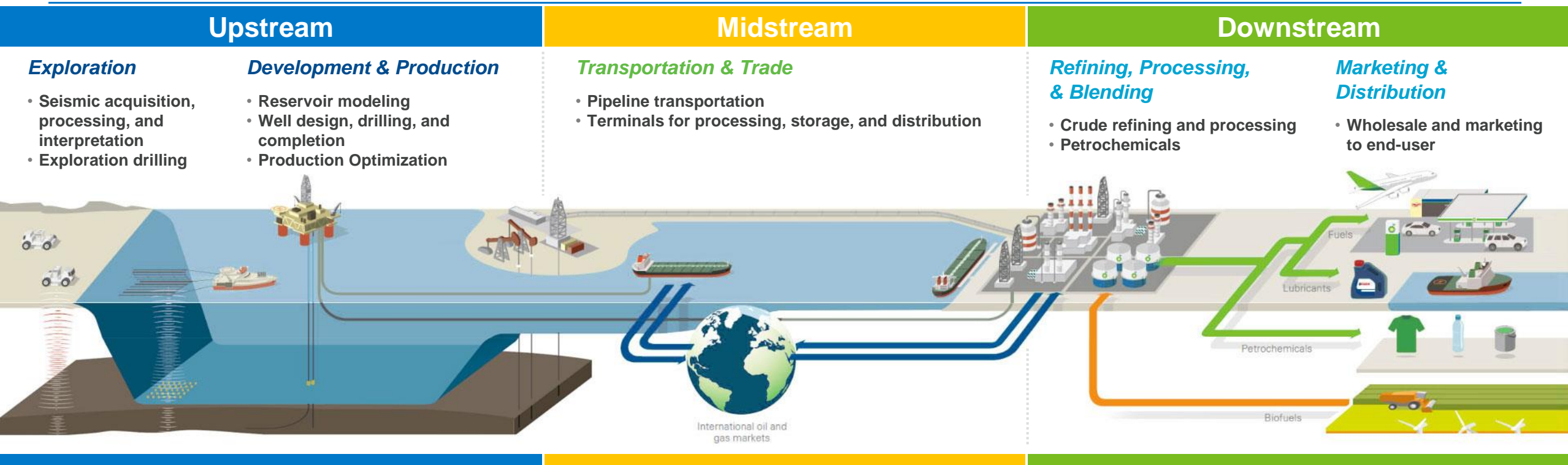


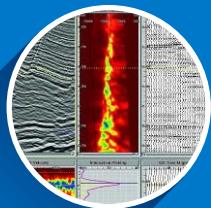
AspenTech Subsurface Science & Engineering (SSE) Geolog

AspenTech Oil & Gas Value Chain

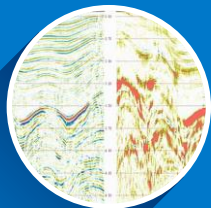
Subsurface Science & Engineering Software



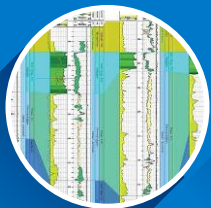
Subsurface Science & Engineering Software



