FIBER - Enabling RAPID Onsite Decision Making

SITUATION

Distributed Fiber Optic Sensing (DFOS) data is becoming a critical component of understanding well performance and well intervention. Companies have collected Petabytes of data but are unable to view and interrogate it in a timely manner to improve decision making, and to independently extract value from the data. Hence, vast amounts of DFOS data goes unused due to limitations in the software and the inability to integrate with other commercial software packages.

CHALLENGE

A software package with the ability to rapidly view, select, and analyze critical and actionable Distributed Fiber Optic Sensing (DFOS) DAS and DTS data.

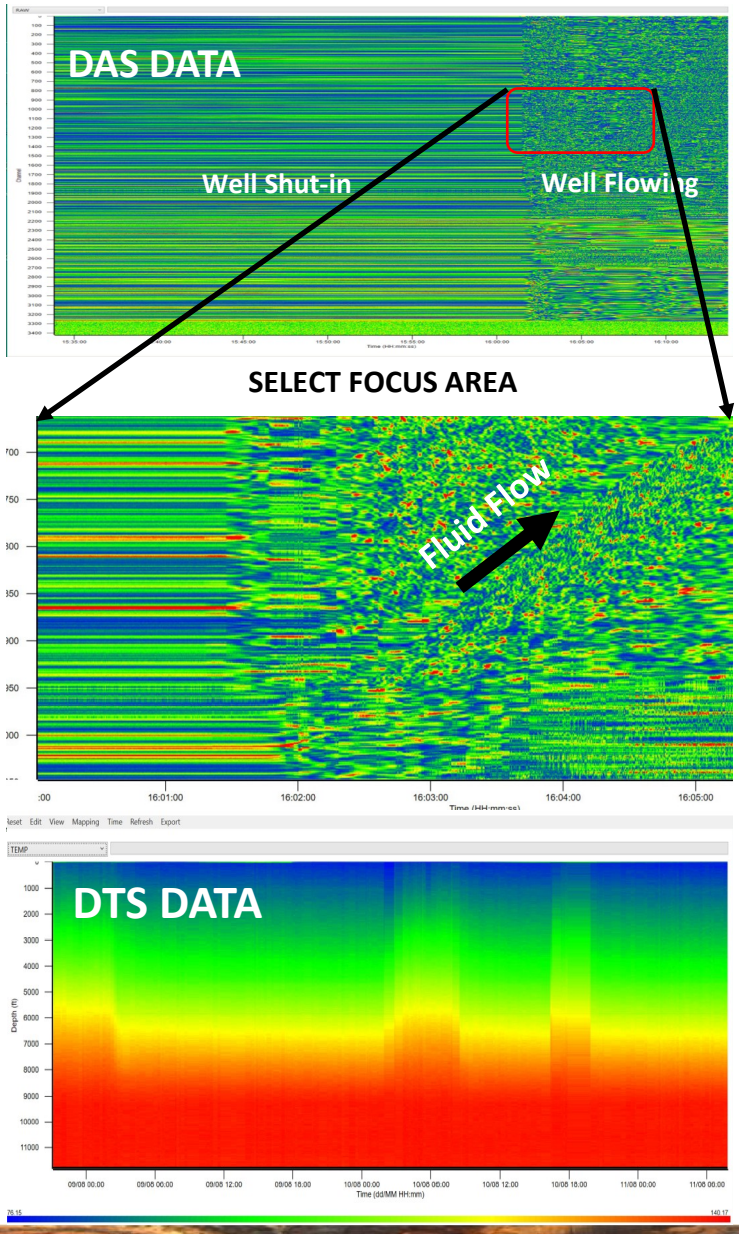
SOLUTION

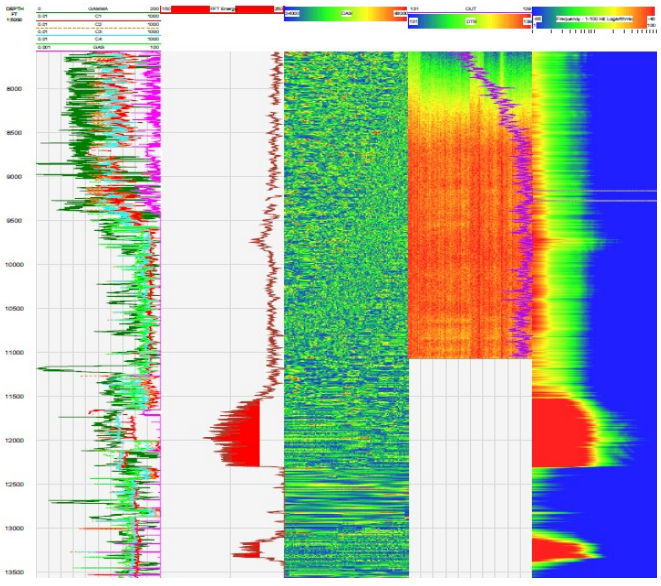
The approach is simple. Drag and Drop the DAS or DTS file(s) into the **LogScope Fiber Window**, and immediately a dynamically normalized image is presented. The software allows users to quickly select and process data that is relevant to the survey objectives, and to enable timely decision making.

