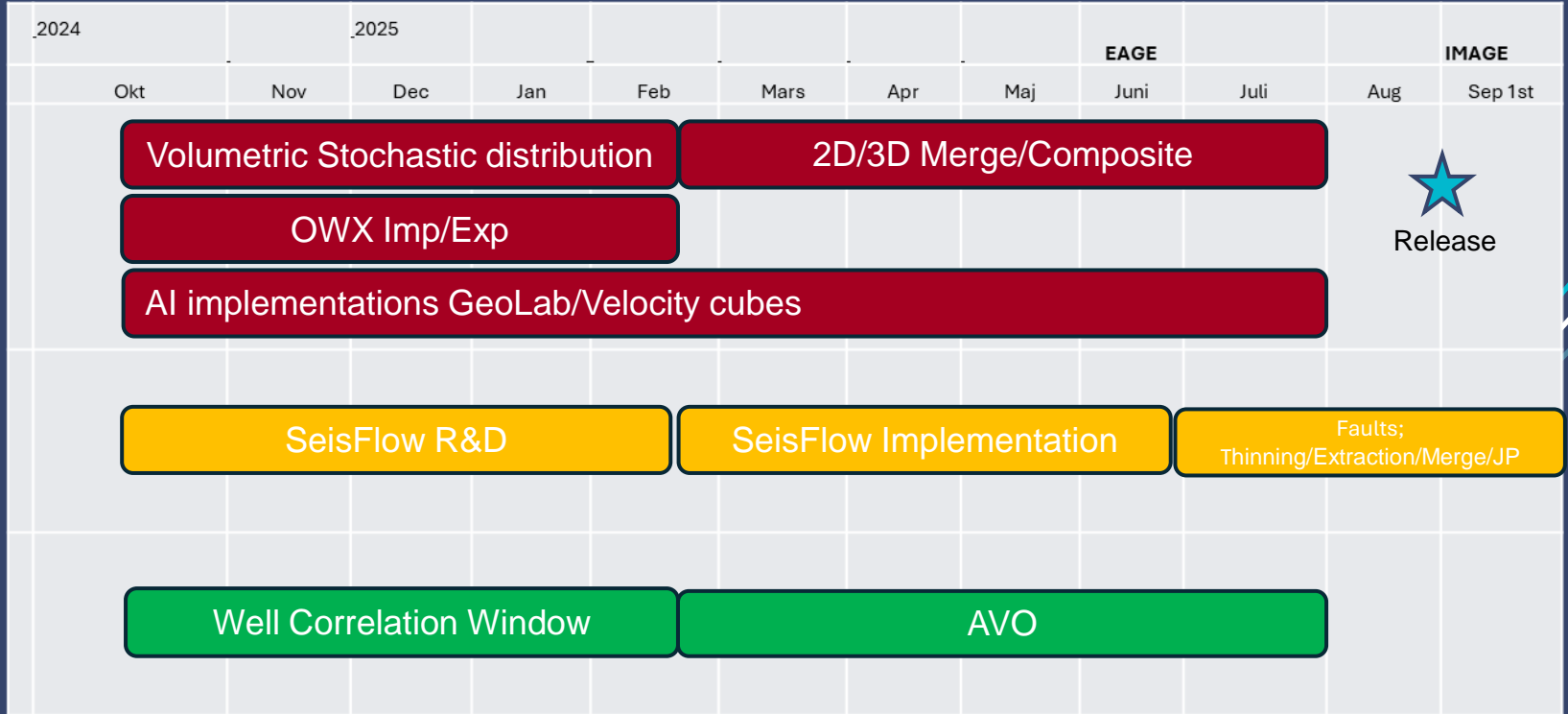


OPENMIND 2.0 - GLOBAL COMMERCIALIZATION

Development plan (draft)



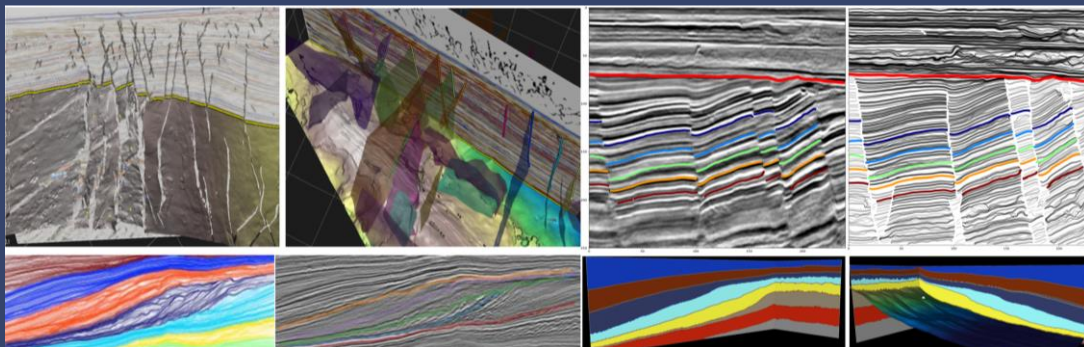
Think volumes, not maps!

