RadExPro
seismic software

# Real-Time Interactive QC and Infield Processing of 3D/2D Land Seismic Data

RadExPro seismic software

for QC and infield processing

**Requirements for seismic QC software:**

- Easy to install and maintain
- Easy to learn and use
- Interactivity
- Data QC
- Geometry QC
- Basic processing facilities (up to brute stack)

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## for QC and infield processing

- On Windows (7/8/10)
- Easy to install
  - Does not require administrative expertise
- Easy to learn and to use
  - Intuitive graphical interface
  - Manual and tutorials available
- No specific hardware required
  - Operates smoothly on just an average up-to-date laptop or desktop computer

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# Infield QC

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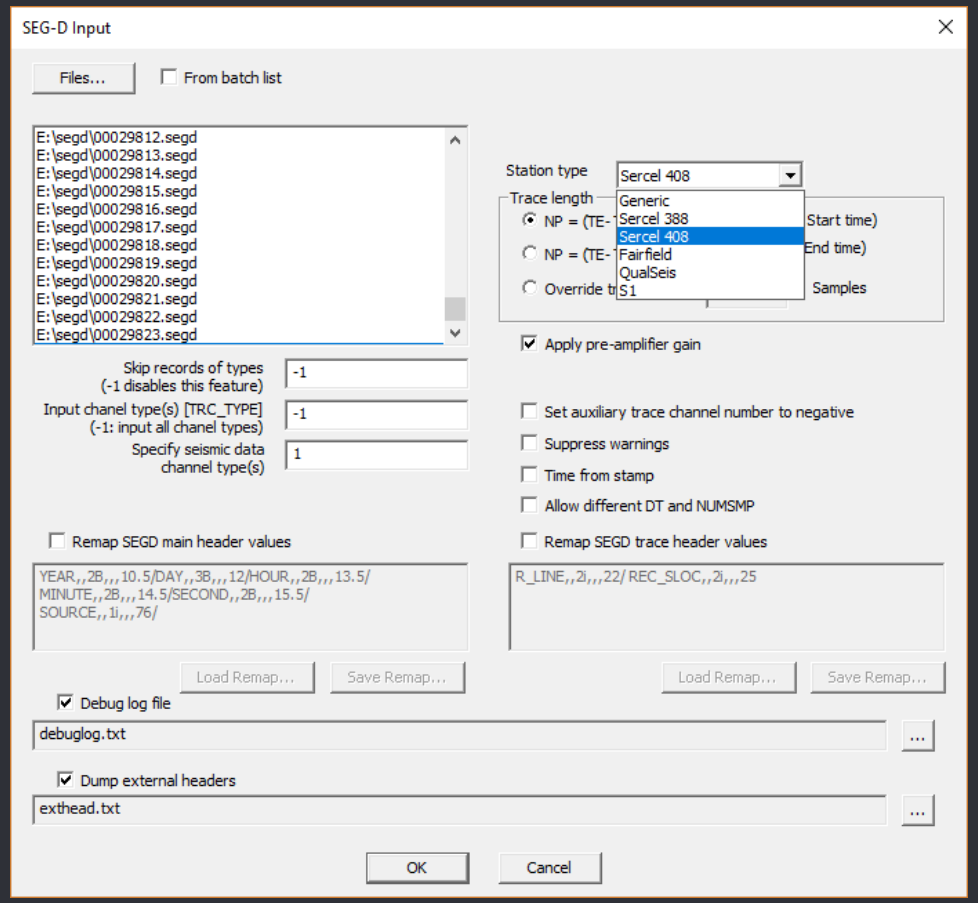
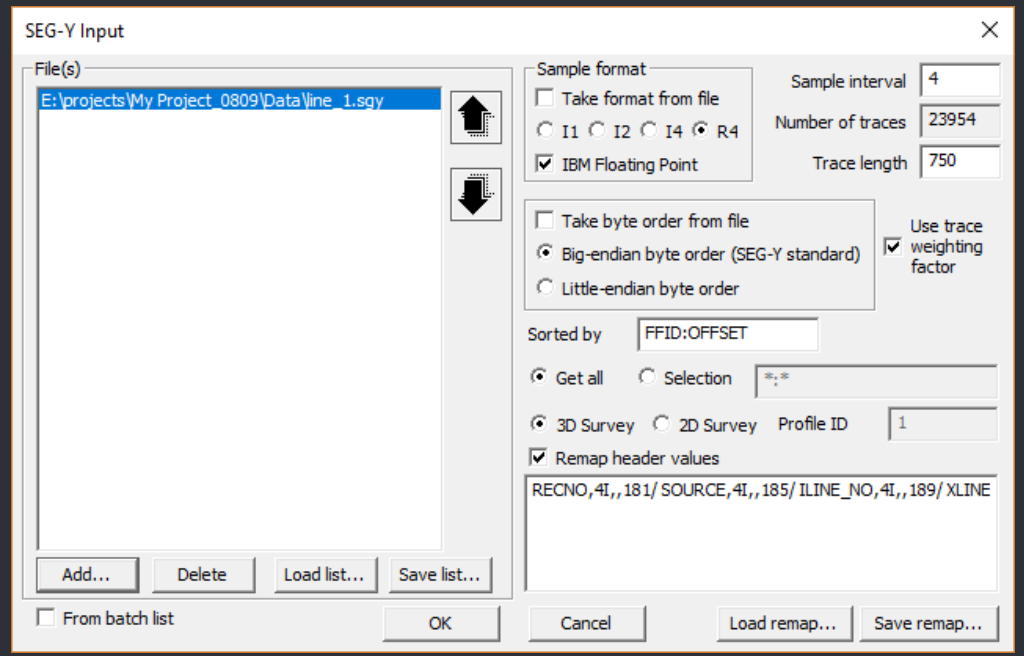
# Rapid input of data of any size




Formats supported:

- -SEG-D (incl. rev.3, with optional header remapping)
- -SEG-Y (with optional header remapping)
- -SEG-2 and more...
- -Input seismic trace from ASCII



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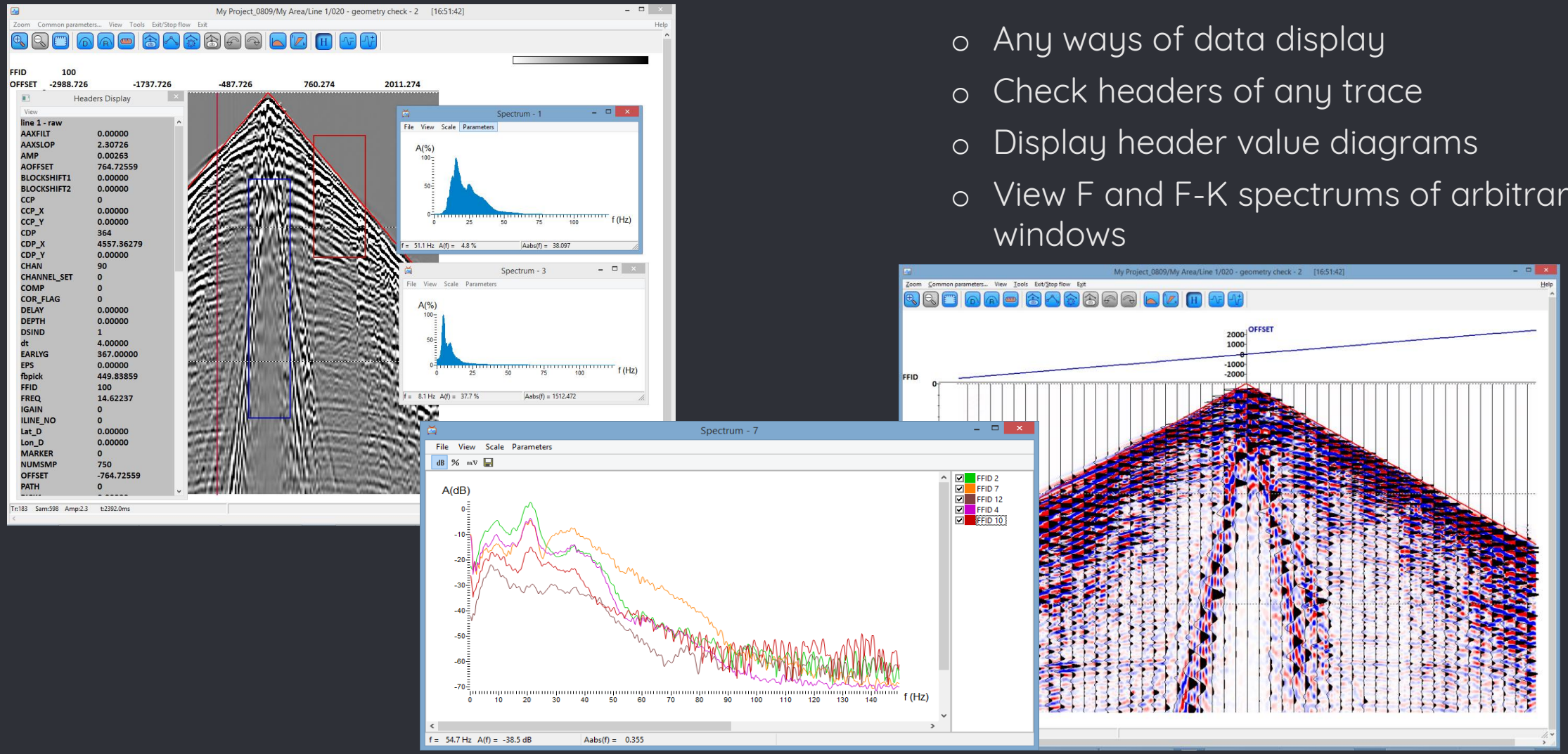
# Visual QC and data analysis




- Any ways of data display
- Check headers of any trace
- Display header value diagrams
- View F and F-K spectrums of arbitrary windows

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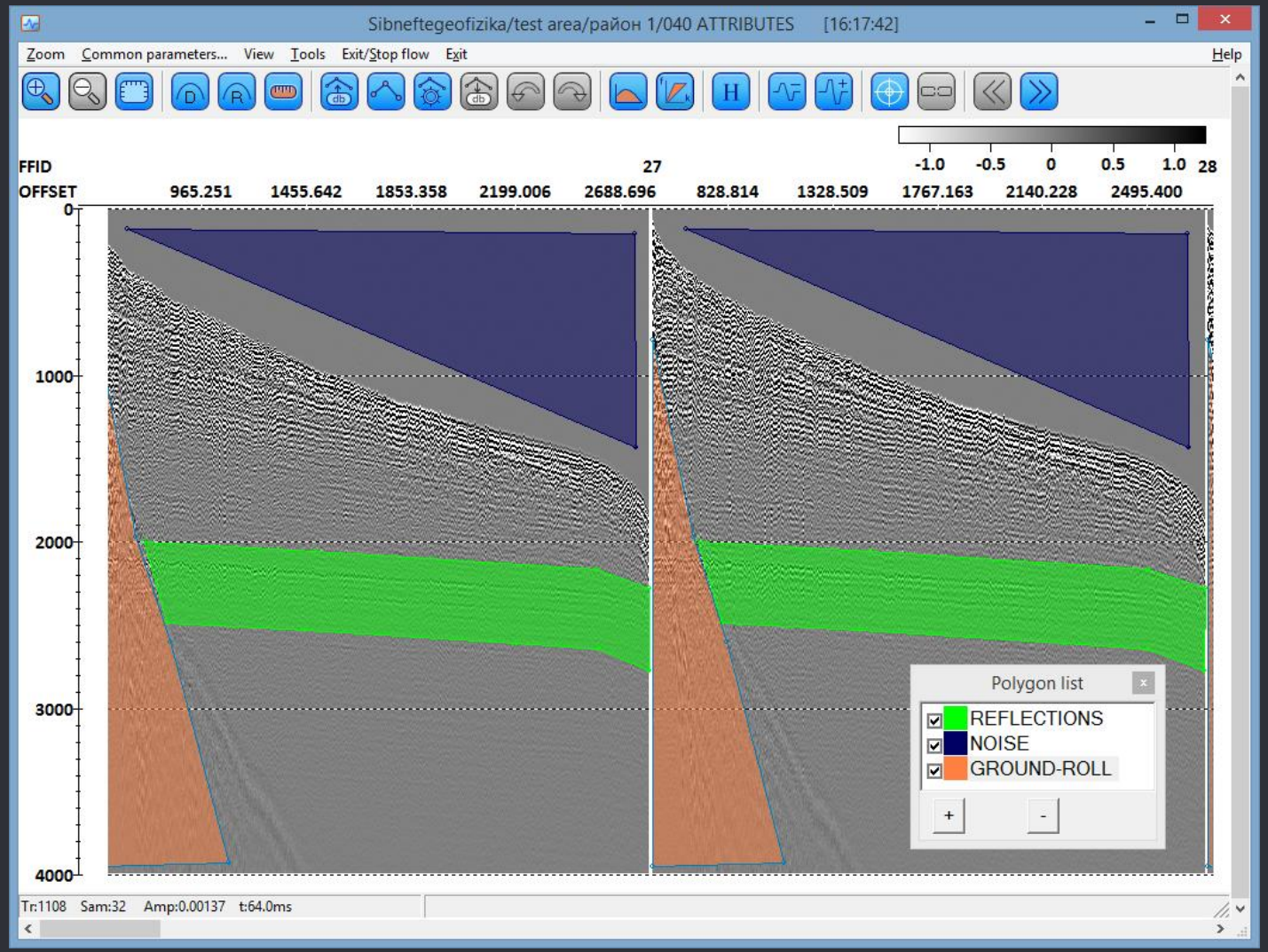
# QC attribute calculation for seismic gathers



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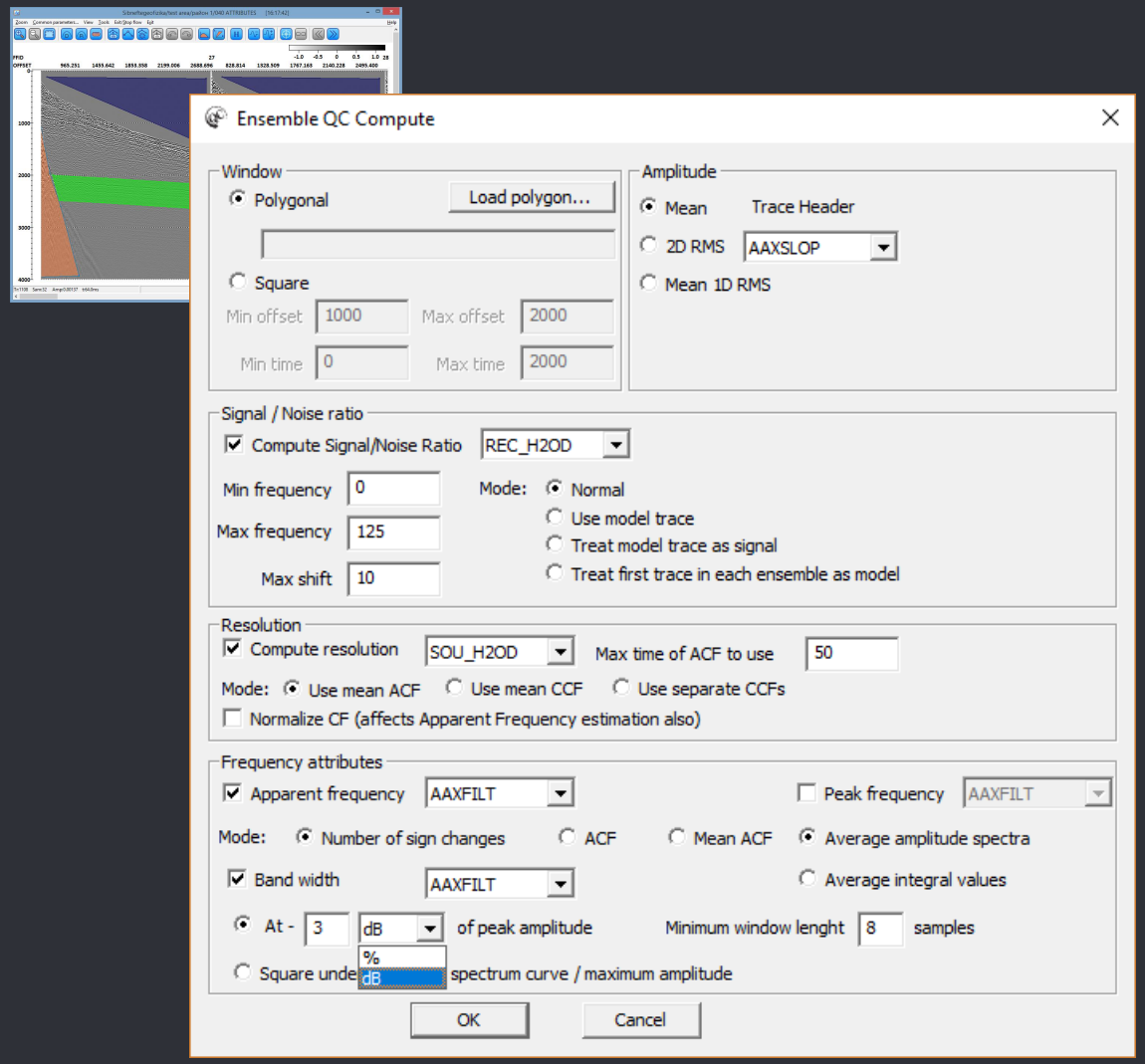
# QC attribute calculation for seismic gathers




