

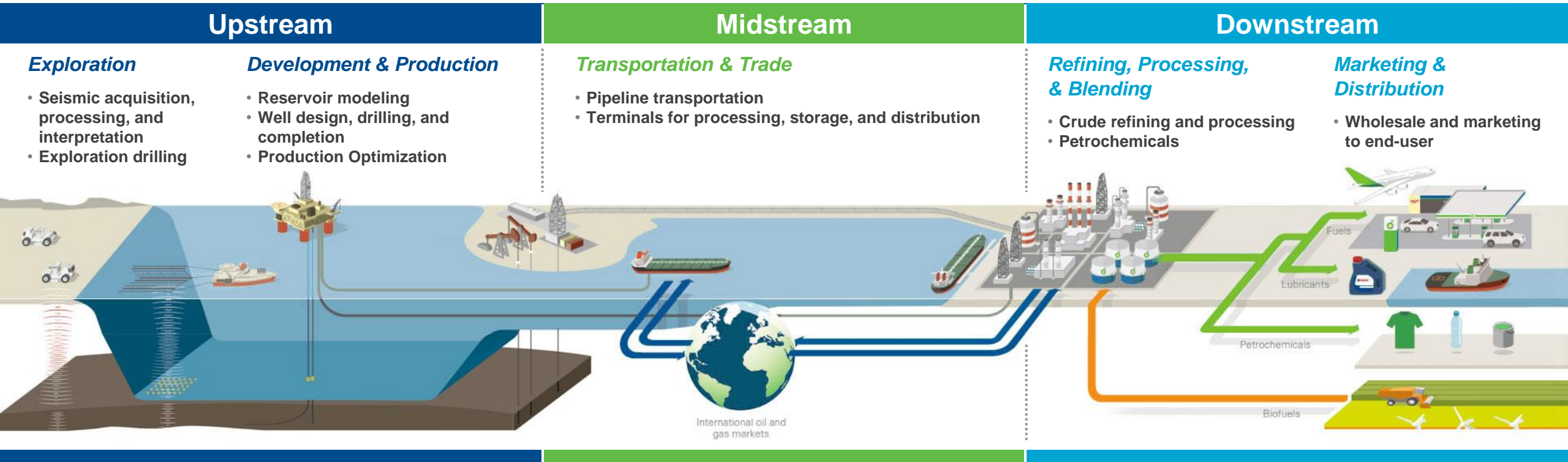
# Emerson E&P Software GeoDepth

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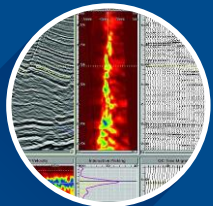