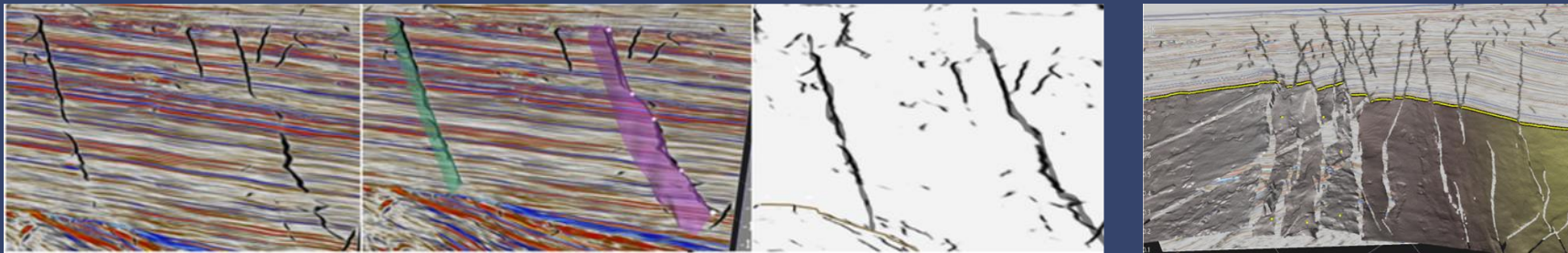
For centuries the Oil & Gas industry has relied on maps. At IMAGE, 2025 GeoMind will release a new stratigraphical volume-based exploration toolbox called **StratCracker**.

This fully volume-based approach will inspire stratigraphers and geophysicists to work as an integrated team, by cracking the stratigraphic understanding early on. The key is the integrated co-work, immediate access to a combination of seismic data, AI clustering and a volume-based 3D process, extracting more vital information from your precious seismic volume.

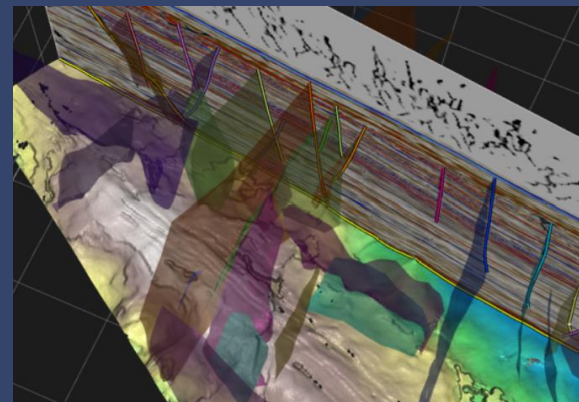
StratCracker allows the user to separate and extract individual stratigraphic units down to the finest level. However, start simple with major sequences and faults first. Once you have the key unconformities and maximum flooding surfaces (or its equivalents) interpreted together with major faults, you can move on to the next level of sub-zonation.

Maps will still be needed but more for guidance and final output/documentation.





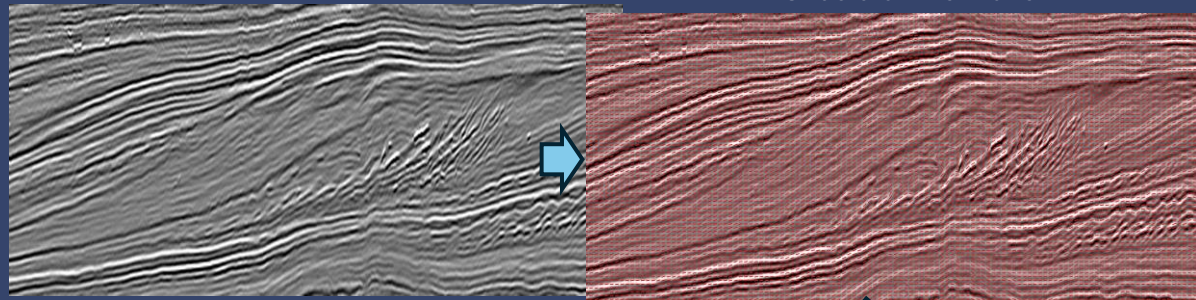
Interpret or import any interpreted horizons and faults from your project, iterate with fault probability model and let StratCracker use FlowLines to create a zone probability volume, bringing out important sequences for attribute analyses, volume estimation and detailed 3D understanding.