- Various amplitude and frequency attributes
- Correlational SNR within a specified frequency range

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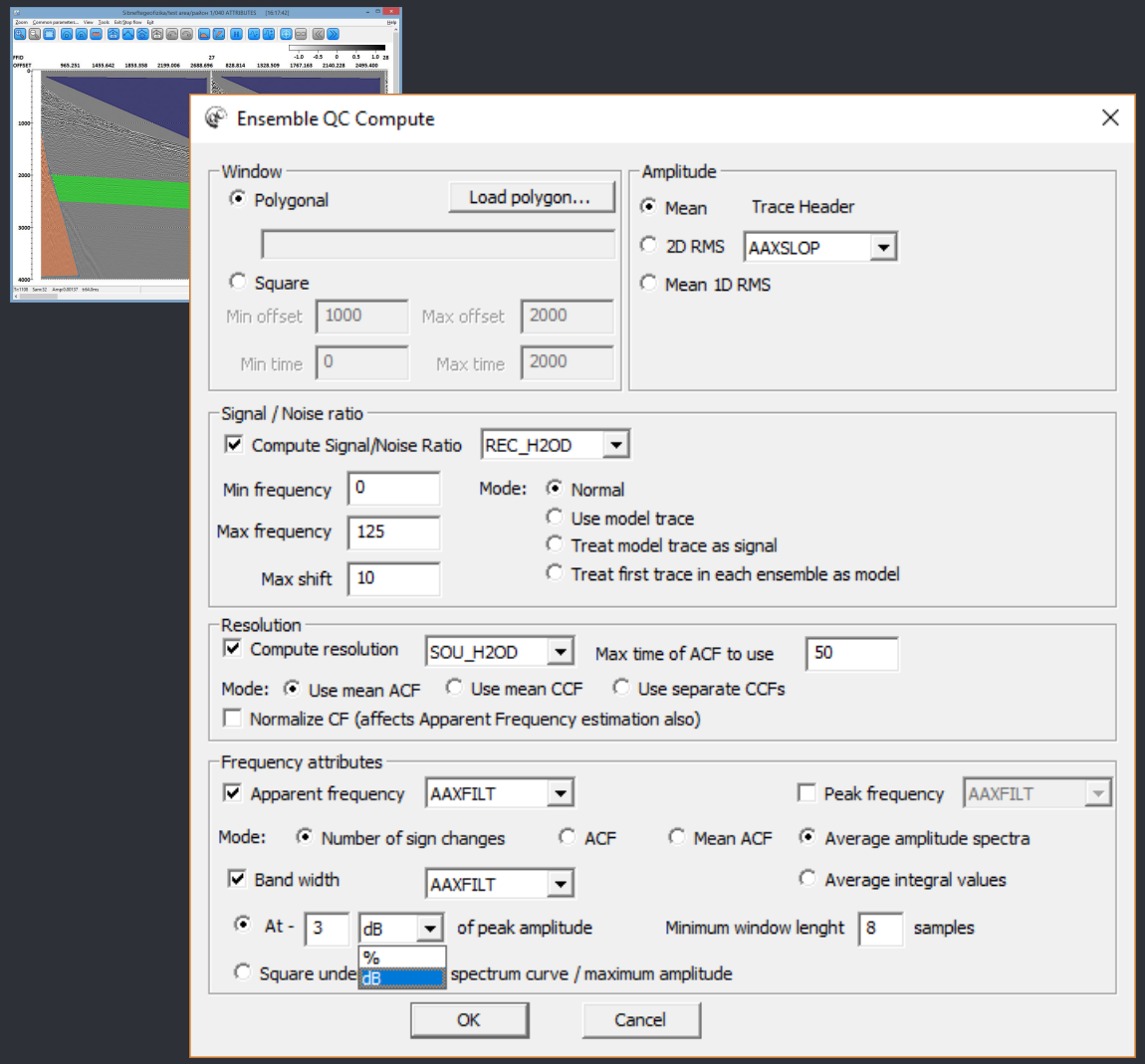
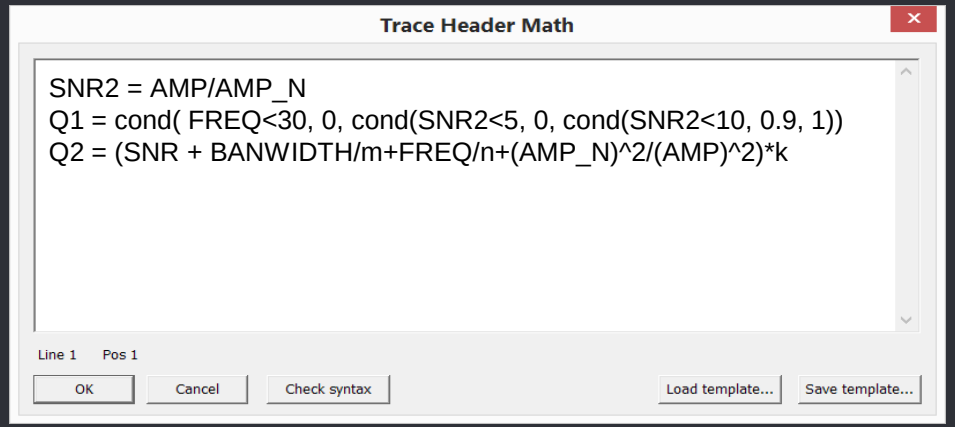
# QC attribute calculation for seismic gathers




- Various amplitude and frequency attributes
- Correlational SNR within a specified frequency range
- Calculate complex combined attributes using built-in formula editor



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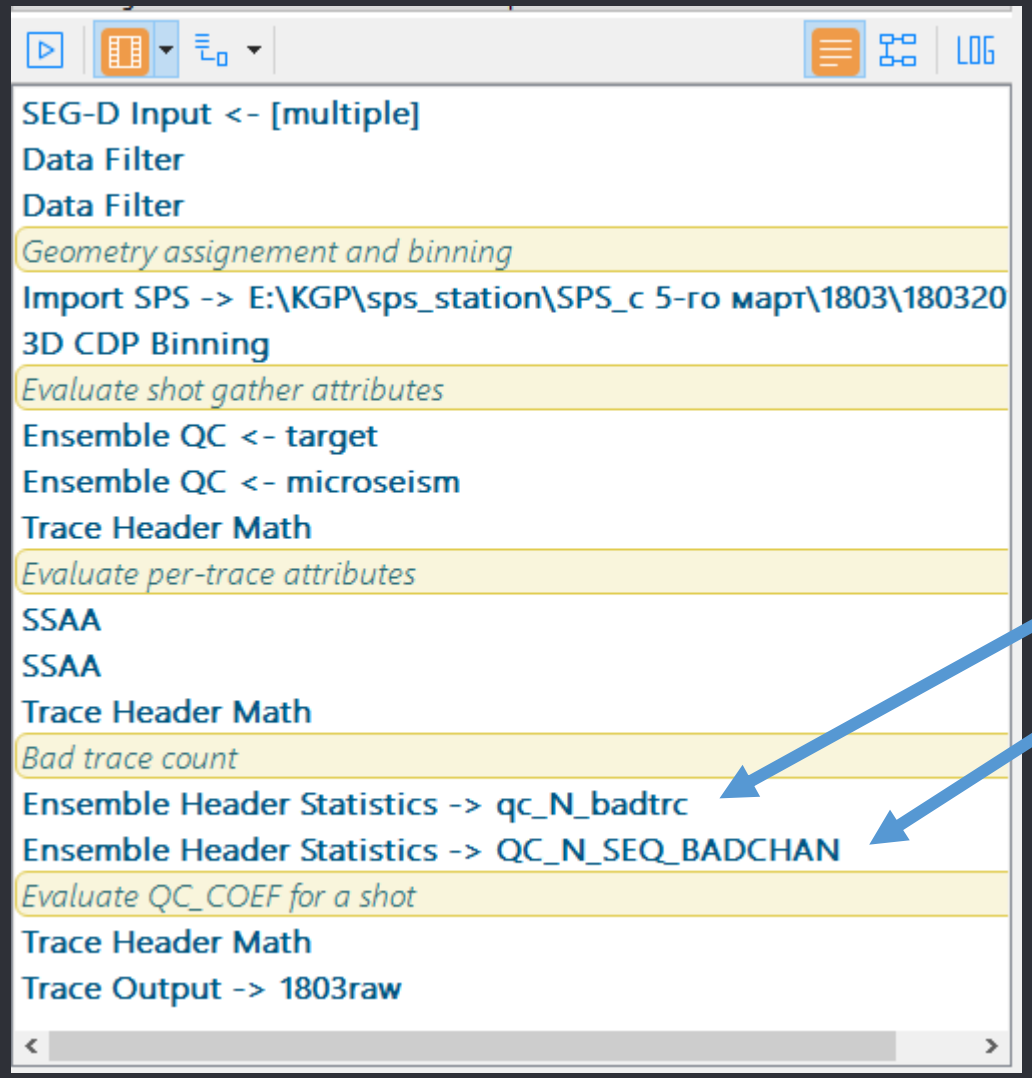
# Combining gather and per-trace QC attributes




Total number of bad traces per shot

Number of sequential dead channels per shot

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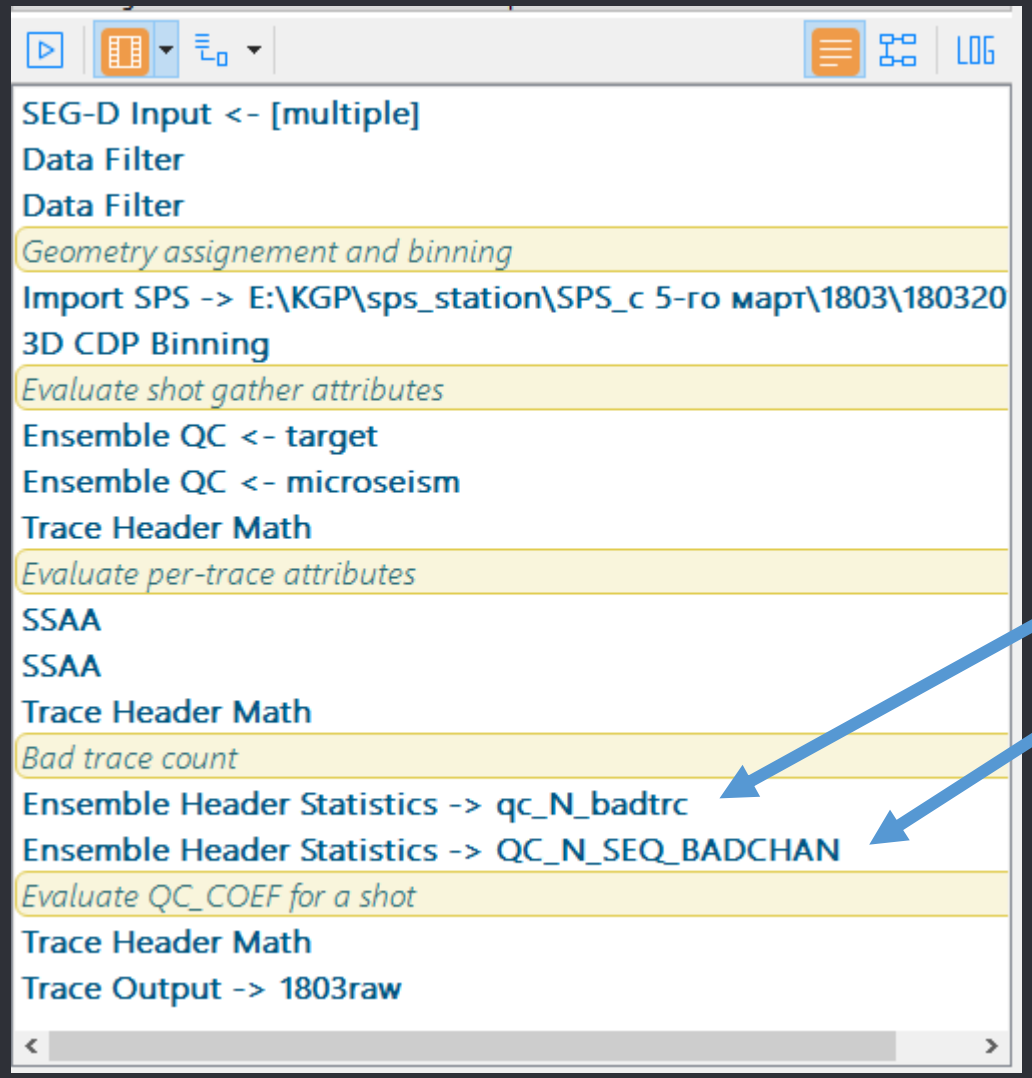
# Combining gather and per-trace QC attributes




Total number of bad traces per shot

Number of sequential dead channels per shot

Trace Header Math

```
qc_coef = cond(qc_f<30, 0, cond(qc_snr<5, 0, cond(qc_snr<10, 0.9, 1)))
qc_coef = cond(qc_N_badtrc>50, 0, qc_coef)
qc_coef = cond(qc_N_seq_badchan>3, 0, qc_coef)
```

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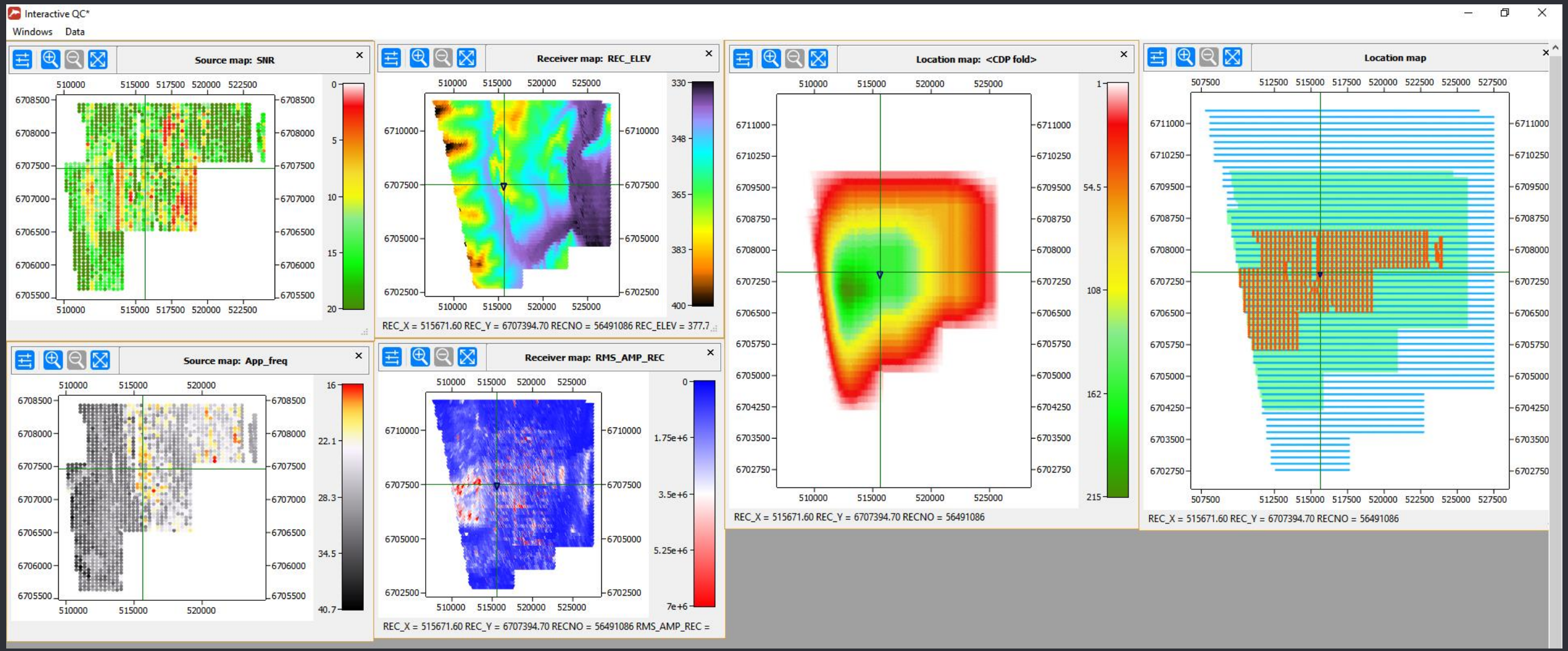
# Interactive QC tool – fully synchronized SP/RP/SMP attribute maps, SMP fold map, location map