LogScope Fiber Workflow

- *RAPIDLY* Load & Review Fiber Optic Data
  - Distributed Acoustic (DAS)
  - Distributed Temperature (DTS)
- *QUICKLY* Visualize Entire Dataset
  - Focus on Area of Interest
  - Select Zone of Interest
  - Identify Events of Interest
- *EASILY* Process & Export
  - Trim to Zone of Interest
  - Down Sampling
  - Image Processing
  - Digital Processing
  - Export in DLIS, HDF5, SEG-Y

DRAG & DROP data into LogScope in SECONDS





FIBER OPTIC & LOG DATA MERGED IN LogScope

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LogScope

FIBER - RAPID Decision Making

Capabilities & Functionality

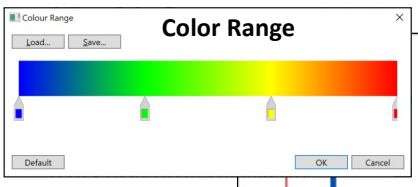
- *EFFICIENT* Data Editing & Management
  - Mapping in Depth and Time
  - Trimming and Export to New File
- *ENHANCED* Data Visualization
  - Data Zoom In/Out
  - Amplitude Scaling
  - Adjust Color Range
  - View Energy Spectrum
  - Playback Mode
- *FLEXIBLE* Data/Image Processing
  - Noise Reduction:
    - ◊ Binning
    - ◊ Median Filter
  - Digital Filtering:
    - ◊ Bandpass
    - ◊ Low Cut, High Cut
  - Data Decimation

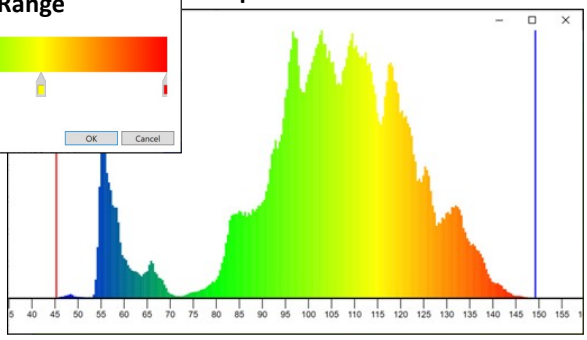
PROCESSING EXAMPLE

Gigabytes of RAW input Distributed Acoustic Sensing data, showing the descent of a FiberLine Intervention* tool in a well, is quickly processed to highlight critical, dynamic features. The data below was imported, trimmed, scaled, zoomed, binned and filtered and is ready for export to log format for further interpretation.

BETTER VISUALIZE THE DATA

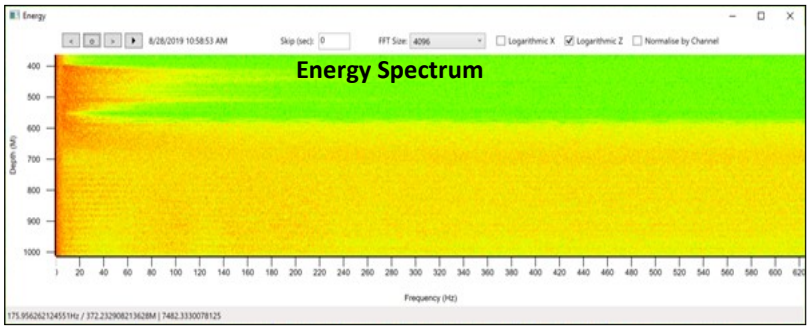
Adjusting the color palette to match the dynamic range of the data is simple in LogScope Fiber. Any color palette can be designed and saved for future use.



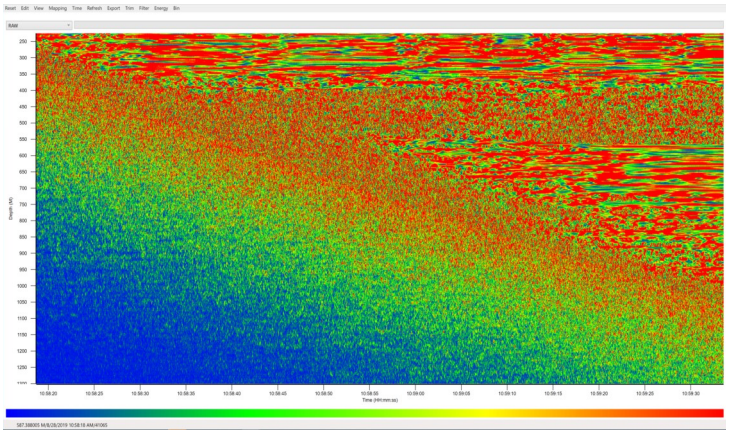


OPTIMIZE AND HIGHLIGHT IMPORTANT FEATURES

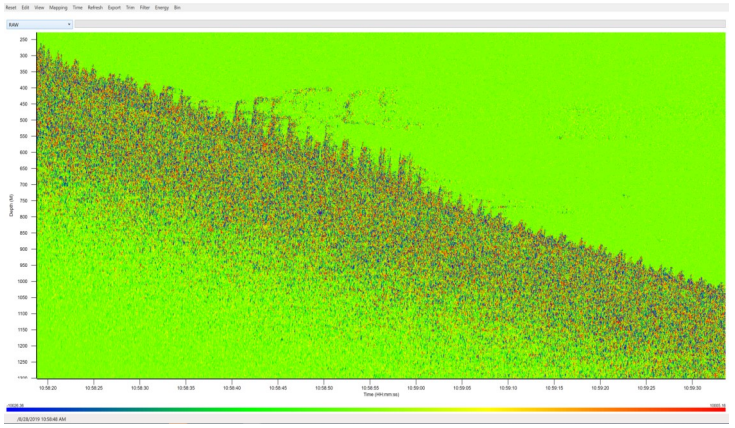
An animated energy display is provided so the exact frequency distribution in the DAS data can be reviewed. Binning and digital filtering optimization are user defined. These capabilities can be used to create a visually aesthetic presentation that highlights major features, such as flowing fractures, leak points and other features or anomalies that help you better understand your data.



RAW Input Data



EDITED and PROCESSED Data



* Data provided courtesy of Well-SENSE Technology Ltd.

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