# Emerson Oil & Gas Value Chain

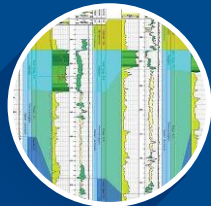
## Exploration and Production Software



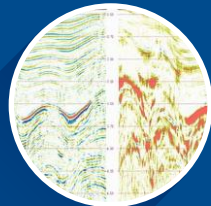
## Exploration & Production Software



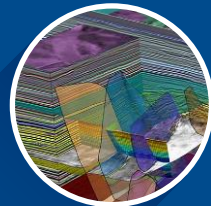
Processing & Imaging



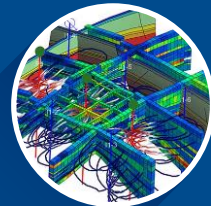
Formation Evaluation



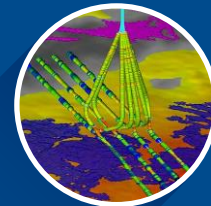
Interpretation



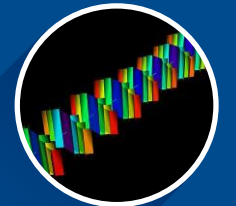
Geologic Modeling



Reservoir Engineering



Drilling

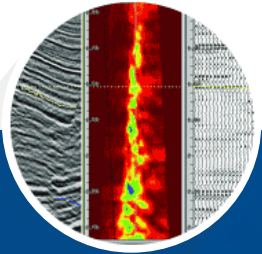


Production Optimization

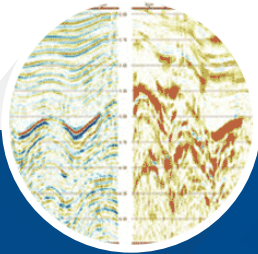
# Emerson E&P Software Portfolio

## Seismic Processing and Imaging – Anchor Products

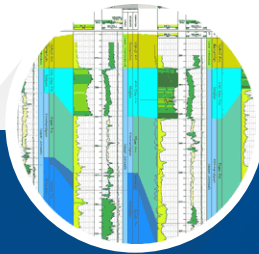
Processing & Imaging



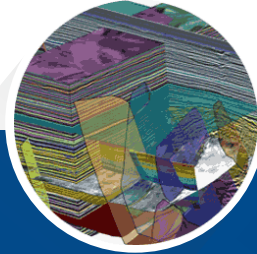
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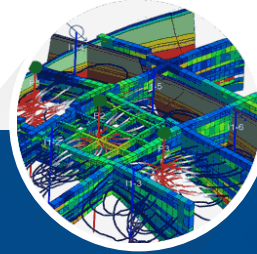
Formation Evaluation



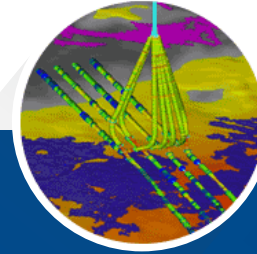
Geologic Modeling



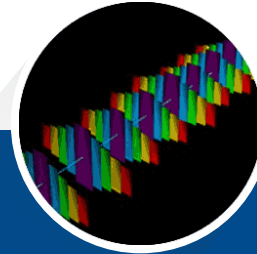
Reservoir Engineering



Drilling



Production Modeling



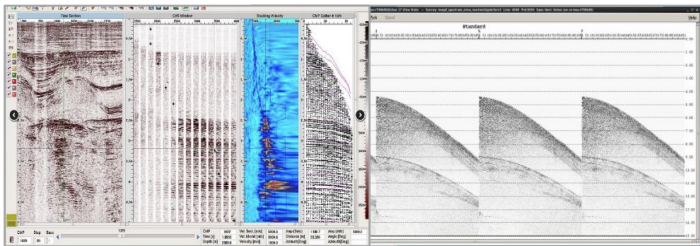
DATA MANAGEMENT & CONNECTIVITY



Echos  
GeoDepth  
EarthStudy 360

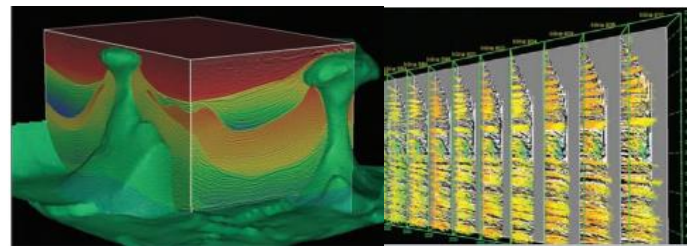
# Emerson E&P Software – Seismic Processing and Imaging Anchor Products - Shared Epos Infrastructure

## Echos Seismic Processing



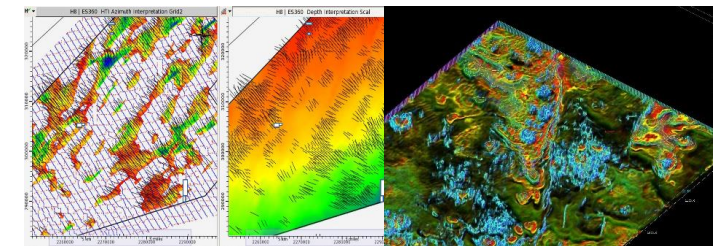
- Geophysical integrity obtained in 40 years of customer use
- State-of-the-art seismic processing and imaging solutions, including SWAMI, SRMA, 5D Data Reconstruction and RTM
- Open system with software development toolkits for client customization
- A highly efficient parallel framework and infrastructure for cluster optimization

## GeoDepth Velocity Model Building and Imaging



- A complete suite of interactive and batch velocity analysis and refinement tools to handle a full range of seismic imaging problems
- Easy construction of 2D and 3D velocity models, regardless of structural geology complexity
- Tightly integrated with interpretation and modeling tools to bring together the geophysical and geological model

## EarthStudy 360 Full Azimuth Imaging and Analysis



- Maximizes knowledge on geological structure and reservoir properties from seismic data.
- Delivers high-resolution reliable information on principal reservoir properties (fracture stress and orientation) for EOR.
- Optimizes ROI for deep water, unconventional shale resource plays, fractured carbonate reservoirs, and fault sealed traps.