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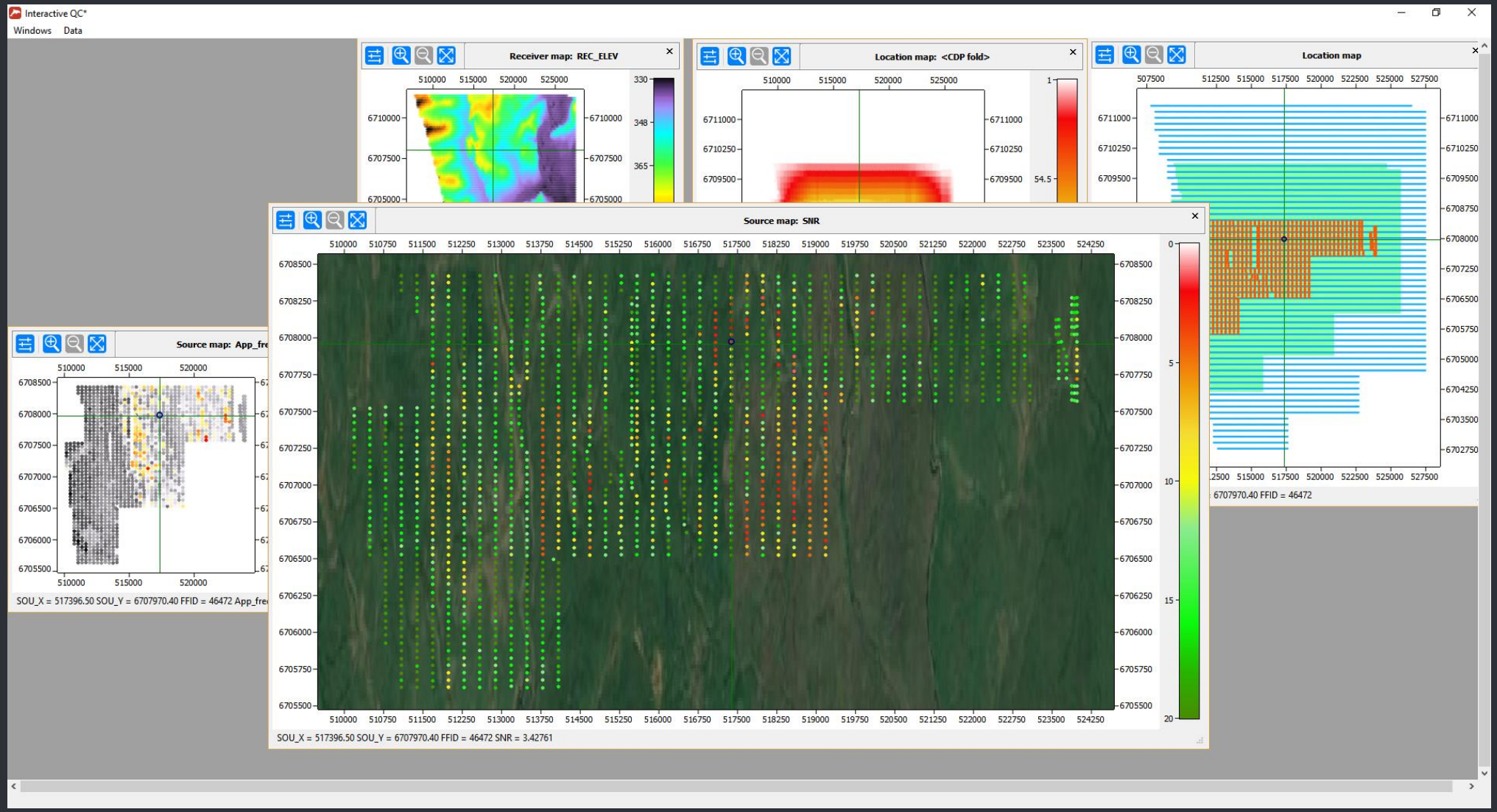
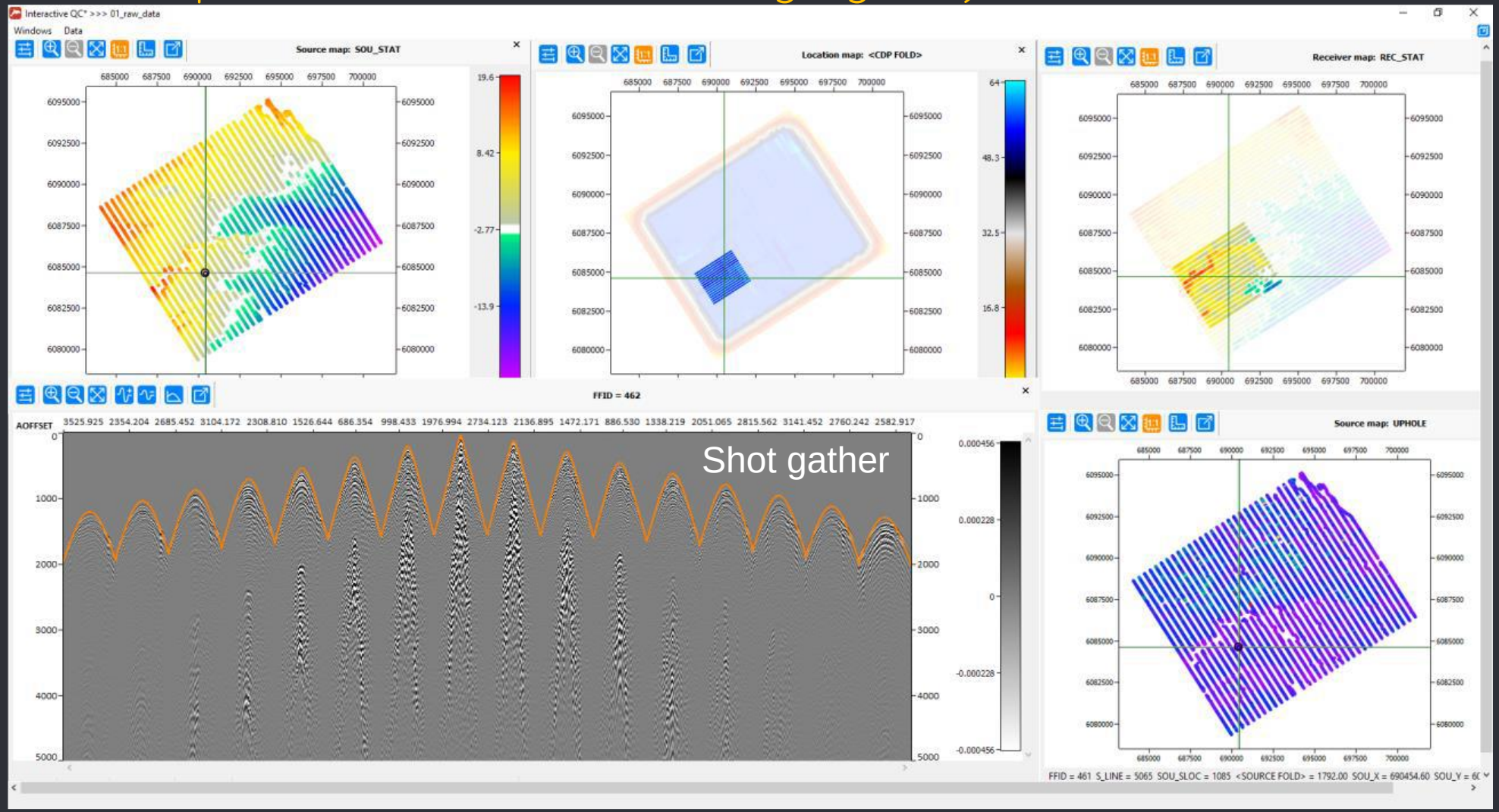
# Interactive QC tool – use bitmap background on any map



RadExPro seismic software

for QC and infield processing

# Interactive QC tool – one click for seismic gather display (active template, SP, RP and CMP are highlighted)



RadExPro seismic software

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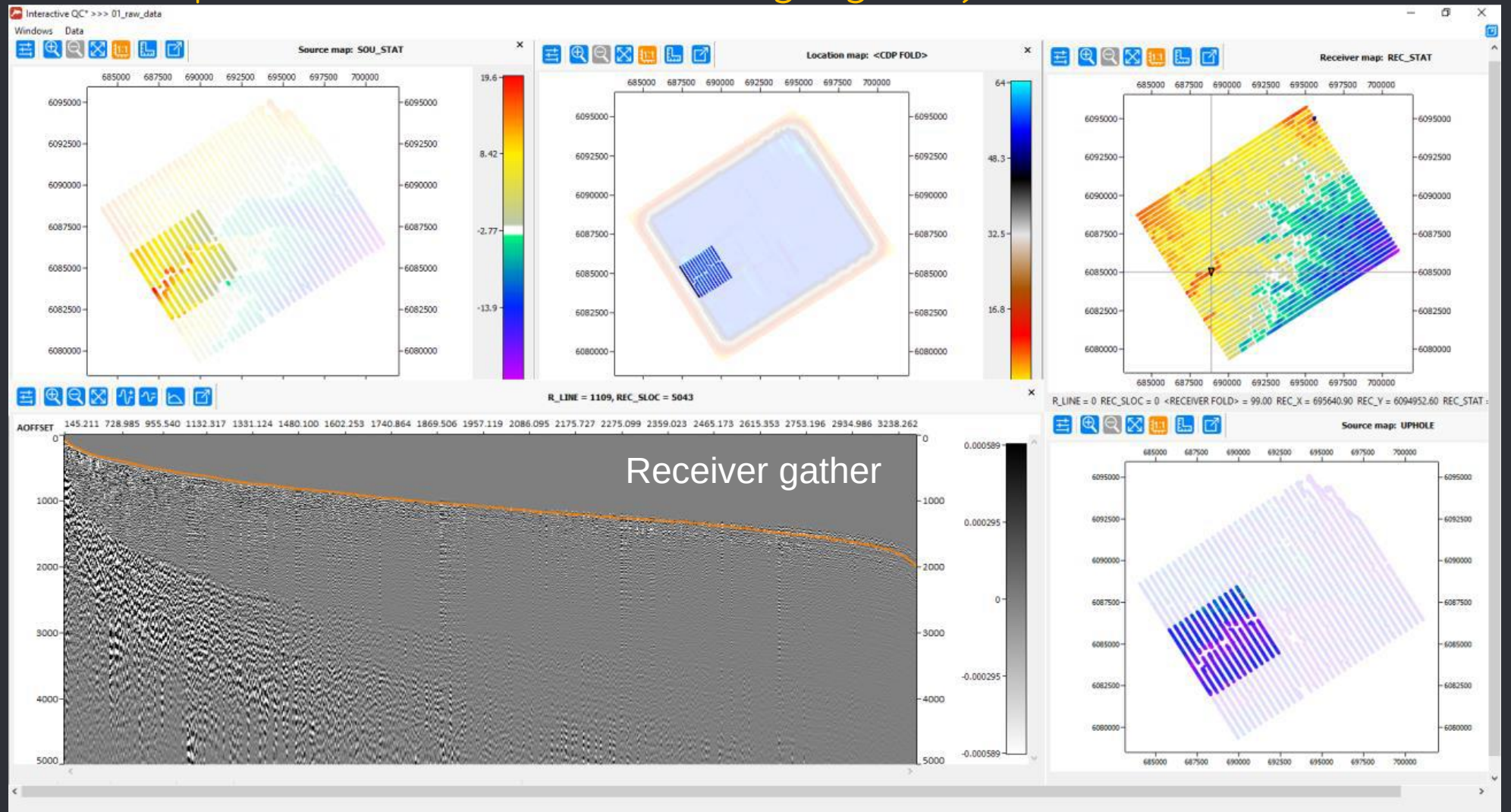

RadExPro seismic software

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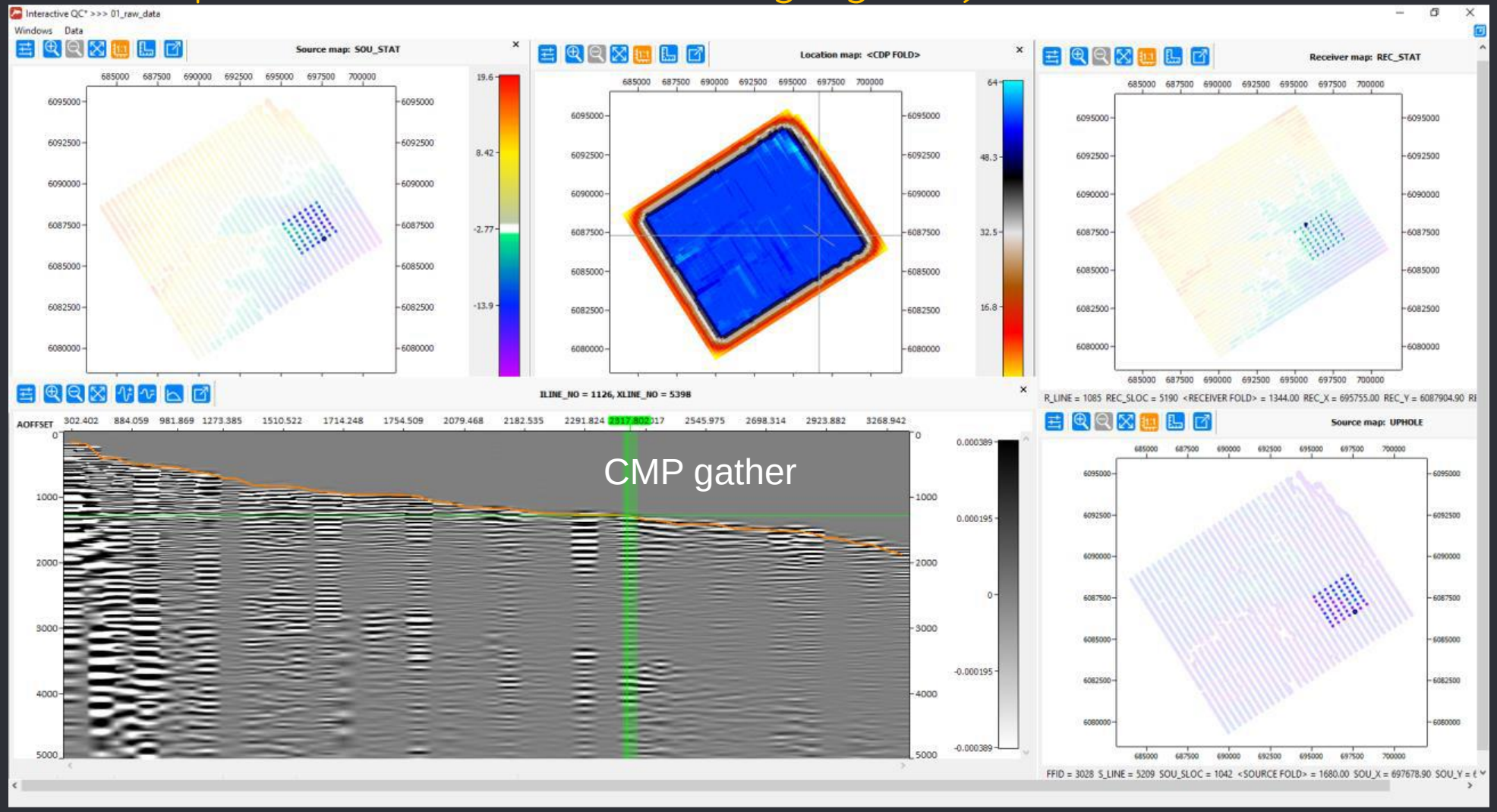

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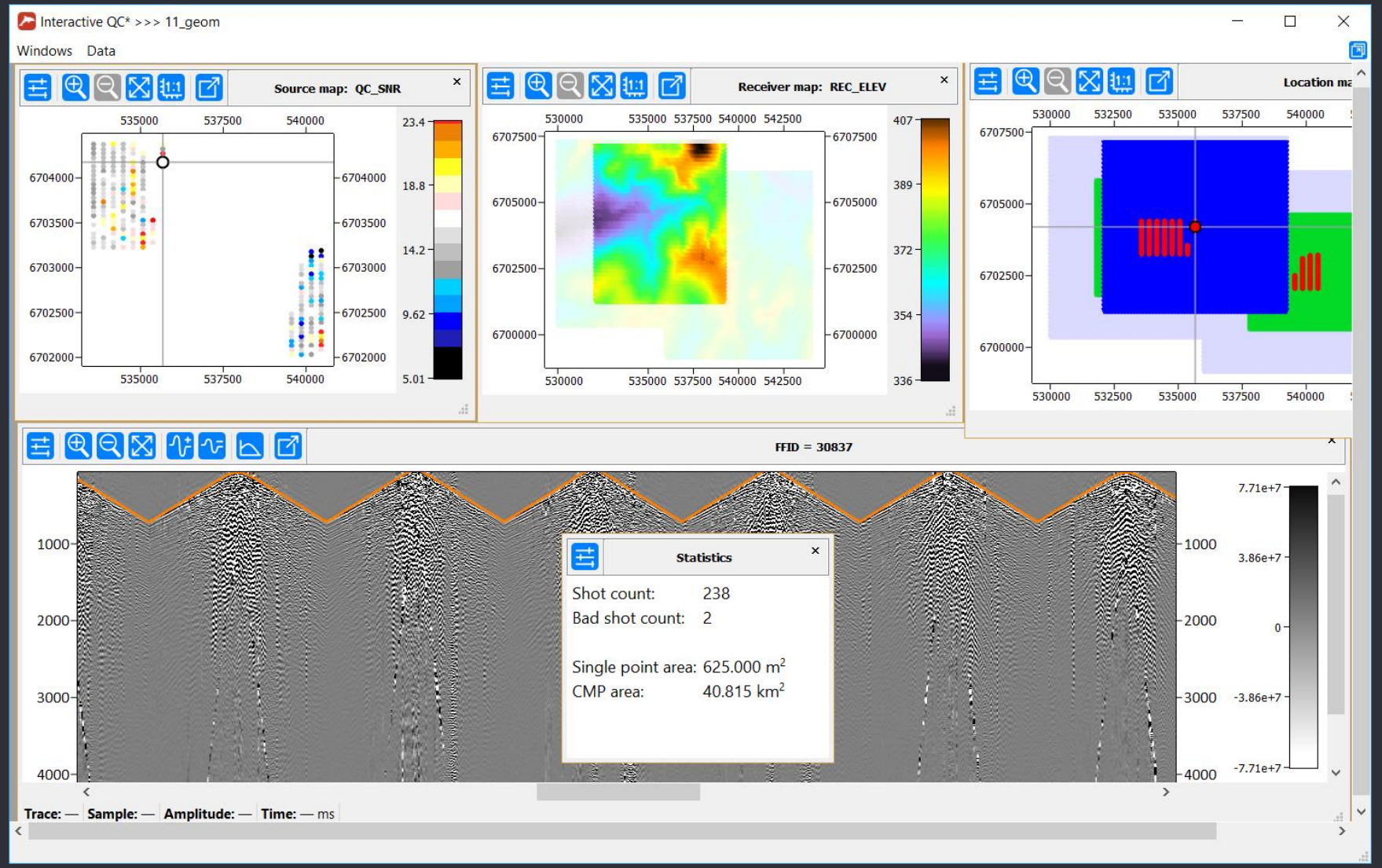
# Statistics