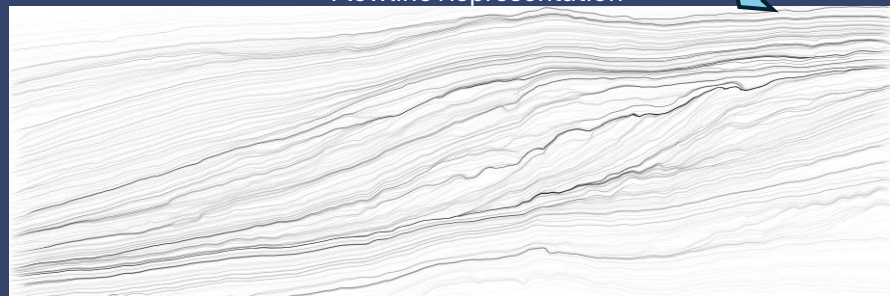
StratCracker Process with SeisFlow

Seismic Input

Structural Information



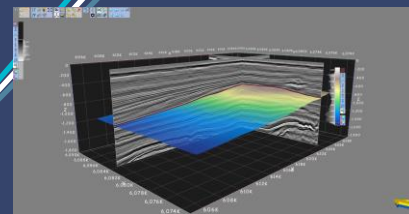
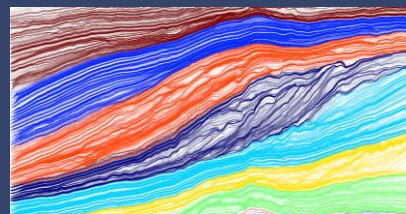
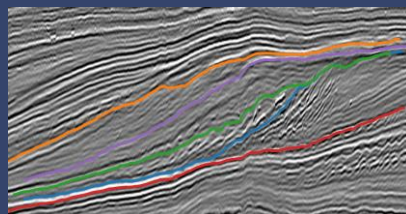
Flowline Representation



Sequence Boundary Ranking

Sequence Clustering

Towards 3D

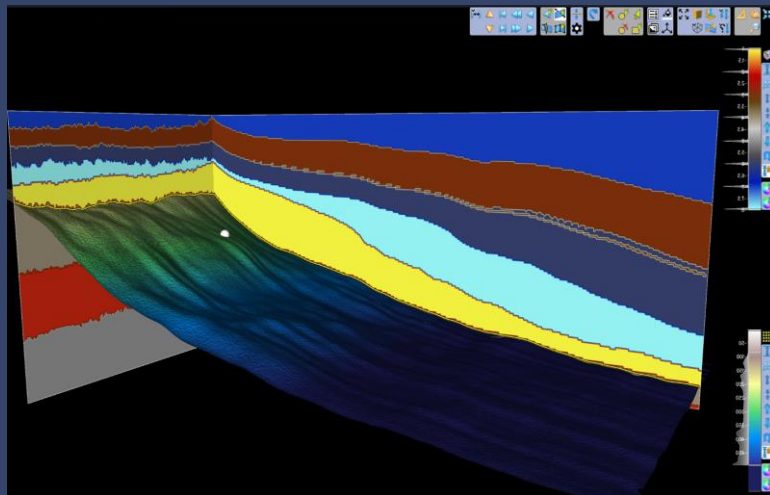
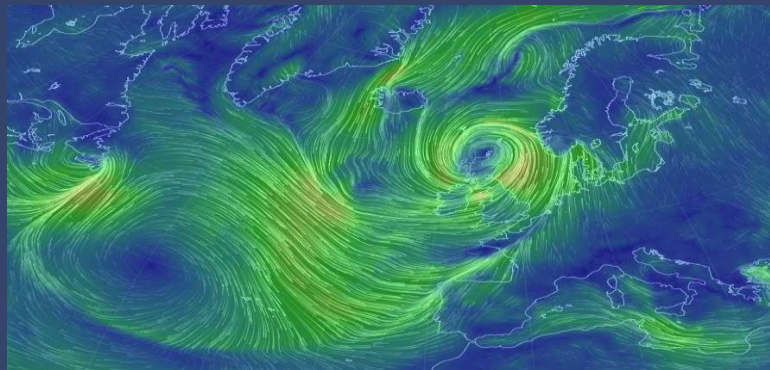
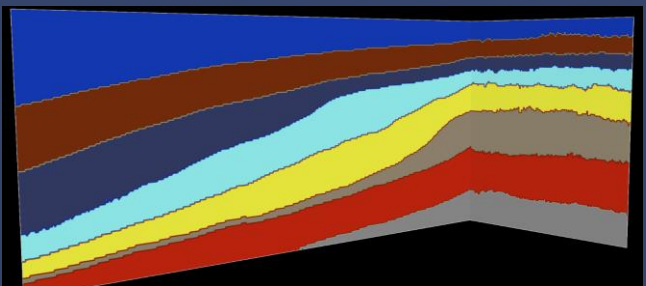
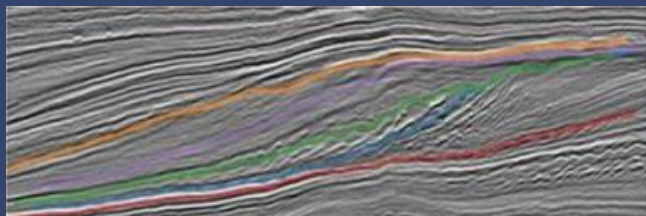
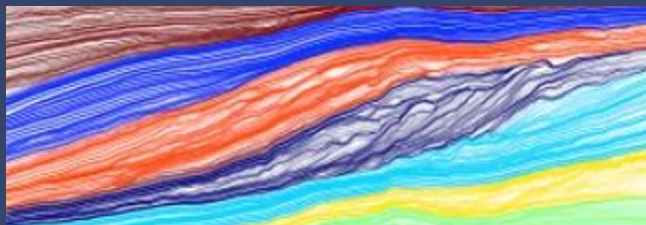


