Seismic Engine, a DecisionSpace® 365 cloud application, is the industry’s first cloud-native software that enables you to create and run advanced geophysical algorithms and post-stack attributes on Terabytes of 3D seismic data.

The inability of traditional workstations to process large amounts of seismic data without sacrificing fidelity often leads to operational inefficiency and increase in cost. Seismic Engine, a DecisionSpace® 365 cloud application, is the industry’s first cloud-native software that enables you to create and run advanced geophysical algorithms and post-stack attributes on Terabytes of 3D seismic data. This digital framework helps make it possible to process unlimited volumes of seismic data with no reduction in fidelity, and generate multiple post-stack attributes from large seismic datasets. The speed and efficiency of computations gets you to decisions faster than our conventional tools.

**UNLOCKING THE POTENTIAL OF SEISMIC DATA**

- **Compute Attributes Regardless of Scale**
  The scalable cloud computing platform supports the computation of a wide variety of seismic attributes for large volumes of 3D seismic data, which can reduce the interpretation turnaround time.

- **Decrease Computation Time by up to 10-Fold and Shorten Project Lifecycle**
  Can be used in tandem with DecisionSpace® 365 tools to significantly decrease attribute computation time, and accelerate the decision-making process.

- **Customize Workflows to Address Unique Data Challenges**
  Build custom processing workflows for attribute computation and easily create multiple realizations for comparing and selecting the parameters.

- **Perform Quick Quality Control and Data Validation**
  Easy-to-use visualization tools deliver high-resolution 3D attributes with faster quality control and validation of results.
Seismic Engine allows you to create and run advanced geophysical algorithms and post-stack attributes at scale on 3D seismic data.

**PROCESS YOUR DATA REGARDLESS OF SCALE**
Process up to Terabytes of seismic data via an extensive digital framework that supports over 90 post-stack attributes.

**RUN MULTIPLE REALIZATIONS WITH EASE**
Flexibility to generate multiple realizations seamlessly to easily compare results, select best parameters, and then design the right solution.

**CUSTOMIZE YOUR WORKFLOWS**
Create innovative attribute generation workflows, using a built-in tool kit, to target unique challenges and complex computations.

**PREVENT THE FIDELITY OF YOUR DATA**
Visualize high-resolution 3D attributes, while preserving data fidelity, and validate results to maximize value of large-scale seismic data.

**REDUCE YOUR TURNAROUND TIME & EXPEDITE YOUR DECISION MAKING**
Decrease attribute computation turnaround time, allowing more time to focus on interpretation, critical decision making, and other value-adding activities.

**ENHANCE YOUR RESULTS, FAST**
Integrate with other DecisionSpace® 365 cloud applications to get better results 10X faster than previously possible with the limitations of conventional desktop applications.
FAULT LIKELIHOOD COMPUTATION
A leading-edge fault likelihood algorithm helps accurately detect very subtle fault signatures, providing information about the location of faults, as well as fault dip and strike. This built-in feature can automate and assist with mapping of geological faults in 3D seismic data, a key component of subsurface interpretation workflows.

CUSTOMIZABLE WORKFLOWS
Complex seismic data analysis workflows can be easily built and customized thanks to a wide variety of seismic attributes quickly accessed via robust search capability. Tools and processes are available to select the input data or generate synthetic data, compute attributes, create data branches, apply filters, and save outputs. Each step of the workflow can be edited through an interactive user interface or through a more advanced YAML editor.

SEISMIC ATTRIBUTES
A comprehensive collection of attributes is available for application to post-stack seismic data. This list includes curvature, structure-oriented semblance, wavelet decomposition, multi-dimensional clustering, and many more.

TOOLS AND PROCESSES
An extensive set of tools and processes—including despiking, filtering, interpolation, and structure-oriented smoothing—to help processing of the seismic data before computing resource intensive attributes, such as fault likelihood. This helps eliminate excessive noise that can affect the seismic amplitudes near fault zones.
WORKFLOW DUPLICATION
Each output dataset is linked to the workflow that generated it. All input parameters are preserved in a YAML file that can be easily copied and reused for other datasets, or applied to the same dataset with a new set of parameters. Running multiple realizations of the same job can be performed in seconds.

EASY TRANSFER OF SEISMIC VOLUME
Upload and download tools are provided to streamline data transfer, making it easy for users to access their seismic data from a cloud-hosted S3 bucket or from a local PC hard drive. Cloud technology is leveraged to transfer large volumes across buckets, by subdividing the data into thousands of small parts and parallelizing the process.

DATA VISUALIZATION AND QC
A set of simple 2D visualization tools display fold maps, histograms, and inline and crossline section views, as well as time and depth slices. Users have quick and easy access to these data visualization tools in order to validate workflows and parameters, as needed.

TO LEARN MORE, CONTACT: LANDMARK@HALLIBURTON.COM.