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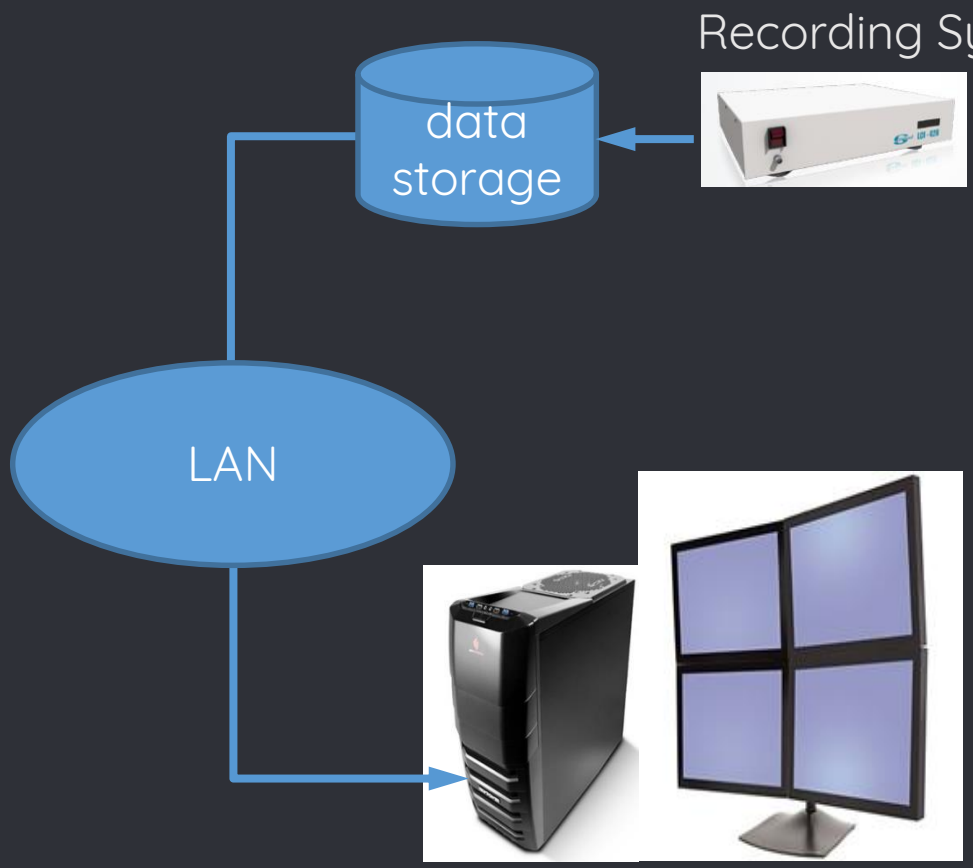
RadExPro REAL-TIME

# Real-Time QC of land data – data input as soon as it is acquired




QC processing PC with RadExPro Real-Time

RadExPro seismic software

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RadExPro REAL-TIME

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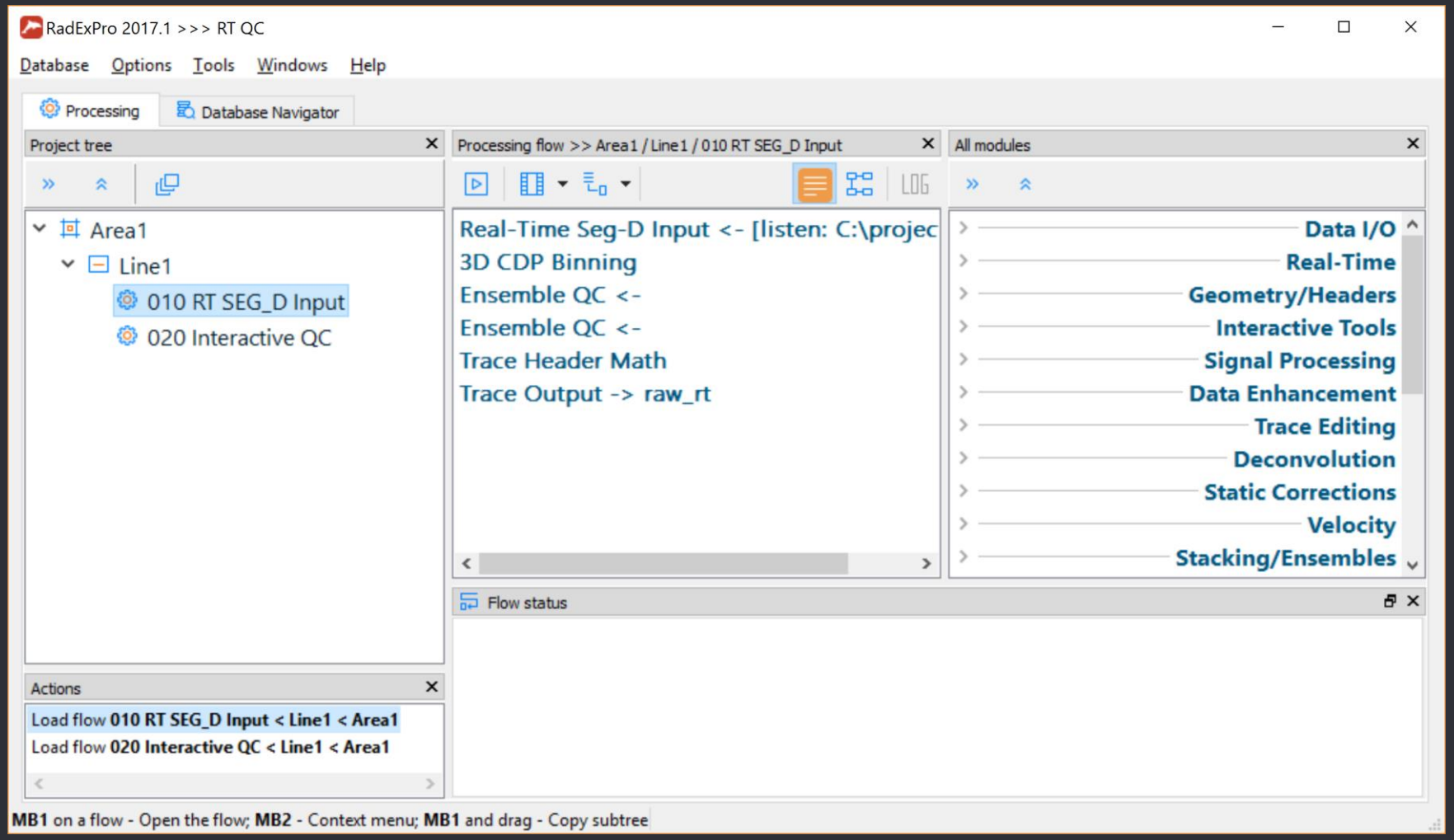

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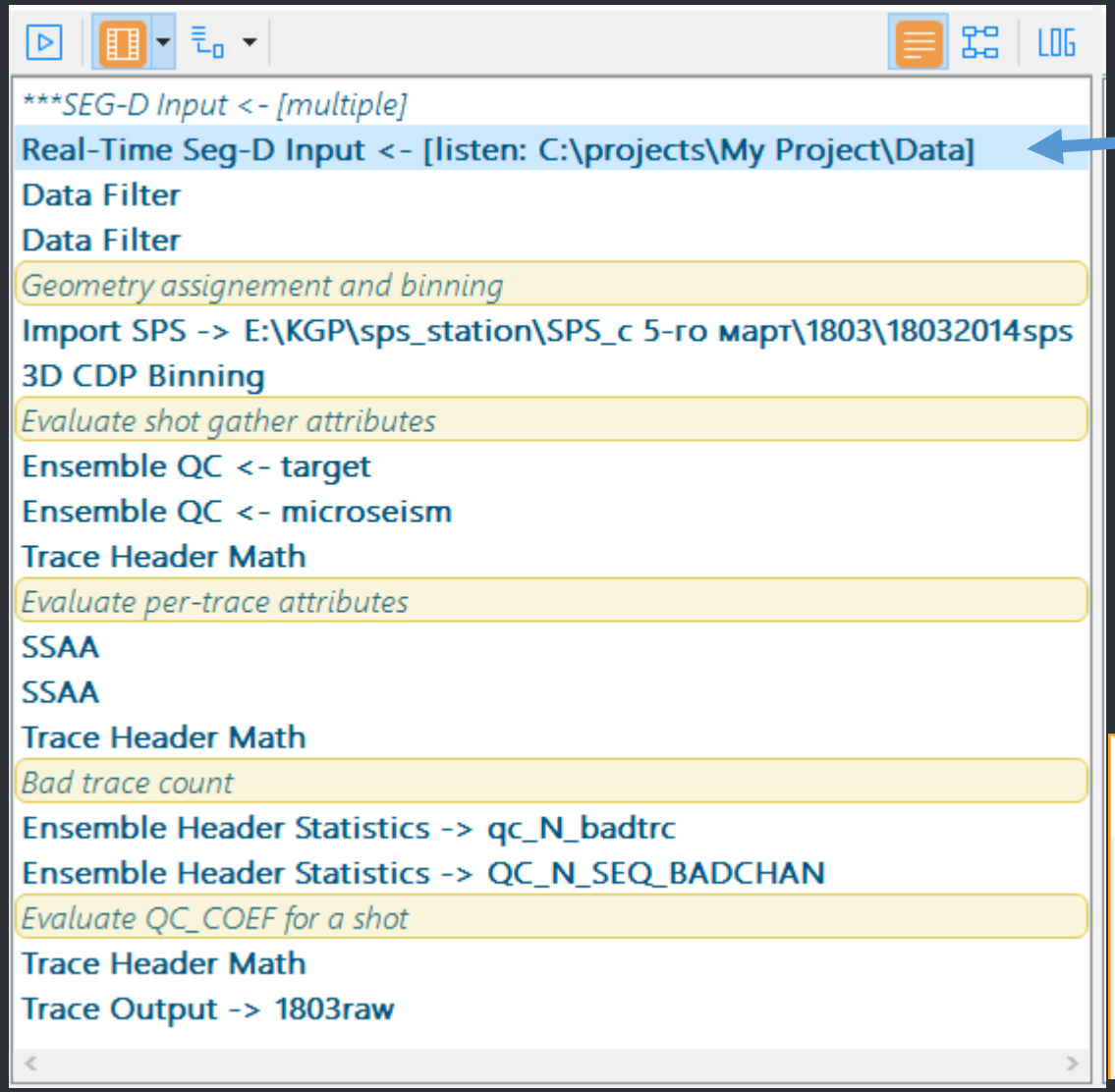


Real-Time SEG-D Input

Trace Header Math

```
qc_coef = cond(qc_f<30, 0, cond(qc_snr<5, 0, cond(qc_snr<10, 0.9, 1)))
qc_coef = cond(qc_N_badtrc>50, 0, qc_coef)
qc_coef = cond(qc_N_seq_badchan>3, 0, qc_coef)
```

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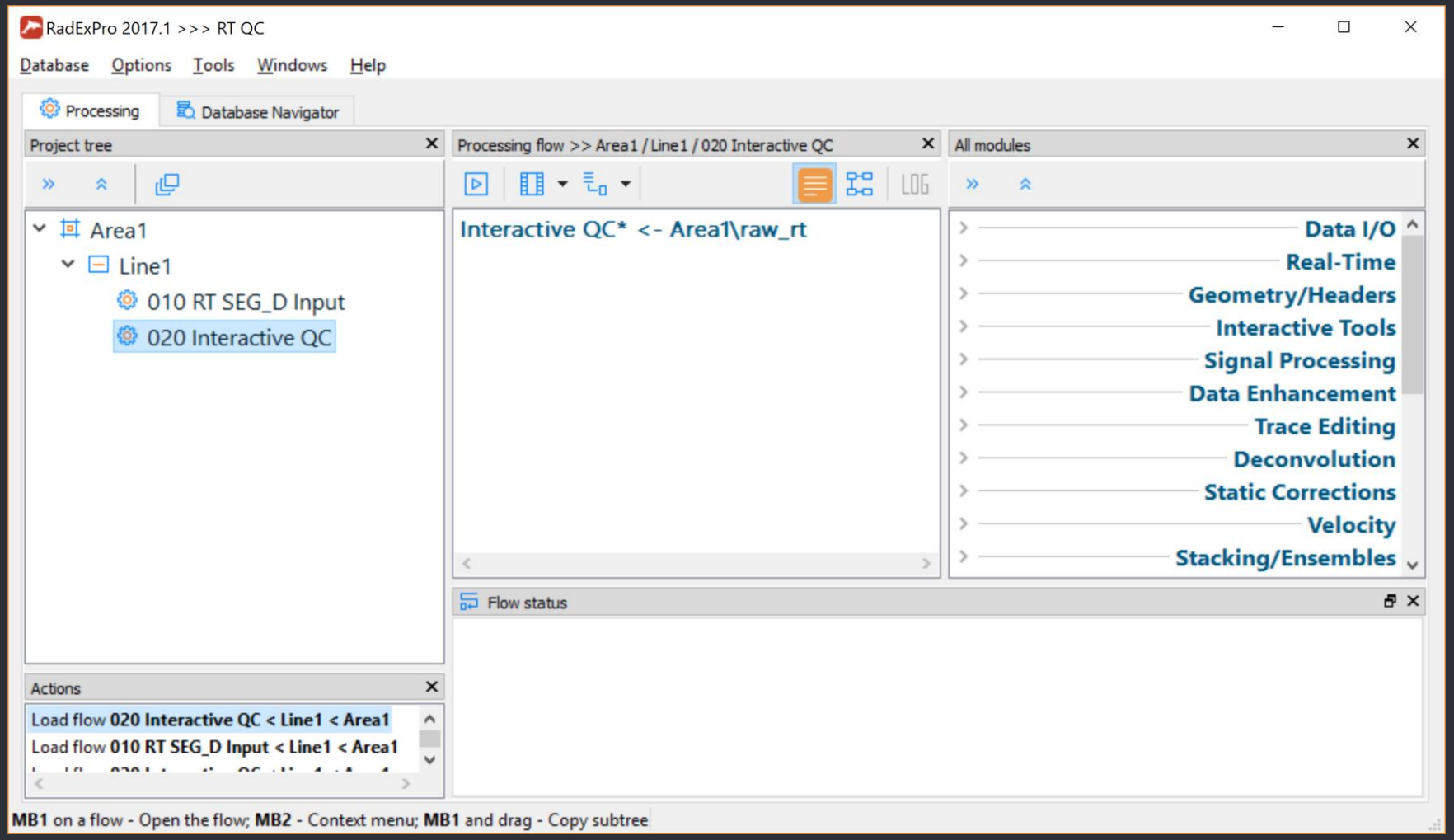
RadExPro REAL-TIME