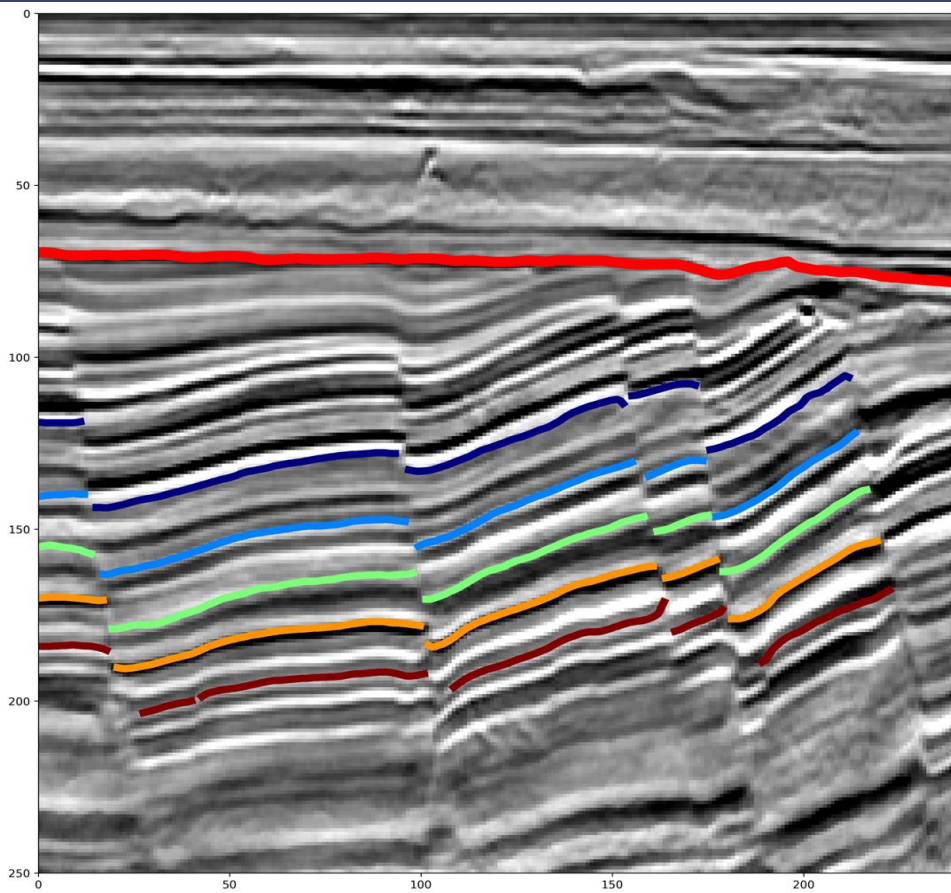
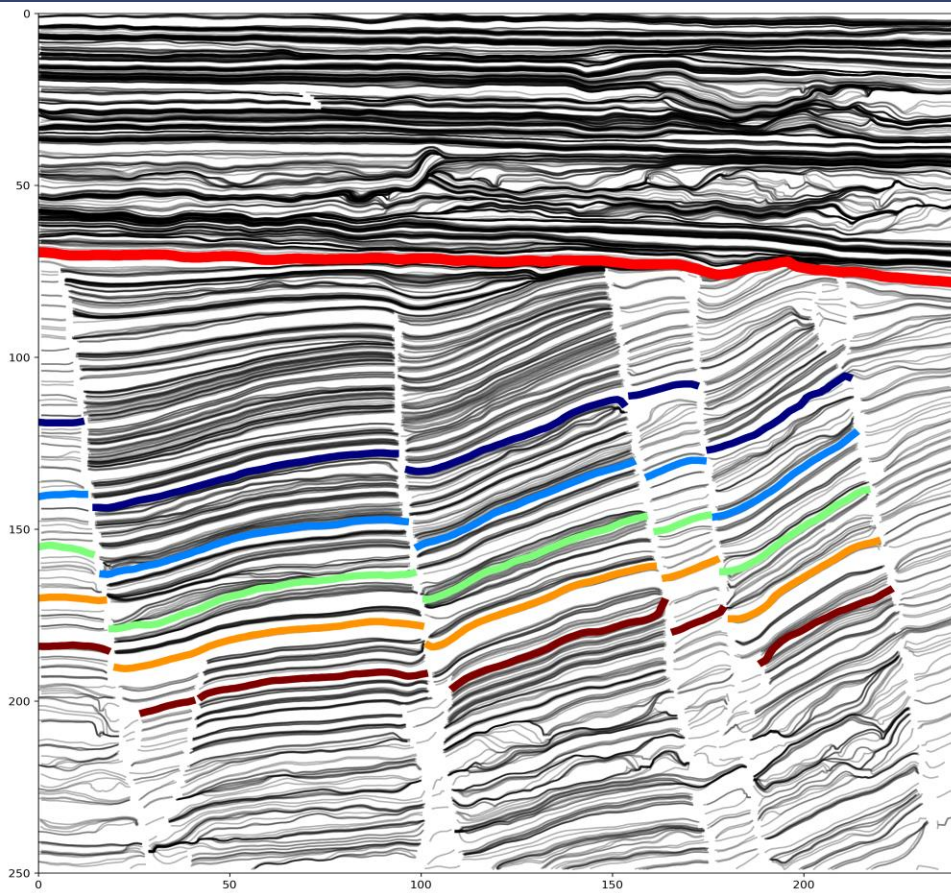
- Extract **dip** from seismic data
 - Seismic to dip field.
 - Dip field to flowline representation

