## Geological Modeling Workshop for Integrated Reservoir Studies

The Objective is the Field – The Software is a Tool

### Overview

<table>
<thead>
<tr>
<th>5 days</th>
<th>RCM/GEOMODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVEL</td>
<td>Knowledge</td>
</tr>
<tr>
<td>PURPOSE</td>
<td>This course provides participants with an understanding of all data types needed to build a reservoir model (seismic, geological, petrophysical and dynamic) and a clear understanding of the techniques related to reservoir modeling.</td>
</tr>
</tbody>
</table>

### Learning Objectives

Upon completion of the course, participants will be able to:
- recognize the techniques and challenges related to reservoir modeling (focus on reservoir properties),
- build required competencies for reservoir geoscientists to analyze a specific dataset and construct a reliable static model,
- apply the workflow for building a reservoir model using dedicated software,
- identify the uncertainties and assess them in order to reduce the risk and optimize the investments.

### Ways and Means

Interactive presentations and hands-on activities using software dedicated for reservoir modeling (EasyTrace™ and Petrel™).

Software used during workshops: with courtesy of Beicip-Franlab and Schlumberger.

### Learning Assessment

Knowledge assessment with multiple choice questions.

### Prerequisites

No prerequisites for this course.

### Agenda

**Basic Principles - Reservoir Characterization Workflow**

- Introduction and objectives.
- Case study: field presentation.

**Project Organization**

- Project definition.
- Data QC and summary table.
- Data management.
- Well data loading.
- Manipulating scripts and Excel™ macros.

**Structural Modeling**

- Structural context.
- Well correlation and stratigraphic data analysis.
Constraining static model with dynamic data.
Generating surfaces.
Picking horizons and faults on seismic.
Reservoir layering.
Structural modeling.
Mapping reservoir structures.
Modeling results QC.

**ROCK-TYPING & PROPERTY MODELING**
Scaling up logs. Comparison with rock-types.
Geostatistical tools.
Facies modeling. Rock-typing (EasyTrace™).
Petrophysical modeling.
Mapping result for QC: gross thickness, N-t-G, reservoir properties.

**VOLUME CALCULATION**
Volumetrics: quantification of accumulation for selected parameters.
Sensitivity study on parameters.
Key parameters determination for risk assessment.

**SUMMARY, SYNTHESIS & WRAP-UP**