# Real-Time QC of land data – interactive QC flow



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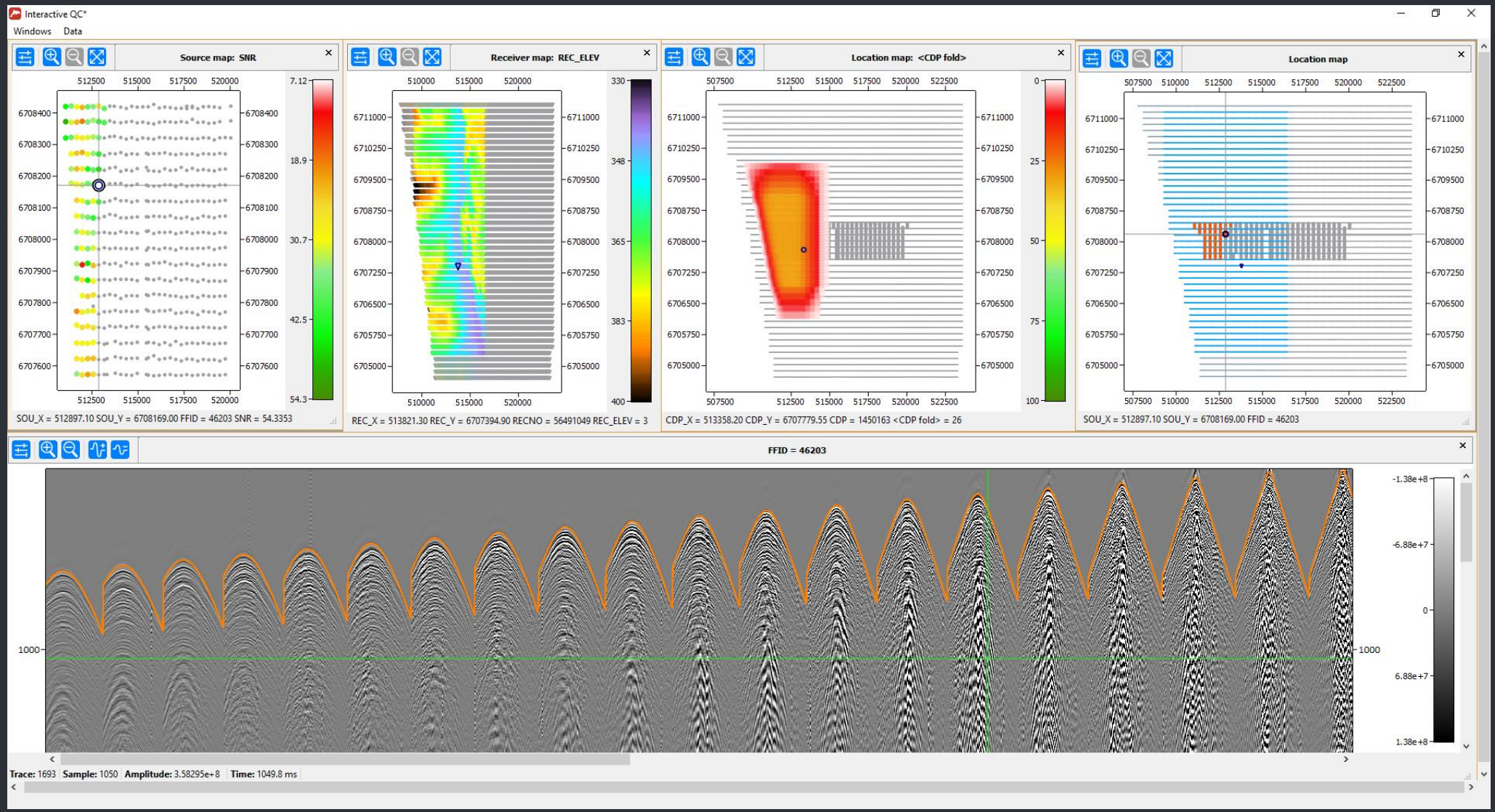
RadExPro REAL-TIME

# Interactive Real-Time QC of land data



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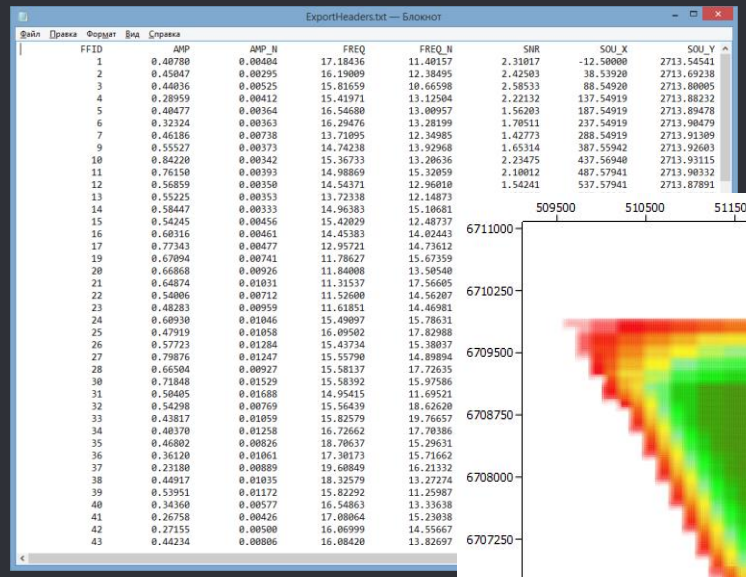
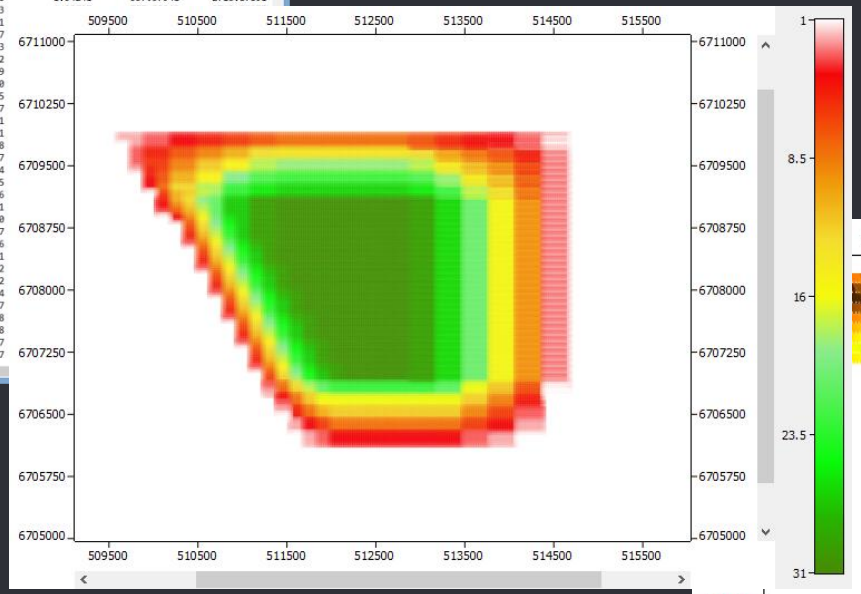
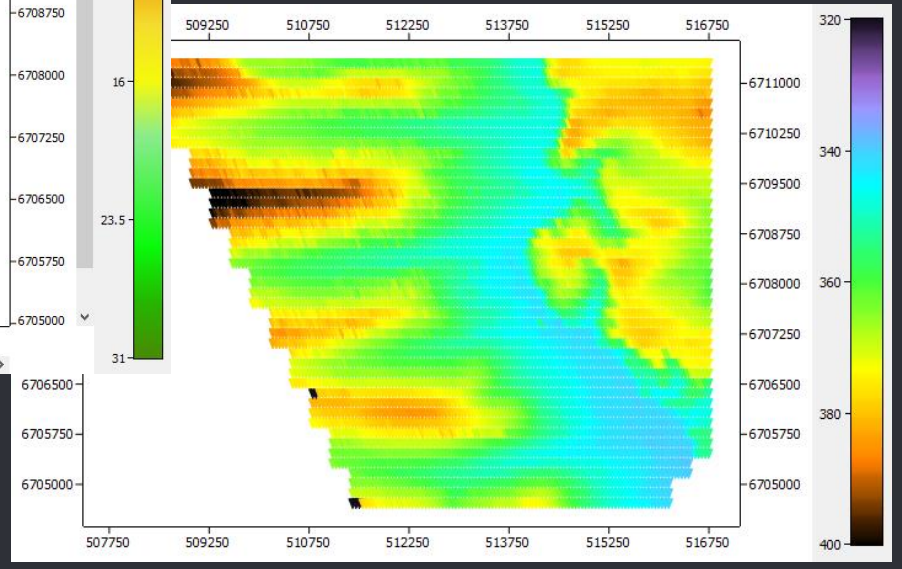
# Deliverables: attributes and coordinates




| FFID | AMP | AMP_N | FREQ | FREQ_N | SNR | SOU_X | SOU_Y |
|---|---|---|---|---|---|---|---|
| 1 | 0.40780 | 0.00404 | 17.18436 | 11.40157 | 2.31017 | -12.50000 | 2713.54541 |
| 2 | 0.45047 | 0.00295 | 16.19009 | 12.38495 | 2.42503 | 38.53920 | 2713.69238 |
| 3 | 0.44036 | 0.00525 | 15.81659 | 10.66598 | 2.58533 | 88.54920 | 2713.80005 |
| 4 | 0.28959 | 0.00412 | 15.41971 | 13.12504 | 2.22132 | 137.54919 | 2713.88232 |
| 5 | 0.40477 | 0.00364 | 16.54680 | 13.00957 | 1.56203 | 187.54919 | 2713.89478 |
| 6 | 0.32324 | 0.00363 | 16.29476 | 13.28199 | 1.70511 | 237.54919 | 2713.90479 |
| 7 | 0.46186 | 0.00738 | 13.71095 | 12.34985 | 1.42773 | 288.54919 | 2713.91309 |
| 9 | 0.55527 | 0.00373 | 14.74238 | 13.92968 | 1.65314 | 387.55942 | 2713.92603 |
| 10 | 0.84220 | 0.00342 | 15.36733 | 13.20636 | 2.23475 | 437.56940 | 2713.93115 |
| 11 | 0.76150 | 0.00393 | 14.98869 | 15.32059 | 2.10012 | 487.57941 | 2713.90332 |
| 12 | 0.56859 | 0.00350 | 14.54371 | 12.96010 | 1.54241 | 537.57941 | 2713.87891 |
| 13 | 0.55225 | 0.00353 | 13.72338 | 12.14873 | | | |
| 14 | 0.58447 | 0.00333 | 14.96383 | 15.10681 | | | |
| 15 | 0.54245 | 0.00456 | 15.42029 | 12.48737 | | | |
| 16 | 0.60316 | 0.00461 | 14.45383 | 14.02443 | | | |
| 17 | 0.77343 | 0.00477 | 12.95721 | 14.73612 | | | |
| 19 | 0.67094 | 0.00741 | 11.78627 | 15.67359 | | | |
| 20 | 0.66868 | 0.00926 | 11.84008 | 13.50540 | | | |
| 21 | 0.64874 | 0.01031 | 11.31537 | 17.56605 | | | |
| 22 | 0.54006 | 0.00712 | 11.52600 | 14.56207 | | | |
| 23 | 0.48283 | 0.00959 | 11.61851 | 14.46981 | | | |
| 24 | 0.60930 | 0.01046 | 15.49097 | 15.78631 | | | |
| 25 | 0.47919 | 0.01058 | 16.09502 | 17.82988 | | | |
| 26 | 0.57723 | 0.01284 | 15.43734 | 15.38037 | | | |
| 27 | 0.79876 | 0.01247 | 15.55790 | 14.89894 | | | |
| 28 | 0.66504 | 0.00927 | 15.58137 | 17.72635 | | | |
| 30 | 0.71848 | 0.01529 | 15.58392 | 15.97586 | | | |
| 31 | 0.50405 | 0.01688 | 14.95415 | 11.69521 | | | |
| 32 | 0.54298 | 0.00769 | 15.56439 | 18.62620 | | | |
| 33 | 0.43817 | 0.01059 | 15.82579 | 19.76657 | | | |
| 34 | 0.40370 | 0.01258 | 16.72662 | 17.70386 | | | |
| 35 | 0.46802 | 0.00826 | 18.70637 | 15.29631 | | | |
| 36 | 0.36120 | 0.01061 | 17.30173 | 15.71662 | | | |
| 37 | 0.23180 | 0.00889 | 19.60849 | 16.21332 | | | |
| 38 | 0.44917 | 0.01035 | 18.32579 | 13.27274 | | | |
| 39 | 0.53951 | 0.01172 | 15.82292 | 11.25987 | | | |
| 40 | 0.34360 | 0.00577 | 16.54863 | 13.33638 | | | |
| 41 | 0.26758 | 0.00426 | 17.08064 | 15.23038 | | | |
| 42 | 0.27155 | 0.00500 | 16.06999 | 14.55667 | | | |
| 43 | 0.44234 | 0.00806 | 16.08420 | 13.82697 | | | |




- Export to ASCII
- Save images

RadExPro seismic software

for QC and infield processing

# Infield Processing

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for QC and infield processing

# Infield processing

- ## Complete set of industry-standard algorithms

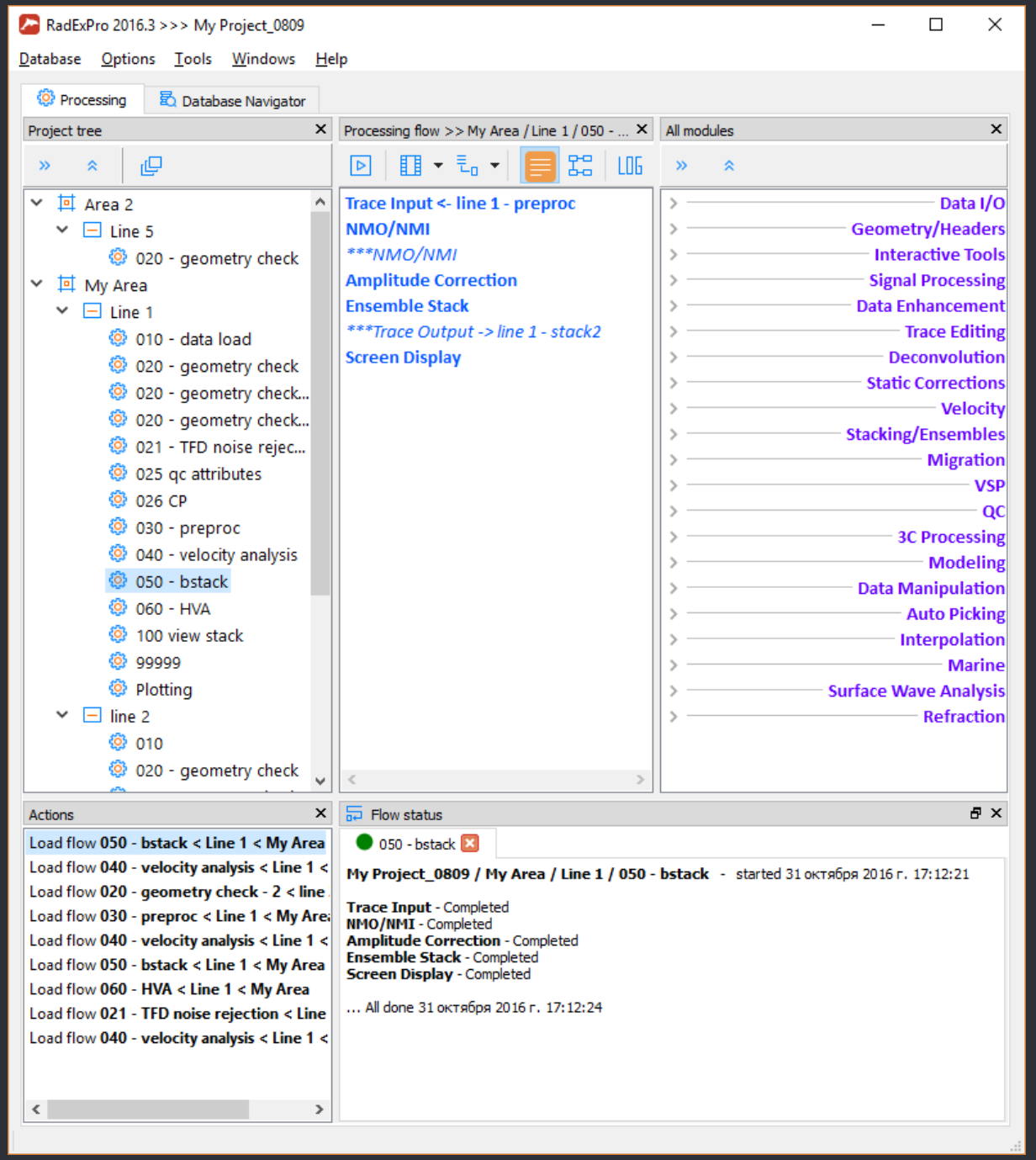
  Vibroseis correlation, trace editing, band-pass and 2D filtering, ground-roll suppression, amplitude correction, deconvolutionms, interactive velocity analysis, statics, NMO-correction, regularization, stacking, pre-stack and post-stack migrations, etc.