- Workflows utilizing the flowline representation
 - Extraction and ranking of seismic sequence boundaries
 - Cluster based extraction of sequence boundaries and sub-sequences.
 - Tracking conformable reflections
 - Moving towards 3D

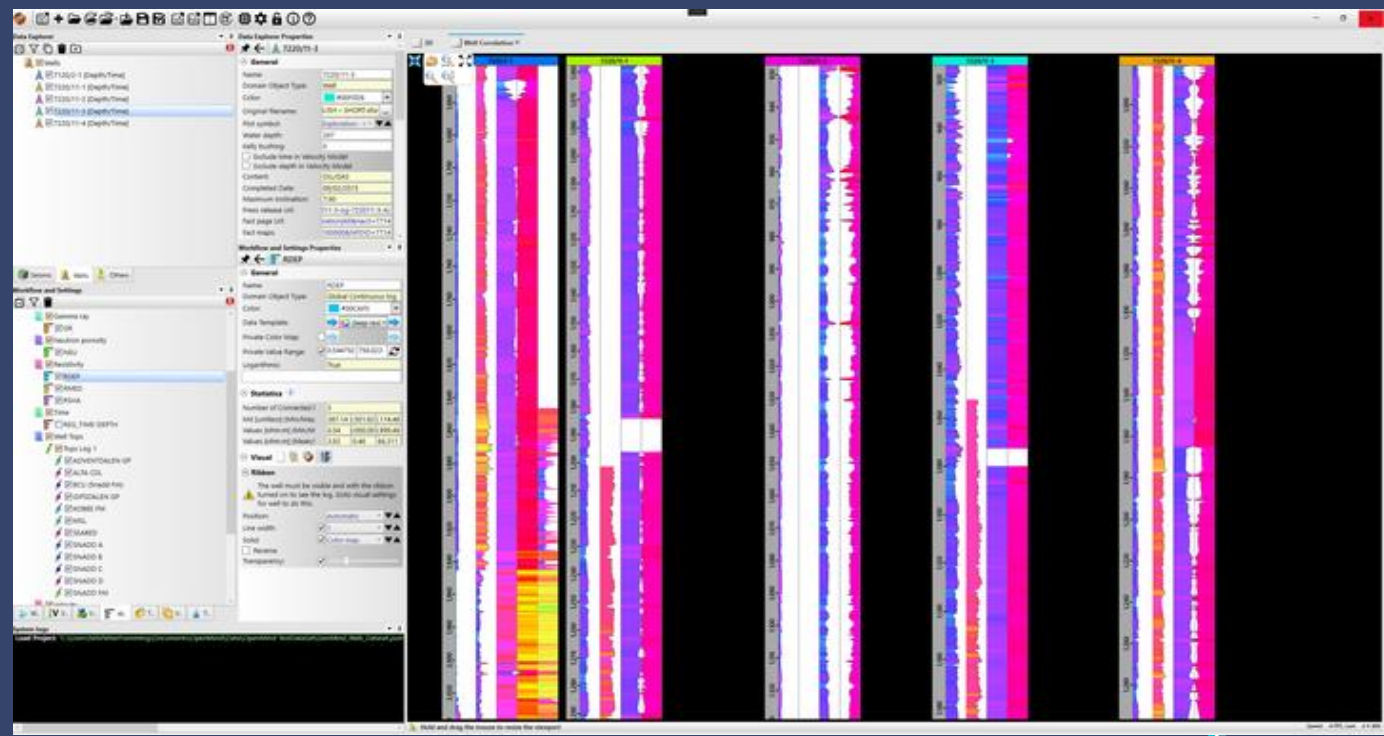
StratCracker Process with SeisFlow

Dennis Adelved: <https://imageevent.aapg.org/portals/26/abstracts/2024/4099879.pd>





Import your wells via Landmarks OMX format or Petrel multi well export option.



