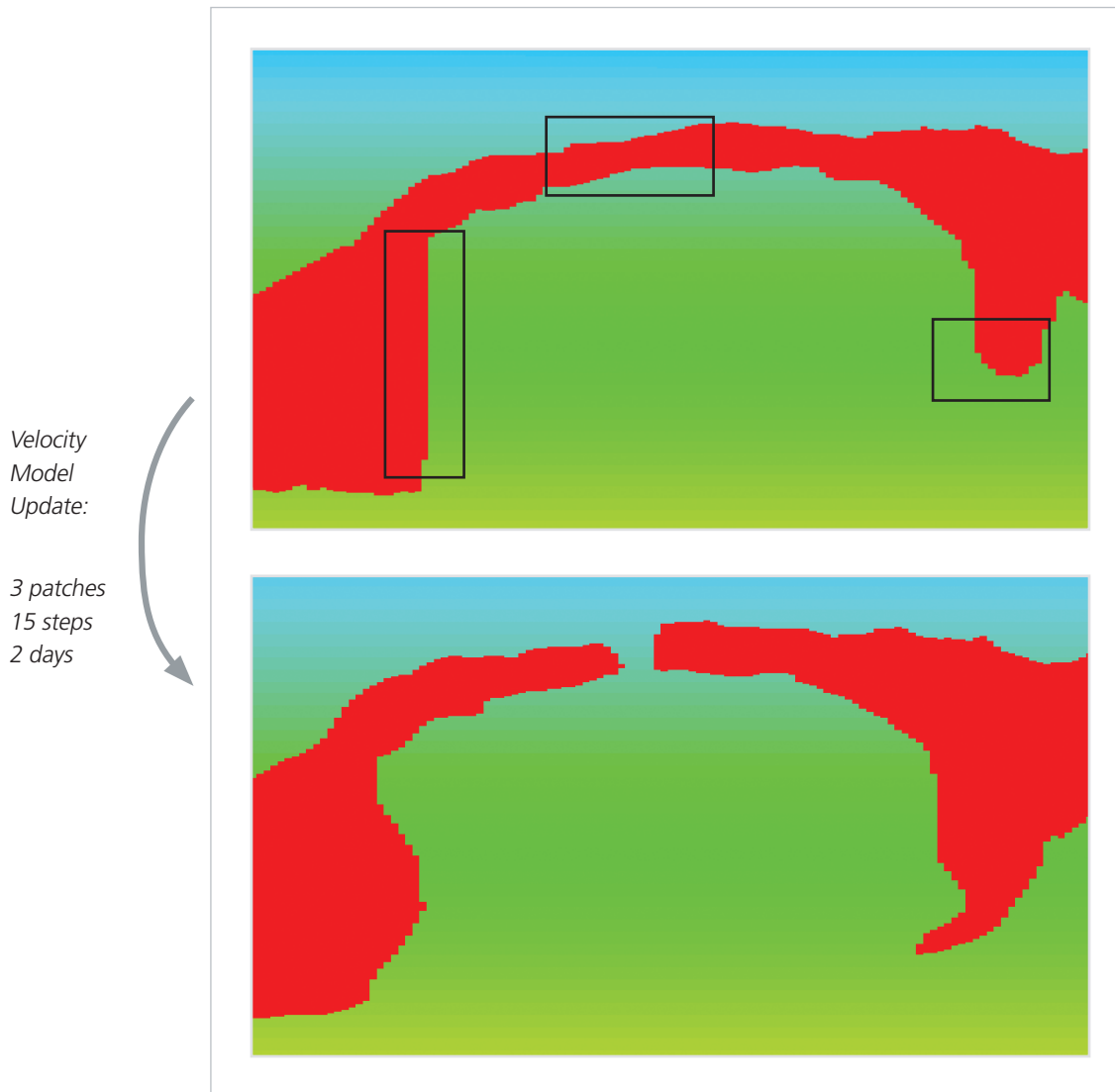
3 patches
150 steps
1 month



The Solution

To address the customer's salt editing challenge, Paradigm imported the seismic and velocity volumes into Paradigm™ GOCAD®, which enabled the use of a triangulation methodology to create an editable salt model.

The GOCAD workflow-driven approach can be customized to apply a company-recommended methodology or to simply create a new, modified workflow. This workflow enabled the customer to reduce the number of steps from over fifty per iteration to just five.



The Results

The oil company applied their salt editing methodology using GOCAD customizable workflows. As a result, the time required for each iteration was reduced from one month to two days. As well as being a much more effective use of an experienced geoscientist's time, the quick turn-around allowed for more iterations to be performed in the time available, producing a

more detailed result that reduces the uncertainty in the well planning process.

The value to the company was two-fold: getting the best subsurface resolution out of the seismic data they had acquired, and identifying with confidence the location of a well costing tens of millions of dollars, to test the viability of a sub-salt prospect.