- ## Handy data management tools

  - Processing in projects, data is stored together with processing parameters
  - Processing history is available for each dataset

- ## Efficiently handle data of any size

  - Framed mode of flow execution
  - Fast resorting of big data volumes
  - Parallelization



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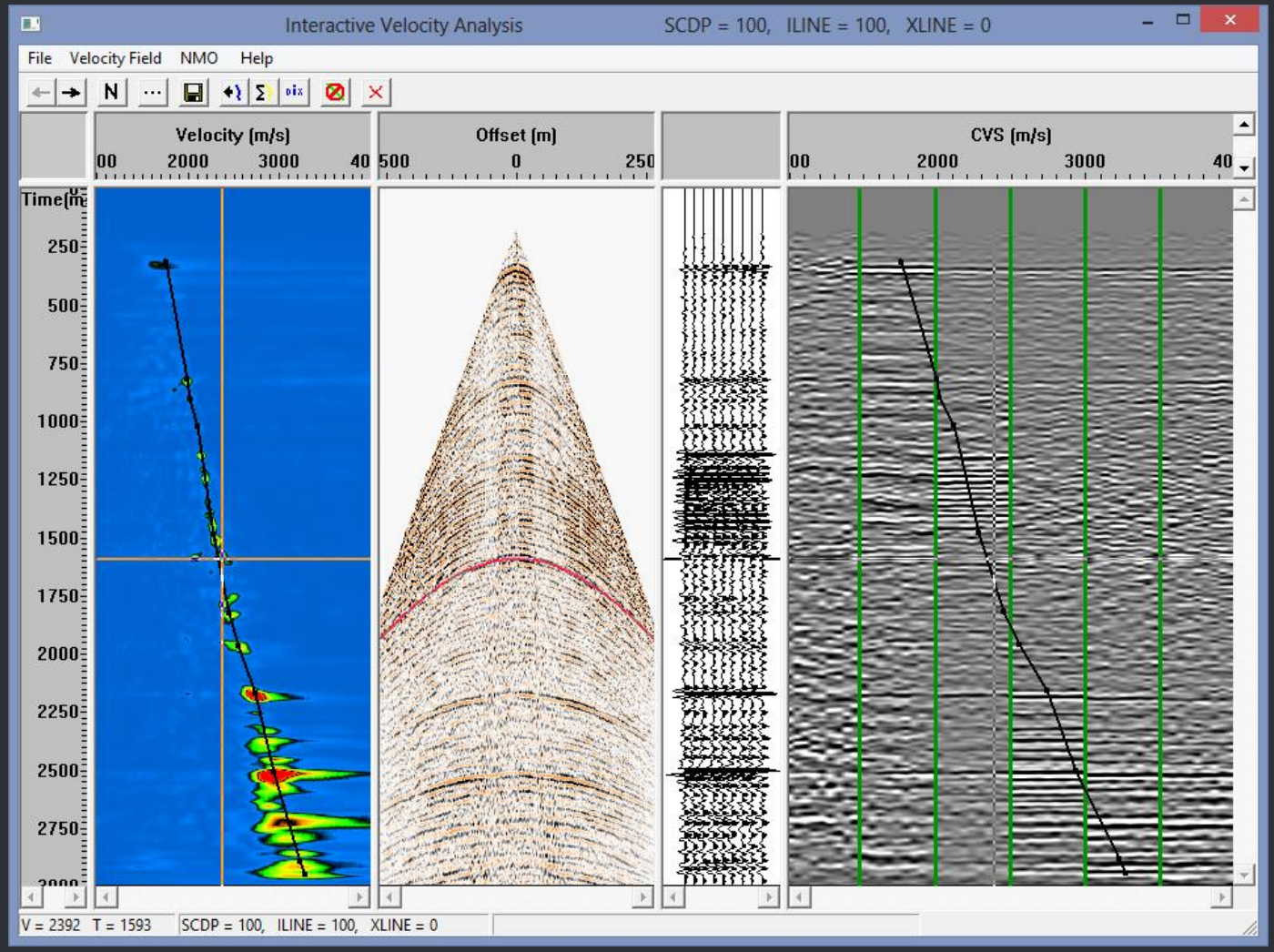
# Interactive Velocity Analysis



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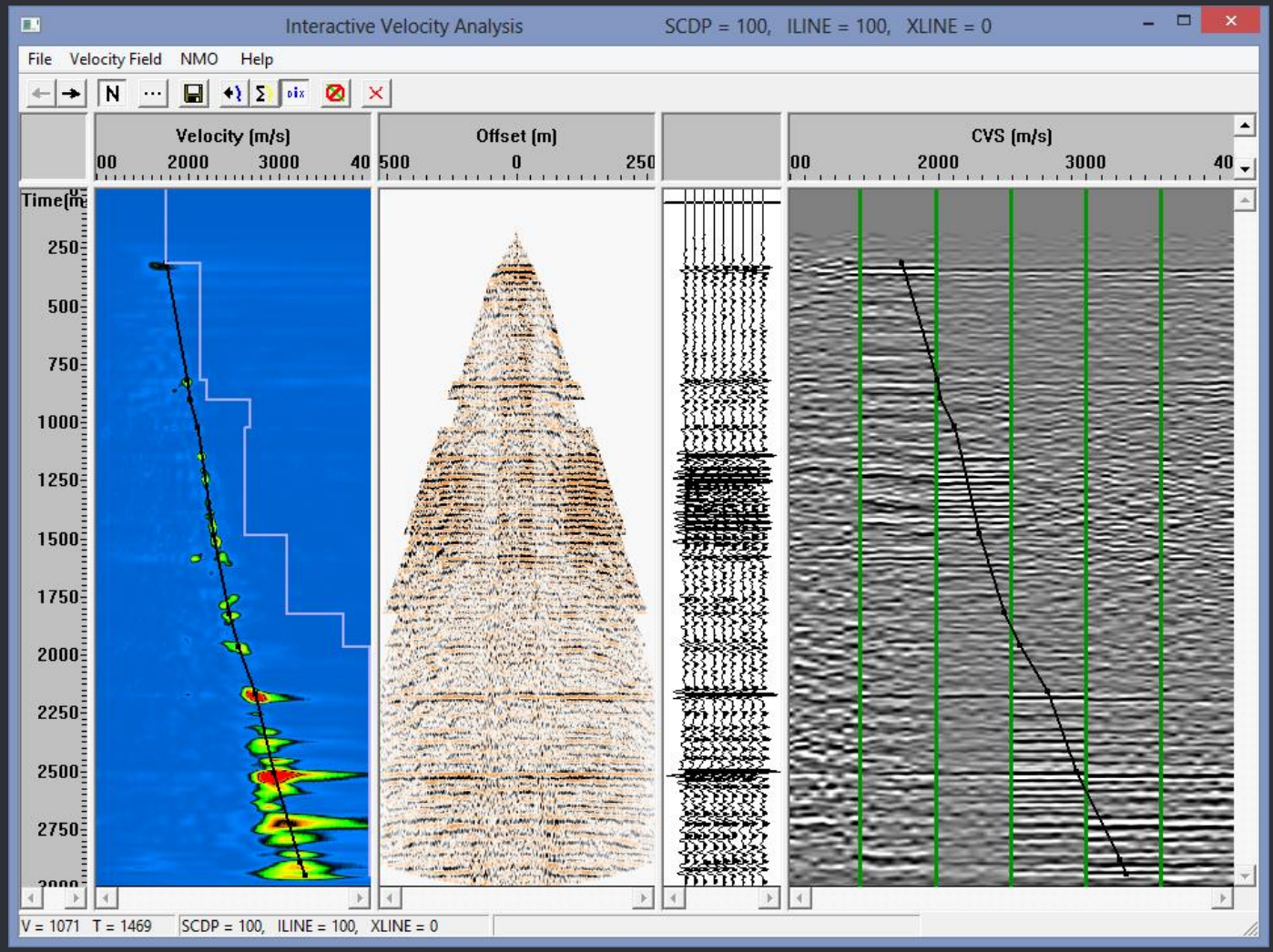

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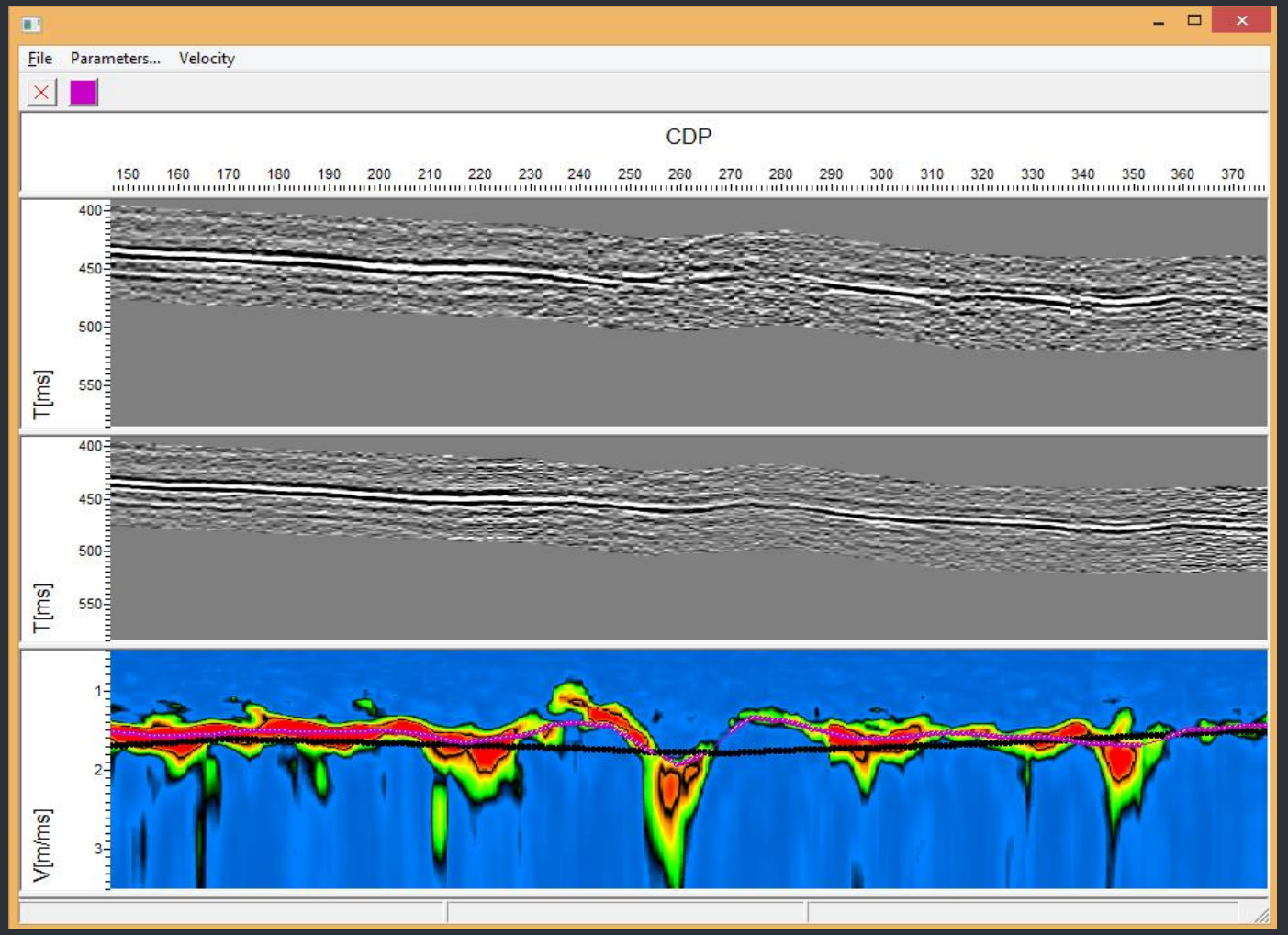
# Horizontal Velocity Analysis



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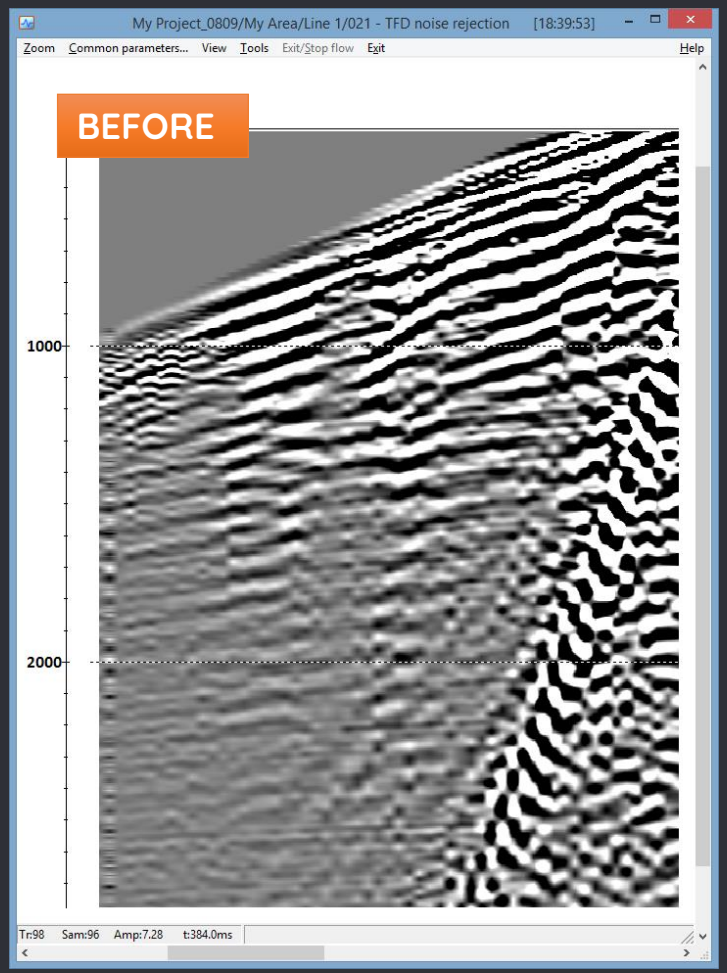
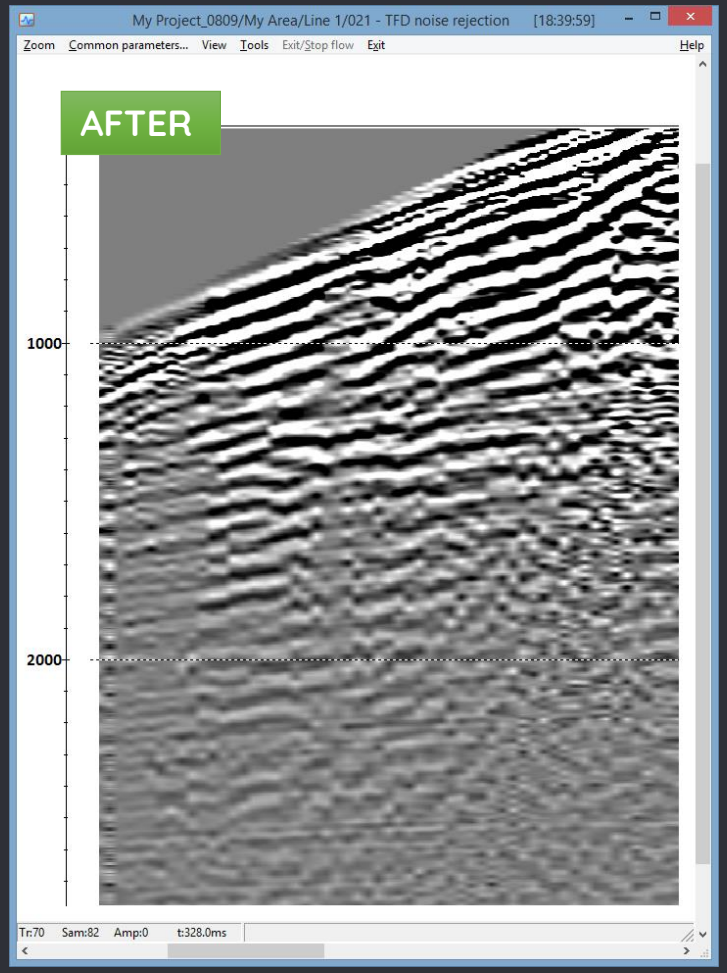
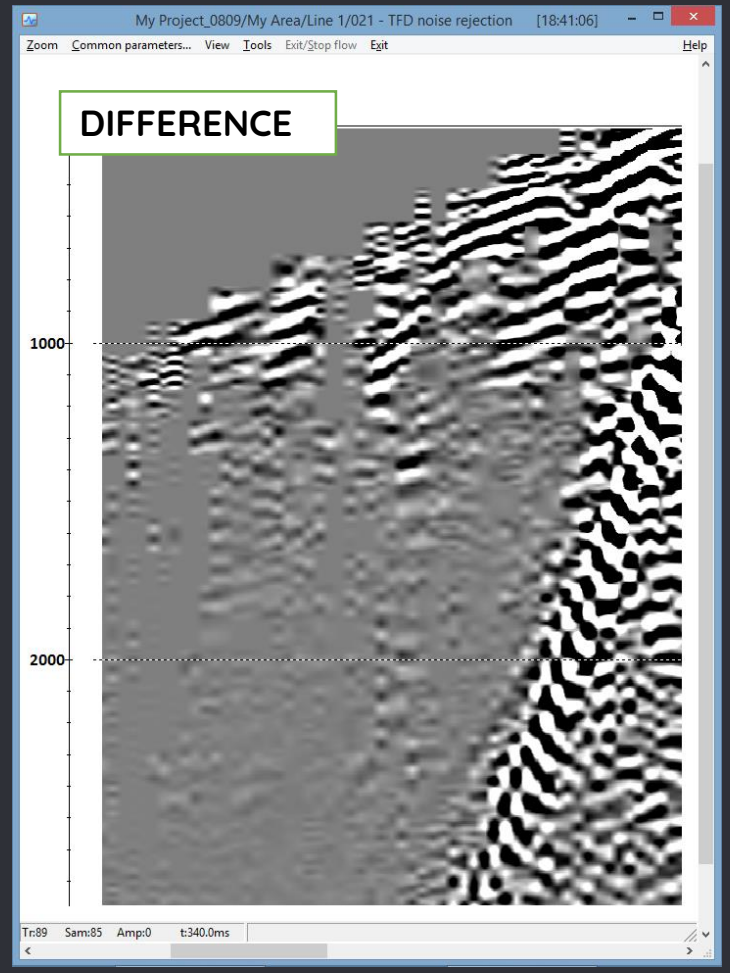
# Automatically synchronized displays: before processing, after processing and the difference