Efficient angle stack conditioning using a convolutional neural network (huff, EAGE 2024)

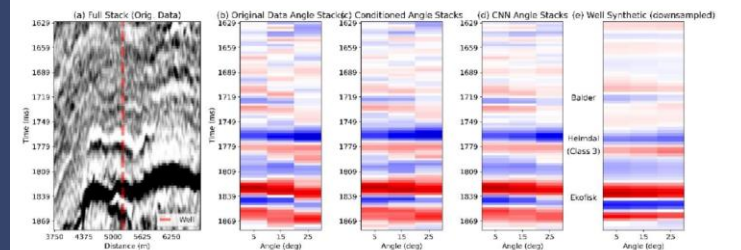
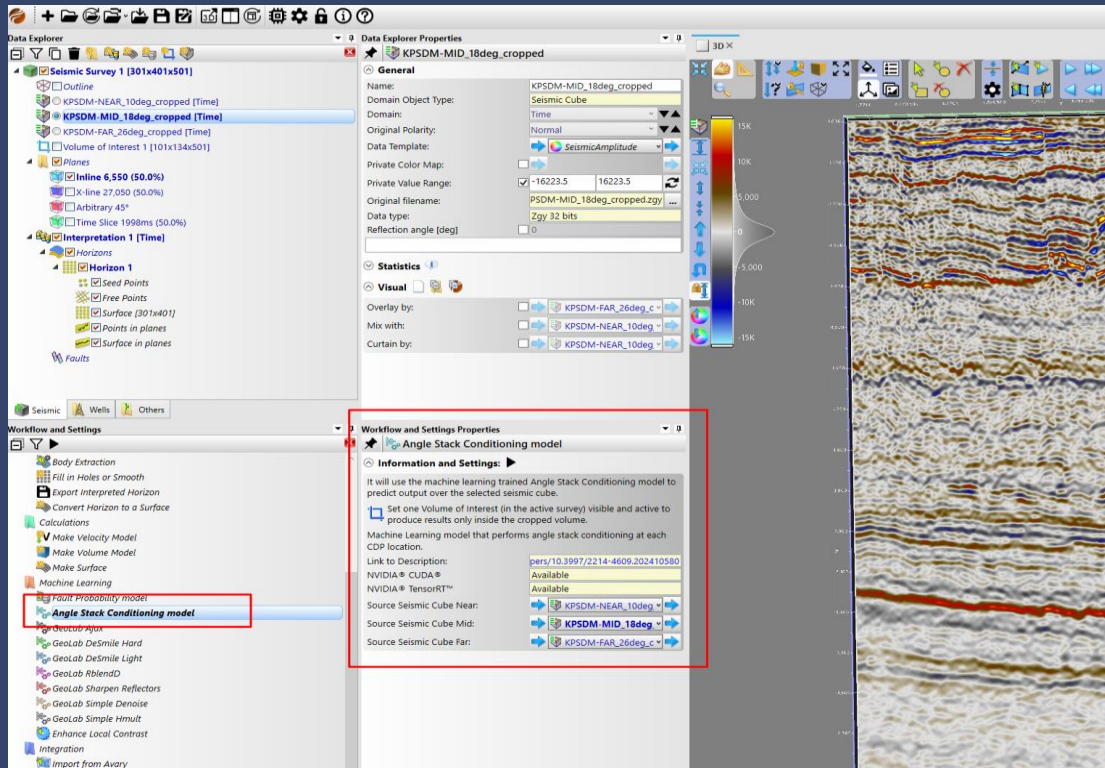
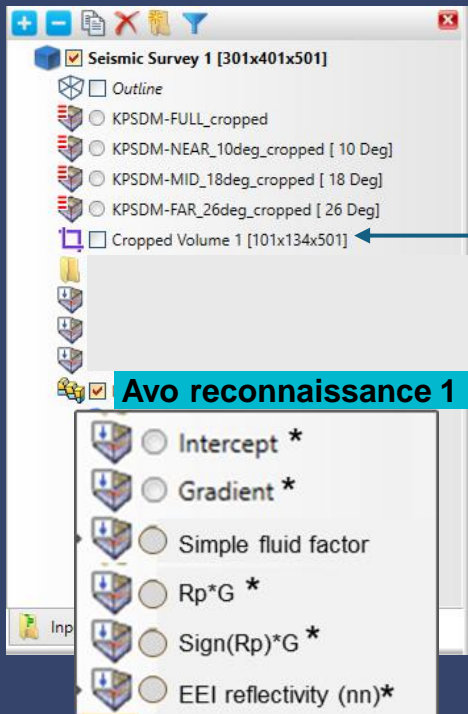