# Emerson E&P Software – Seismic Processing and Imaging GeoDepth

## Robust and accurate velocity model building and imaging workflows

- Rich functionality toolset for initial velocity model building.
- Supports all types of acquisition and survey geometry; land, marine, OBC, VSP, 2D, multi 2D and 3D, narrow/ wide and full azimuth.
- Industry leading ISO/anisotropic Tomography workflow for 3D, 2D and multi-2D data, for models of varying complexity, honoring seismic and well data as well as geological constraints.
- Sophisticated QC options at each step of the workflow for inputs, parameterization and outputs, for better tomography and imaging set-ups.
- Kirchhoff migration (2D, multi 2D and 3D), as a fast, robust and reliable imaging solution.
- Rich toolset of depth gather post-processing operations.

## Enhanced productivity and efficiency

- Optimized for running on very large datasets, highly parallelized.
- Fault tolerant solutions – in cases of cluster downtime
- Automated multi-line 2D workflows for handling 100s of 2D lines
- Supported on cloud – can take full advantage of cloud elasticity

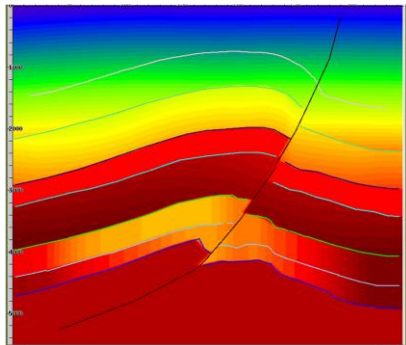
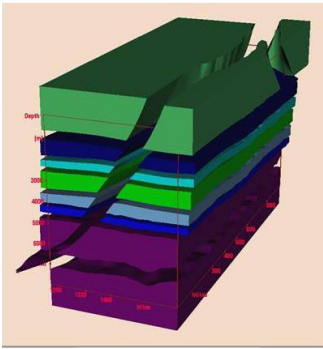
## Workflow integration, processing interpretation, modeling and QSI

- Fully integrated with Processing, Interpretation and QSI environment, allowing easy data sharing between the domains and optimized visualization modes.
- Links to the modeling platform for creating geologically constrained velocity models
- Easy to add third-party applications or internal IP and scripts

**Extract maximum information from your seismic data**

# Emerson E&P Software – Seismic Processing and Imaging GeoDepth – Customer Success Story

## Velocity Modeling and Depth Imaging in Onshore Pakistan



### Challenge

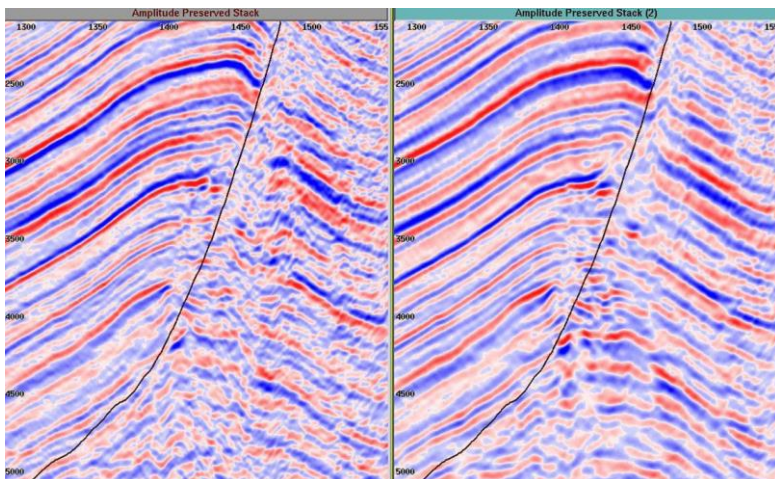
- Development drilling programs for a producing reservoirs in close proximity to major faults require accurate, high-resolution seismic images of the subsurface both for volumetric calculations and for precise positioning of the fault for optimal production impact of development wells.
- High-resolution seismic images require a subsurface velocity modeling and analysis system that accurately represents the complex subsurface geometry and the velocity variations associated with complex layered and faulted structures.

### Solution

- A progressive workflow was used to move from an initial average velocity model based on vertical functions to a structural model of the subsurface by layers and faults, with the velocity variations being related to the structure
- Repeated iterations of seismic imaging and tomographic refinement of the subsurface velocity model were combined with scenario investigations to better understand the impact of the positioning of the major fault on the seismic imaging.

### Result

- A more accurate, high-resolution image of the subsurface, with improved positioning of both the seismic reflectors and the major fault.
- A more accurate economic assessment of the structural closures in the subsurface, and improved positioning of subsequent development wells in the reservoir.



# Emerson E&P Software GeoDepth

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Learn more: [www.emerson.com/EPSoftware](http://www.emerson.com/EPSoftware)

Contact us: [EPSinfo@emerson.com](mailto:EPSinfo@emerson.com)