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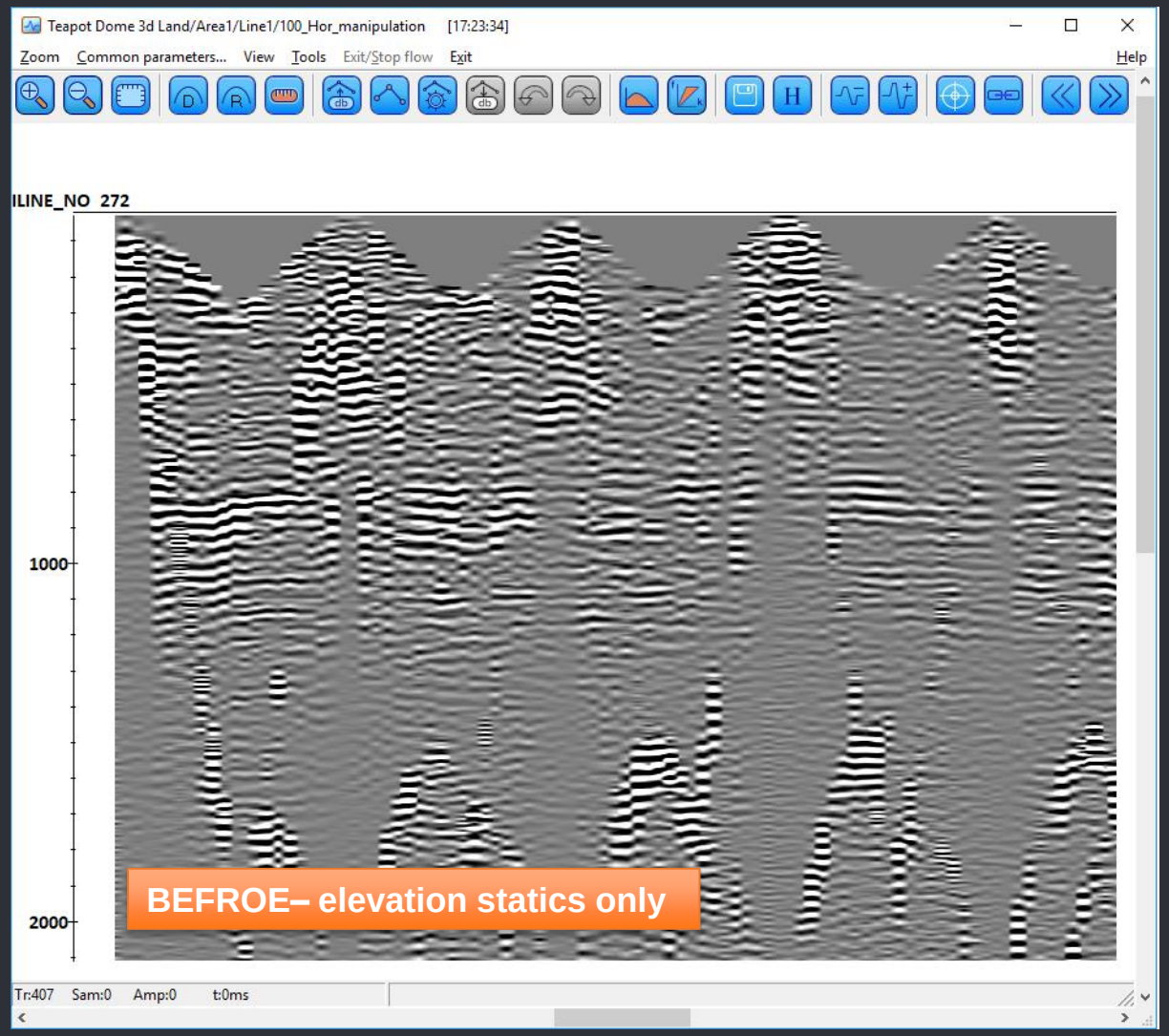
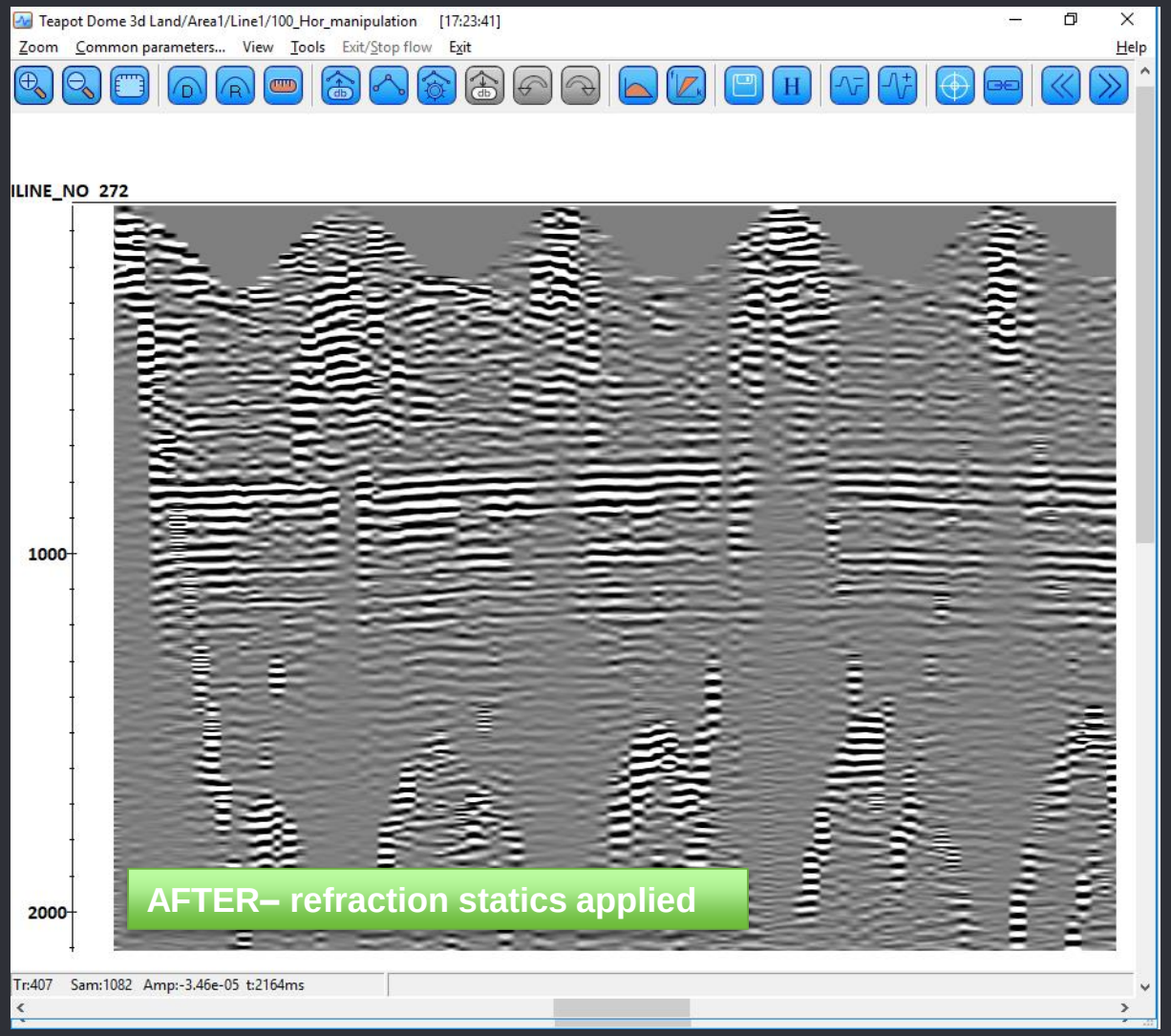
# Refraction statics



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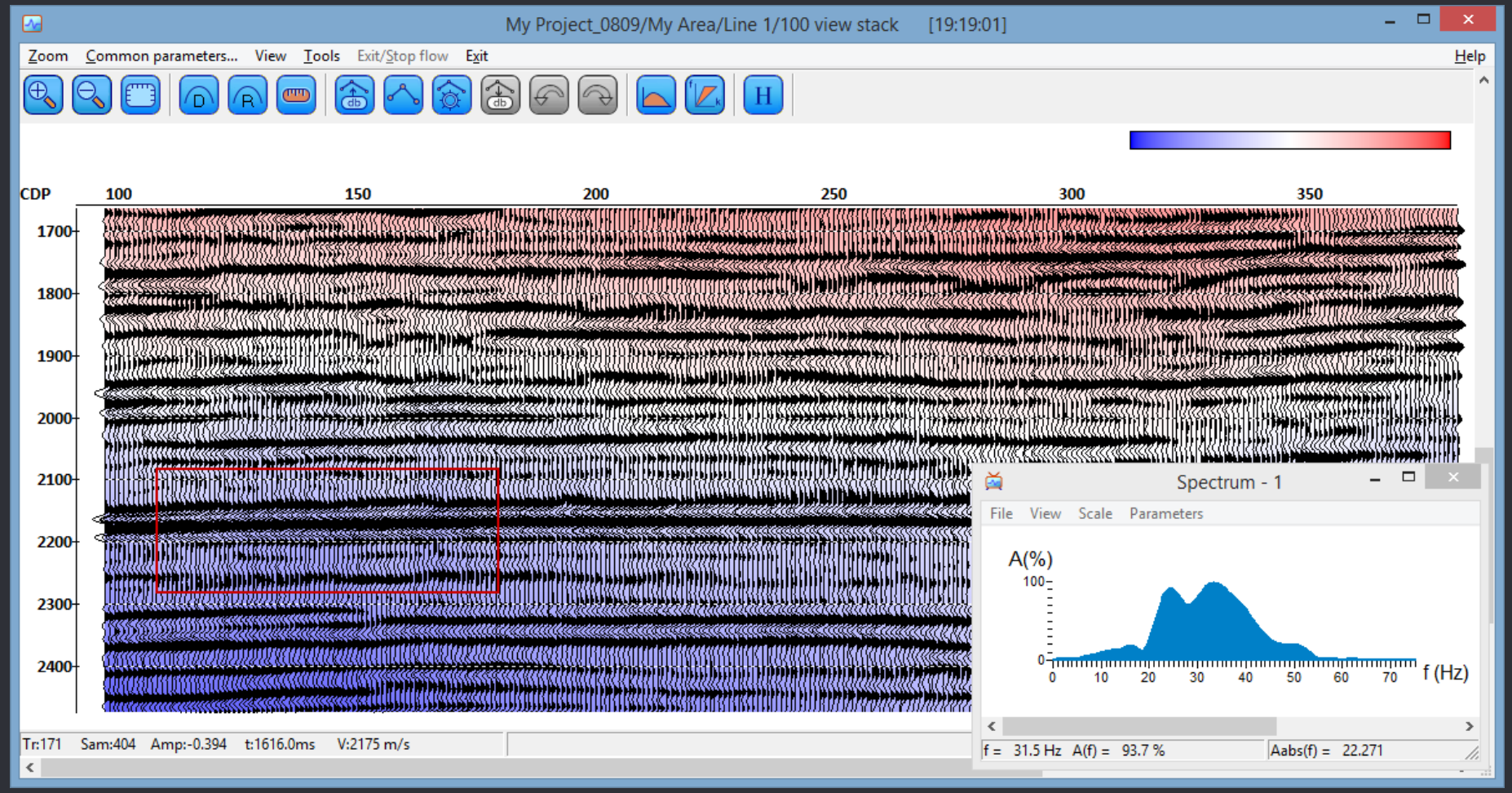
# Simultaneous display of seismic and velocity sections



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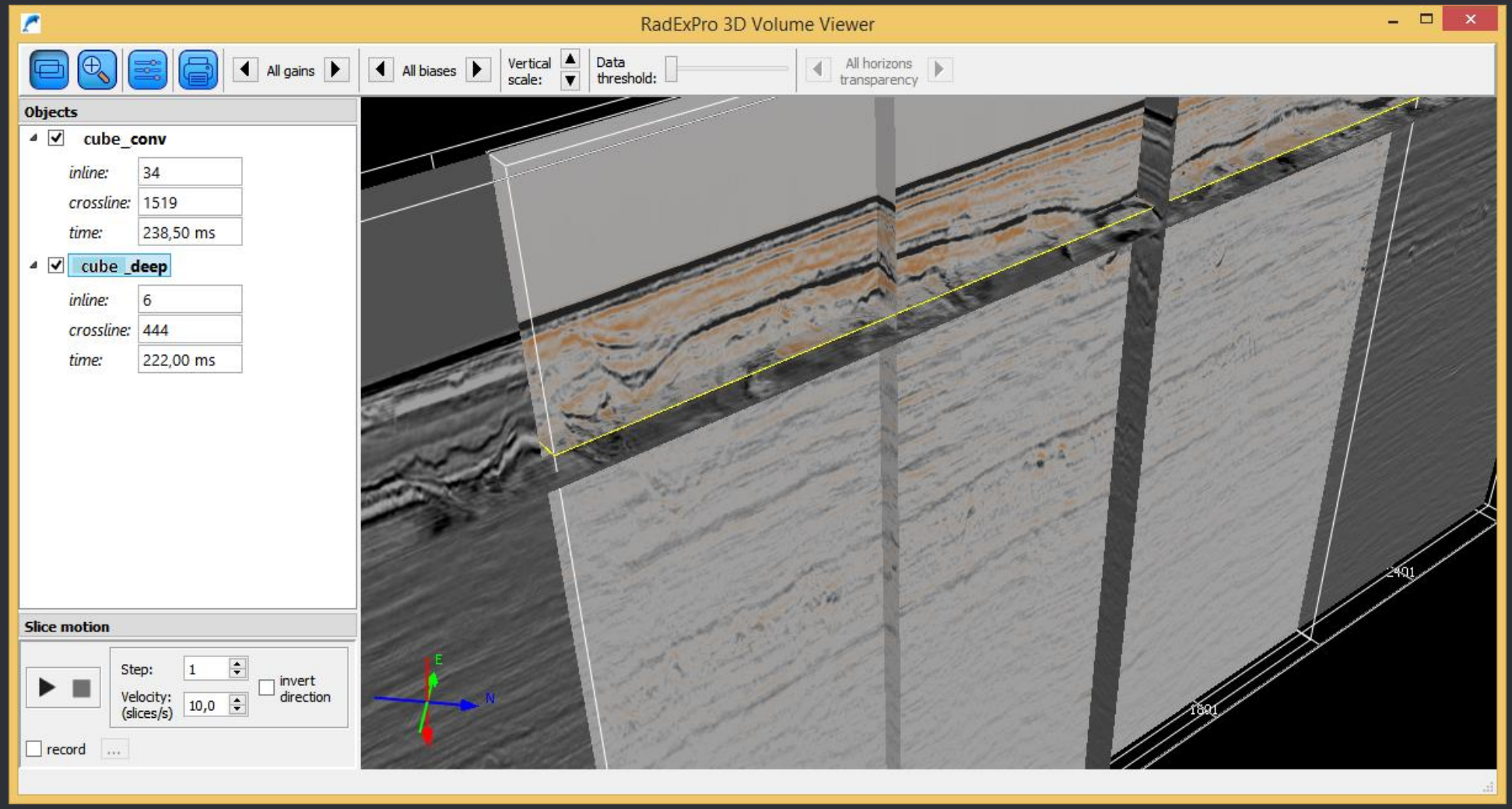
# 3D display of several cubes and 2D lines at once



RadExPro seismic software

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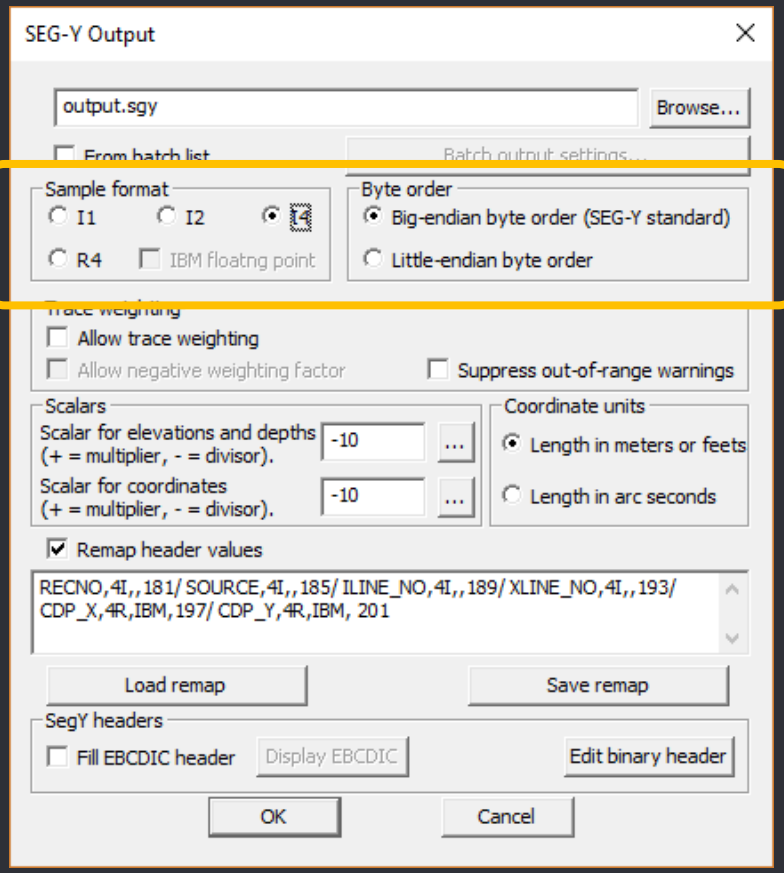
# Deliverables: Export to SEG-Y is fully customizable!