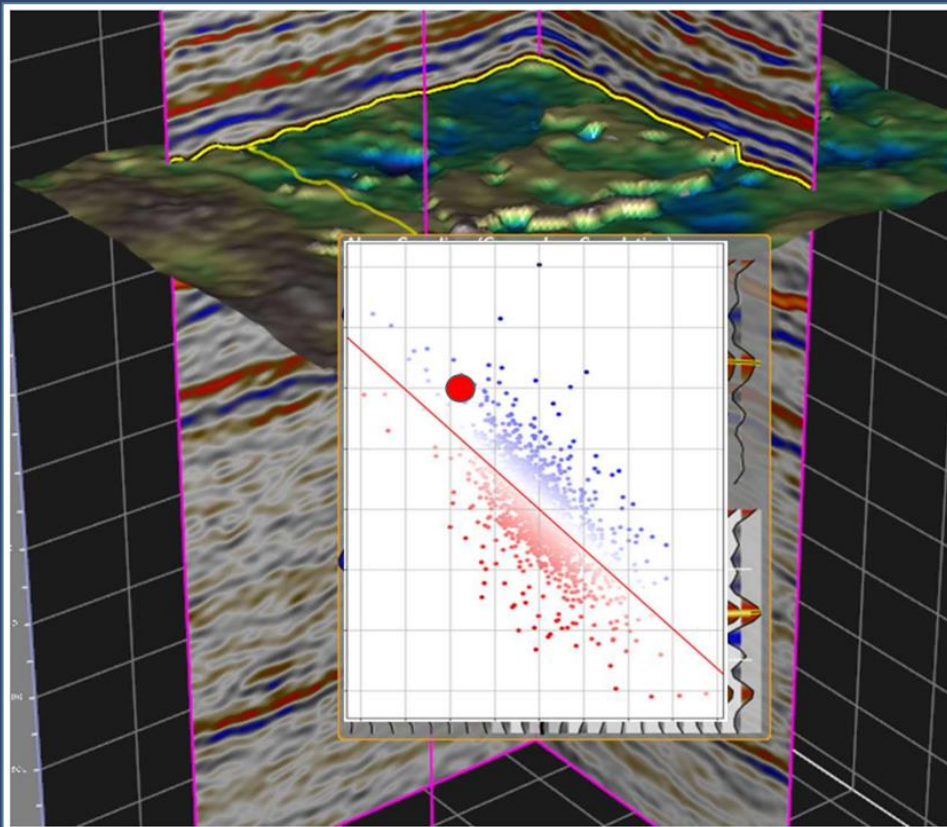
Figure 4: Full stack original data with well location, near/mid/far angle stacks for original/conditioned/CNN-predicted data, and a synthetic from well logs. (PGS data PGS19M05VIK)



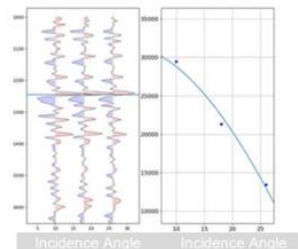
The cropped volume is used to limit the volume where calculations are run

Input to the calculations are the input angle stacks, within the cropped volum

Limiting the calculations to the data that is currently visualized (either on plane(s) or horizon(s), or the sides of the cropped volume)



When the “AVO Interpretation” operation is active, it is great to use the mini window to display where the current point is in the Intercept vs. Gradient plot
 OR
 Show the angle stack traces along with an amplitude versus angle plot



Stochastic Volume model

Use the similar set-up, windows etc, but allow for statistical input, variables and stochastic output

Operations

- Import Shapefiles and Other Data
- Create or Edit Polygons
- Seismic Interpretation Workflow
- Import Seismic Cubes
- Interpretation
- Body Extraction
- Fill in Holes or Smooth
- Export Interpreted Horizon
- Convert Horizon to a Surface
- Calculations
- Make Velocity Model**
- Make Volume Model**
- Make Surface
- Machine Learning
- Integration
- Import from Avary

Make Stochastic Volume Model

- StretchedBeta LoHi
- Beta
- Stretched Beta
- Triangular
- Uniform
- Normal
- Normal LoHi
- Constant

Distribution type: Drop down - select INPUT

- Minimum: xxx from keyboard
- Mode: xxx from keyboard
- Max: xxx from keyboard

Show graph

Correlation

Parameter	Dependency	Factor
Oil saturation	Porosity	High positive
Rec factor - oil	Net to gross	Positive
Rec factor - oil	Porosity	High positive

None - positive - high positive
None - negative - high negative
Functional ?