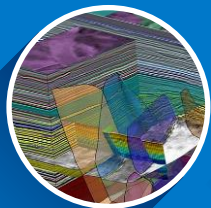
Processing & Imaging



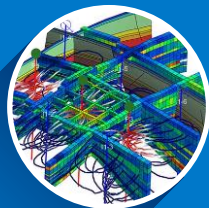
Interpretation



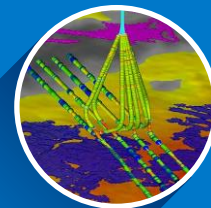
Formation Evaluation



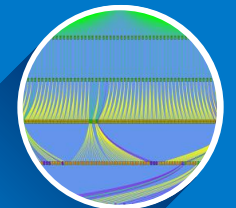
Geologic Modeling



Reservoir Engineering



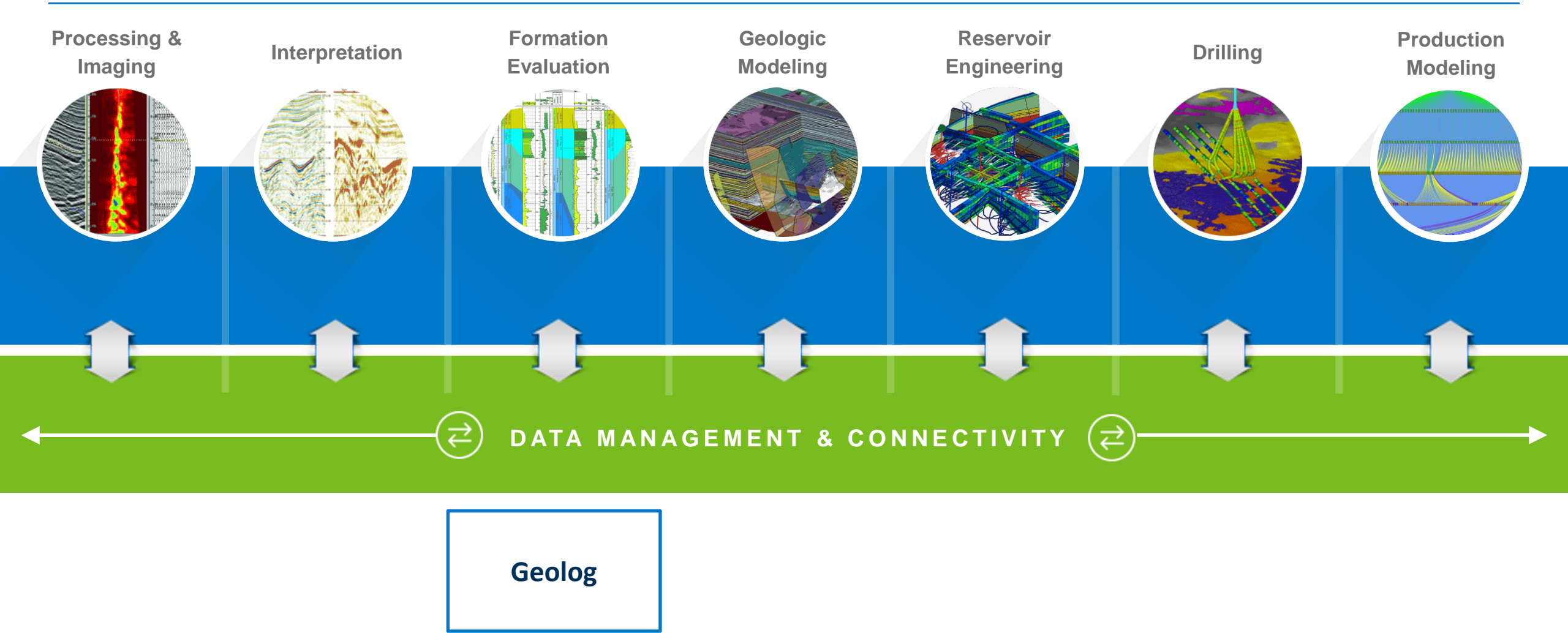
Drilling



Production Optimization

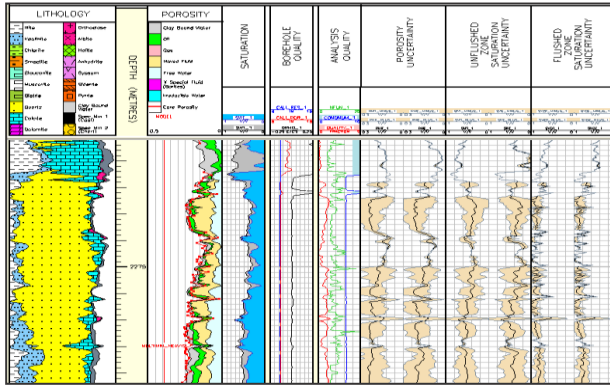
Subsurface Science & Engineering Portfolio

Formation Evaluation – Anchor Product



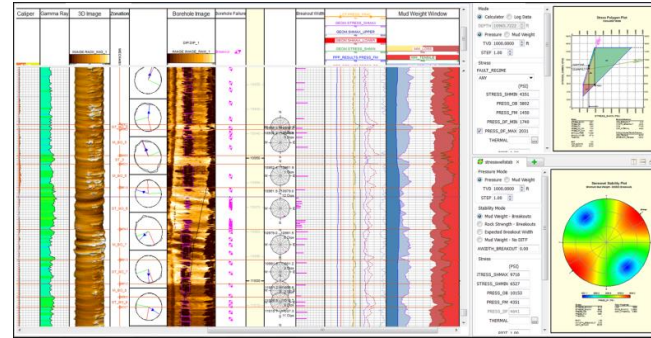
Subsurface Science & Engineering – Formation Evaluation Geolog

Petrophysical Analysis



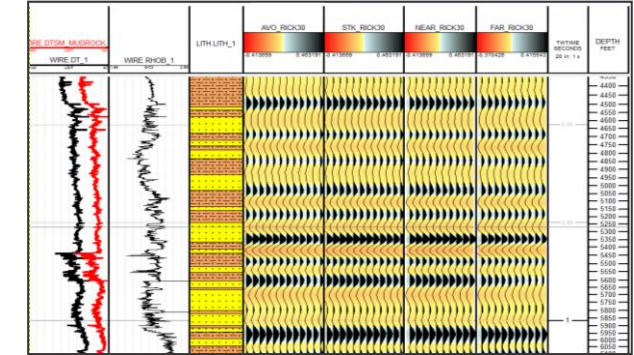
- Dedicated toolkits for both deterministic and optimizing petrophysical solutions. Calculation of porosity, saturation, mineral volumes and permeability, etc.
- Dedicated workflows for thin bed petrophysics and shale analysis
- Quantify and qualify uncertainty throughout the petrophysical analysis