- Any sample format and byte order

RadExPro seismic software

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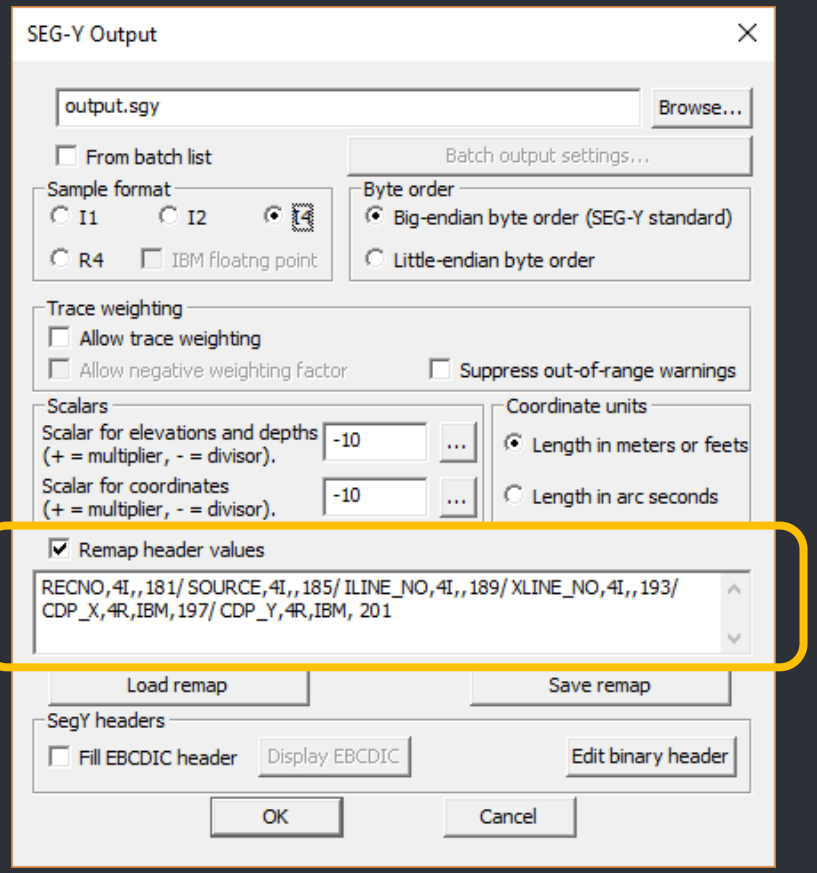


- Any sample format and byte order
- Trace header remaping

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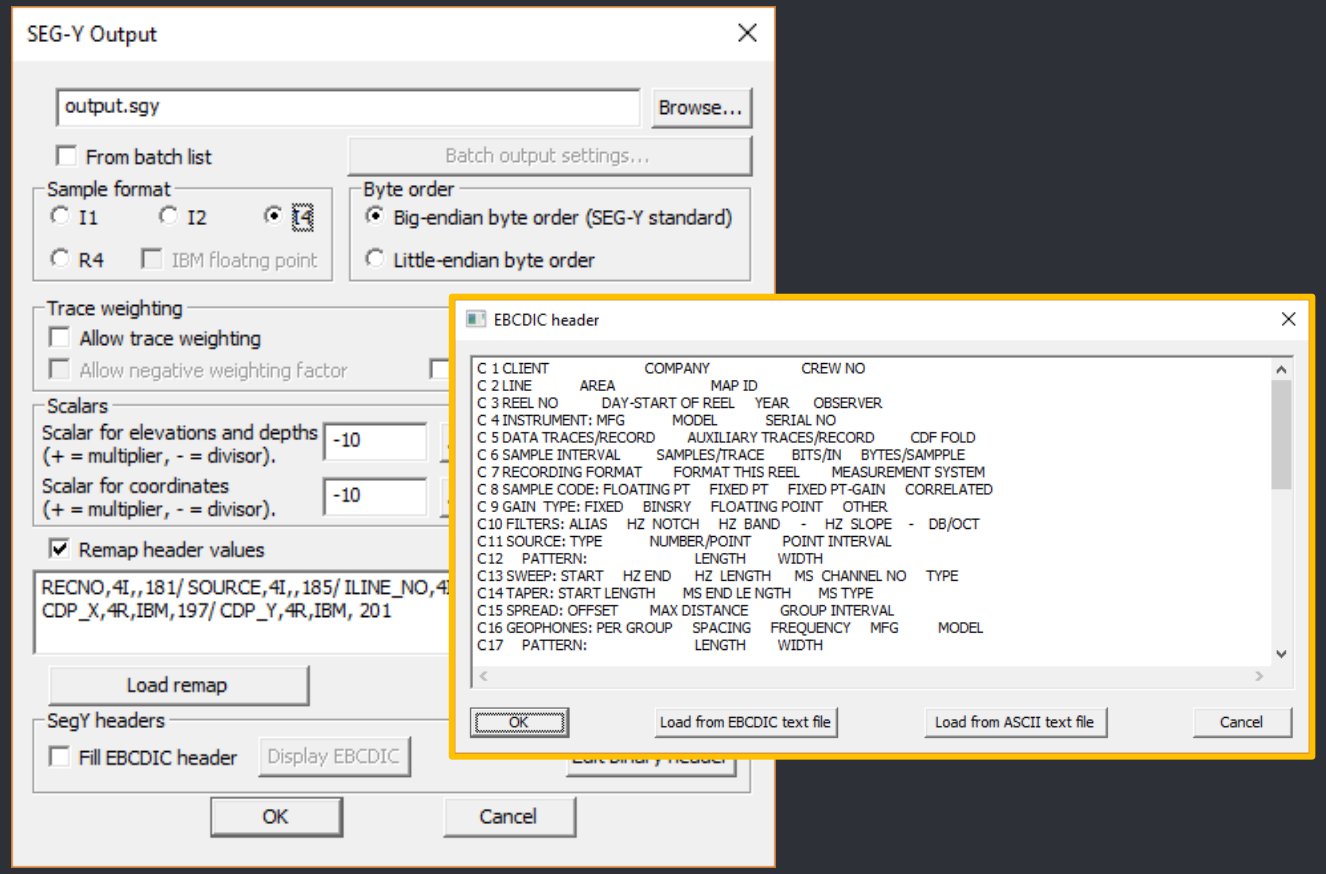


- Any sample format and byte order
- Trace header remaping
- Edit EBCDIC textual header

RadExPro seismic software

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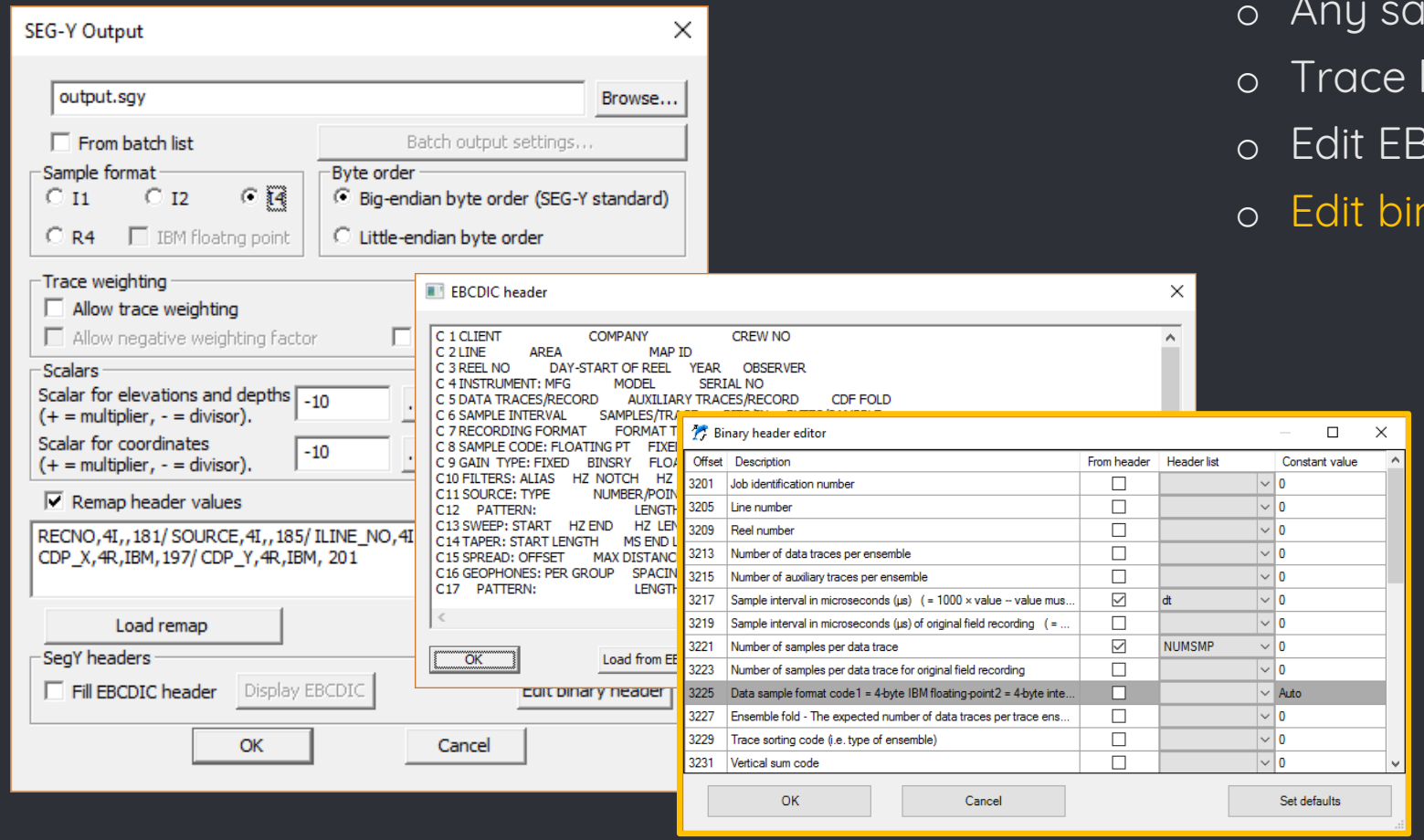


- Any sample format and byte order
- Trace header remaping
- Edit EBCDIC textual header
- Edit binary header

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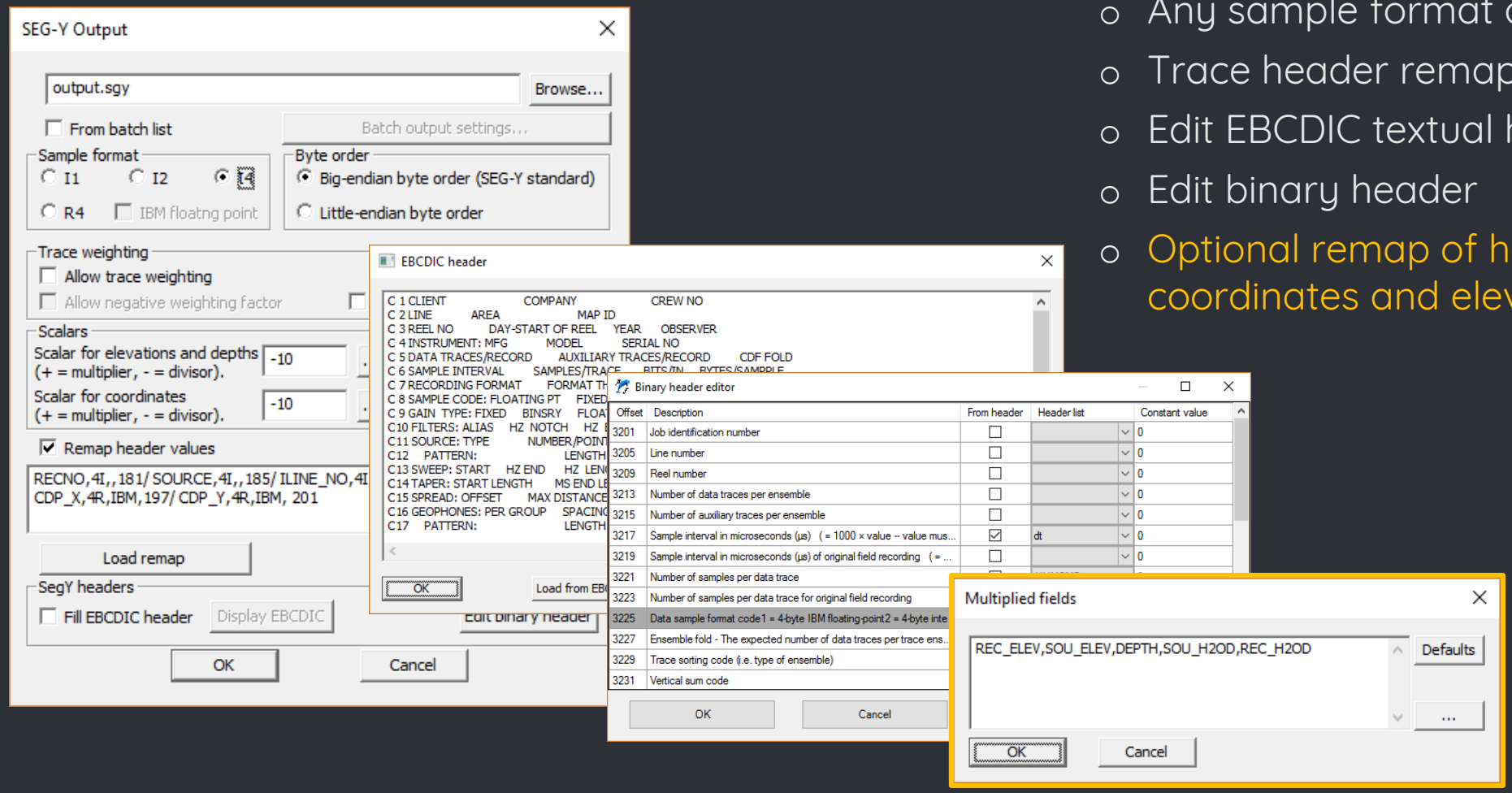
for QC and infield processing

# Deliverables: Export to SEG-Y is fully customizable!




- Any sample format and byte order
- Trace header remaping
- Edit EBCDIC textual header
- Edit binary header
- Optional remap of headers affected by coordinates and elevation scalars

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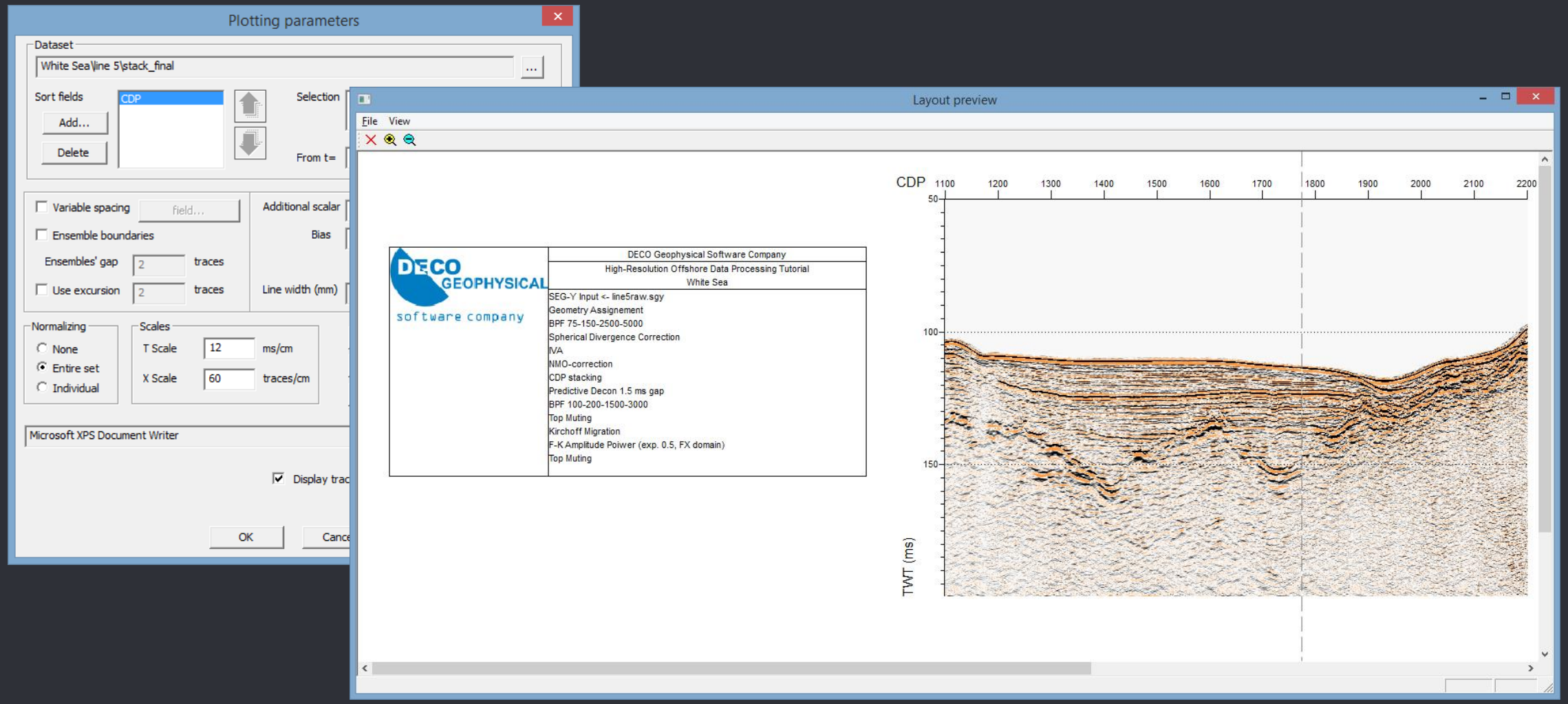
# Deliverables: print with preview!



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# Open architecture

Missing some specific algorithm?

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# Open architecture

Missing some specific algorithm?
Code it yourself and get it integrated into the system!

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# Open architecture

Missing some specific algorithm?
Code it yourself and get it integrated into the system!

- We provide open API for developing your own modules on C++.
- A dedicated Wizard for MS Visual C++ will generate an empty processing module for you, you will only need to populate it with your own processing code.

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THANK YOU FOR YOUR ATTENTION!

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