

Time-to-Depth Conversion

Release

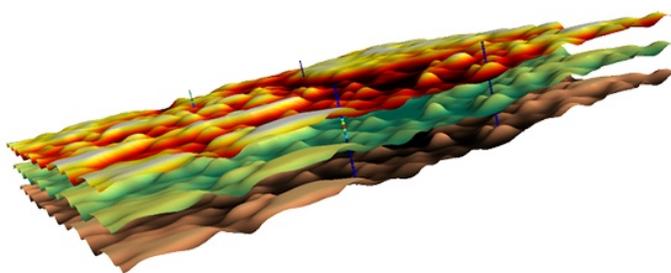
How Geovariances and partners make evolve Time-to-Depth Conversion.

End of 2015, Geovariances committed to building a new sophisticated tool for Time to Depth conversion. The challenges took up by the consortium partners are multiple. Among others: to offer an easy-to-use and fast software package (but not a black-box), with more choices in conversion parameters than the current solutions, to allow uncertainty characterization, to enable faults to be taken into account, to provide a solution that can easily be embedded in a bigger workflow.

Geovariances has already relevant experience in building Time to Depth conversion software, in particular with Isatoil development, but this new potential tool will far exceed the former package. In fact, the new tool that will derive from the UncerTZ research will present several unheard features in any of the software packages currently available on the market. Our aim is to offer scientific and technical innovation in the field of reservoir modeling embedded in an easy-to-use software package.

For the purpose, Geovariances assembled a team of developers and scientists and brought Mines ParisTech to the consortium, gaining the necessary Research and Development capability that would enable us to get to the point where we are today. We have met experts in reservoir characterization and geophysics, debated with our Consortium partners and, point by point, decided which methodologies and what parameters a user would need to have full control of for the Time to Depth conversion procedure. From the list that came out of those deliberations, we had to think of a way of transforming the complexity of the science into an easy to use toolbox which enables the user to fully build a scenario for Time to Depth conversion in mere minutes. And re-use it. And edit it. And fine tune it. And document it.

This is achieved by a shift in paradigm in software usability. We started playing with the idea that perhaps most things could be done automatically. And the user should only spend time in fine tuning the parameters that are of interest for its study. So, we came up with this crazy idea. Users select the seismic surface interpretations to convert



to depth and our tool will automatically compute the defaults and make the process ready to run. If users do not agree with the default settings, they will still have full control of the parameters.

Note that two main depth conversion approaches will be available in the new package:

- a fully sequential approach which converts each time horizon one after the other – but this could lead to error propagation since the uncertainty of the first horizon will pass to the second one, and so on;
- a global approach which converts time horizons of a given group all at once;
- and a hybrid approach, some layers being converted sequentially, some other ones being converted jointly.

In the end, the UncerTZ package will be more than a depth conversion package. It will also help users solve a myriad of problems in the Time to Depth Conversion field of science. It will offer pre-processing tools to check the quality of the input data and propose corrections and post-processing tools to analyze uncertainties, calculate reservoir properties or just document results; or tools that allow users to experiment and come up with their own, optimal, Time to Depth Conversion. And above all, it will leave plenty of time to focus on the important aspects of the problem users try to solve. This still ongoing effort to provide the market with an easy and intuitive experience founded on a solid science, has already proven to be fruitful. During the last meeting held in August, our Consortium partners shared their satisfaction for both the results we keep obtaining and the vision we have about the final product. 