Stochastic Volume Model 1

General

Name: Volume Model 1
Domain Object Type: Volume Model
Color: #5E7DD6

Settings

- # of iterations
- Start seed

Stochastic Model Settings

Top surface: Depth Surface [Depth, 63]

Base type: Constant thickness

Thickness: 30

HC-Water contact level: -820

Boundary: VOLUME AREA [Depth]

Petrophysical settings

Net to gross ratio: 0.7

Porosity: 0.25

Fluid settings

Fluid: Oil

Oil Saturation (So): 0.7

Oil Expansion Factor (1/Bo): 0.8

Recovery Factor: 0.65

Output

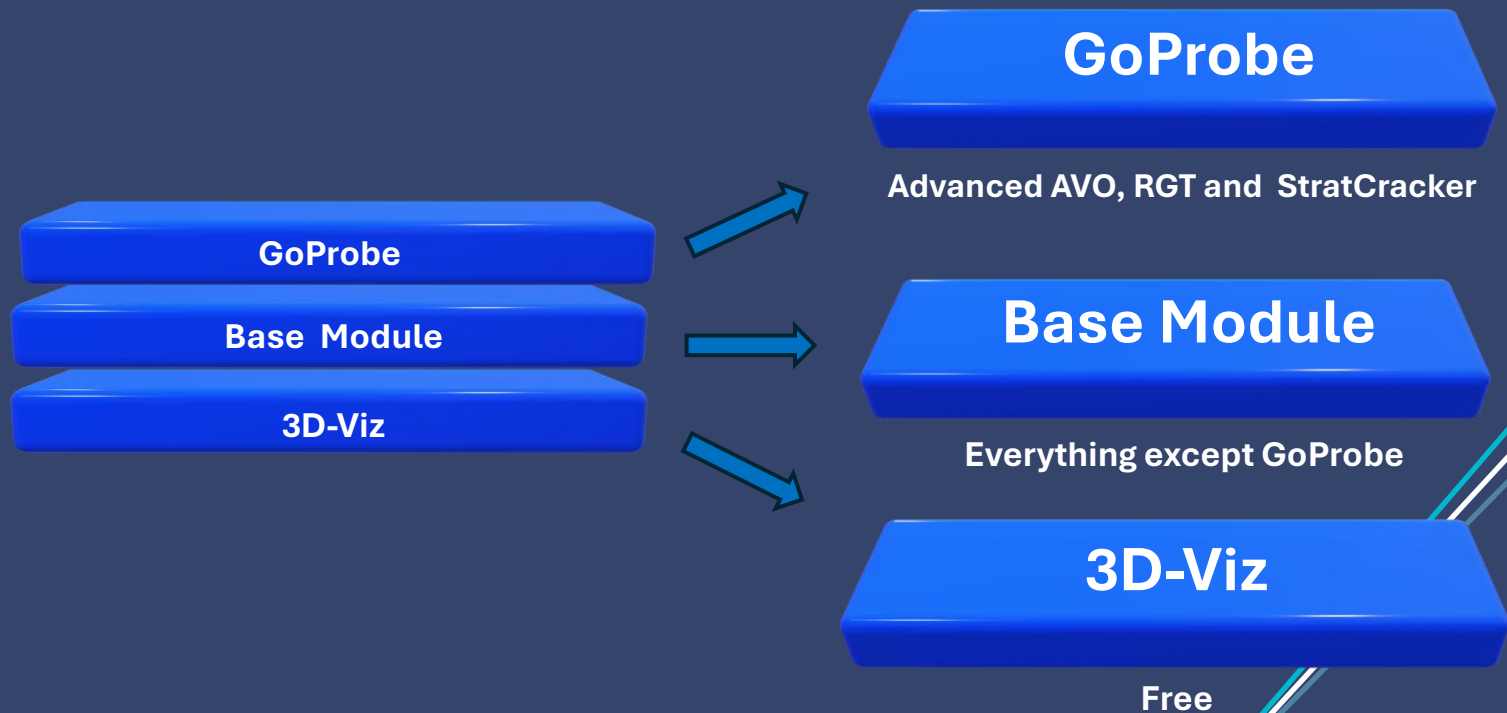
Directory for Excel output: C:\Users\berkor\OneDrive - Aker BP ...

Vertical increment: 5

Make bulk rock volume
 Make contact
 Make contact line

* Spill point is constant (and limiting the contact distribution) => no contact deeper than actual spill !!!

OpenMind Rental Model



OpenMind Rental Model (preliminary)

Currency USD	1 Week	1 Month	1 Year
3D Visualization	Free	Free	Free
Base Module *	300	1000	10000
OpenMind GoProbe **	300	1000	10000
OSDU	100	300	3000

* Includes all features except GoProbe

** Includes StratCracker (SeisFlow) RGT and Advanced AVO
 Companies with < 10 employees ½ price
 Universities Free