Engineering Geomechanics and Well Integrity



- Estimate overburden, pore pressure and fracture pressure at the well bore
- Evaluate geomechanical rock properties to predict wellbore failure, determine optimal drilling trajectories and mud weights
- Assess the mechanical condition of casing in addition to cement evaluation using sonic, ultrasonic and radial bond log data

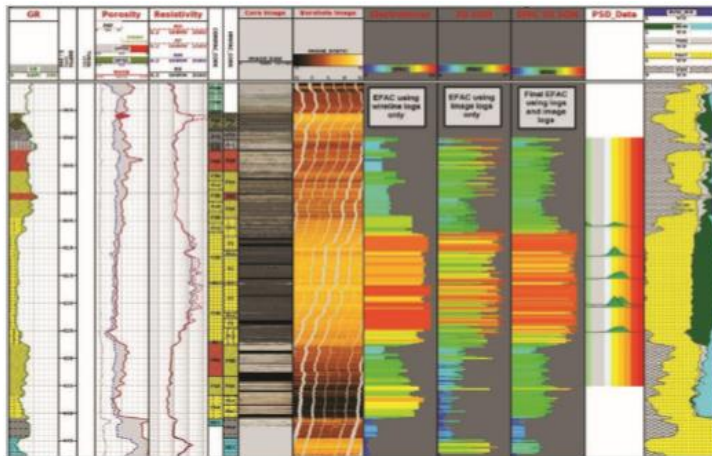
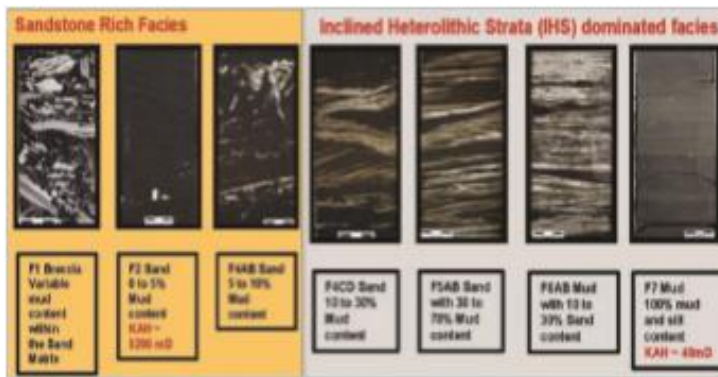
Geology and Geophysics Cross-Discipline integration



- A geophysical tool kit for creating synthetics, evaluating rock physics and fluid substitution
- A comprehensive borehole imaging analysis and interpretation workflow for interpreting structure and textural analysis
- A best-in-class solution for cluster analysis, machine learning and electrofacies determination

Subsurface Science & Engineering – Formation Evaluation Geolog – Customer Success Story

High-Resolution Permeability from Borehole Image Logs and Electrofacies Reveals Previously Undetected Features



Challenge

- A model for subsurface rock permeability had been created based on the results of Steam Assisted Gravity Drainage (SAGD)
- The development wells were drilled based on the reservoir model, though the actual results did not conform to expectations, causing the company to lose valuable time and money.

Solution

- Borehole Image Log Analysis combined with Geolog Facimage electrofacies analysis, found interbedded heterolithic strata (IHS) which are 2ft or less in thickness, that were missed in the original analysis and could have proven to be barriers to production and well performance.
- By integrating core data, conventional wireline logs, temperature logs, borehole images, reservoir saturation logs with time lapse 4D seismic helped optimize production strategy.

Result

- Using high-resolution permeability curves in the 3D static reservoir model helped improve reservoir simulation results.
- Accurate prediction and location of thin IHS beds improves predictability of steam rise within the reservoir, thus improving reservoir production performance.

The background of the entire slide features a person in silhouette, seen from behind, with their arms raised towards a large, glowing digital globe. The globe is composed of a network of white lines and dots, with a bright light source behind it. Scattered around the globe and the person are several hexagonal icons containing symbols for science and technology: a cloud, a beaker, a leaf, a globe, a mountain, a chemical flask, a laptop, a CO2 molecule, and a circular flow diagram. The overall color palette is a mix of deep blues, oranges, and yellows, suggesting a sunset or sunrise sky.

Subsurface Science & Engineering Software Geolog

Learn more: www.aspentech.com/sse

Contact us: EPSinfo@emerson.com

