REAL-TIME QC SOFTWARE
MARINE

RadExPro REAL-TIME

seismic software

REAL-TIME ON-LINE SEISMIC QC FOR MARINE OPERATIONS

Real–time QC is onboard seismic source and data quality control as soon as the data is received during 3D or 2D marine seismic acquisition, providing instant confirmation of the data quality without slowing down seismic crew operations. It is aimed to identify any problems with seismic acquisition at the very same moment when they happen. This allows seismic crew fixing the problems immediately, minimizing related loss of operational time and money.

Typical real–time QC products include the following:

> **Source control products:** near–field hydrophone signature, bubble peak amplitude, time and period maps and plots, source towing depth plots, flip–flop source identity plots.
> **Data control products:** shot gathers, near–trace gathers, SOR/EOR/TARGET RMS amplitude maps, signal–to–noise ratio map, real–time 2D CMP/CSS stacks, frequency plots.

This set of products helps to control what is happening on board related to seismic acquisition. By monitoring them, QC personnel and/or observers can easily identify out-of-spec issues like bad shots, dead or weak channels, source air leakages, misfires, flip–flop source identity loss, low signal–to–noise ratio, strong noises, etc. Many of these issues require immediate action and reporting.

HIGH PERFORMANCE – LOW OVERHEADS

The software runs locally on a PC, saving processing time of your claster nodes. It connects to the data storage and input a shot record as soon as it is written. Each shot is read only once, to avoid network overload. After a shot is loaded into the local RAM of the PC, it is input to the pre–defined QC flows that all run in parallel locally. All real–time displays run and update locally as well, without slowing down the network.

This, along with the optimized processing algorithms, allows QC of the data from thousands of channels in *true real–time*, (typical delays are *less than 1/2 minute*) using just a good modern PC with a multi–core CPU, 64–bit Windows OS and several monitors. Compare this to some conventional QC packages, which claim to be real–time, while in practice have dozens of shots delayed even when working on a powerful Linux cluster…
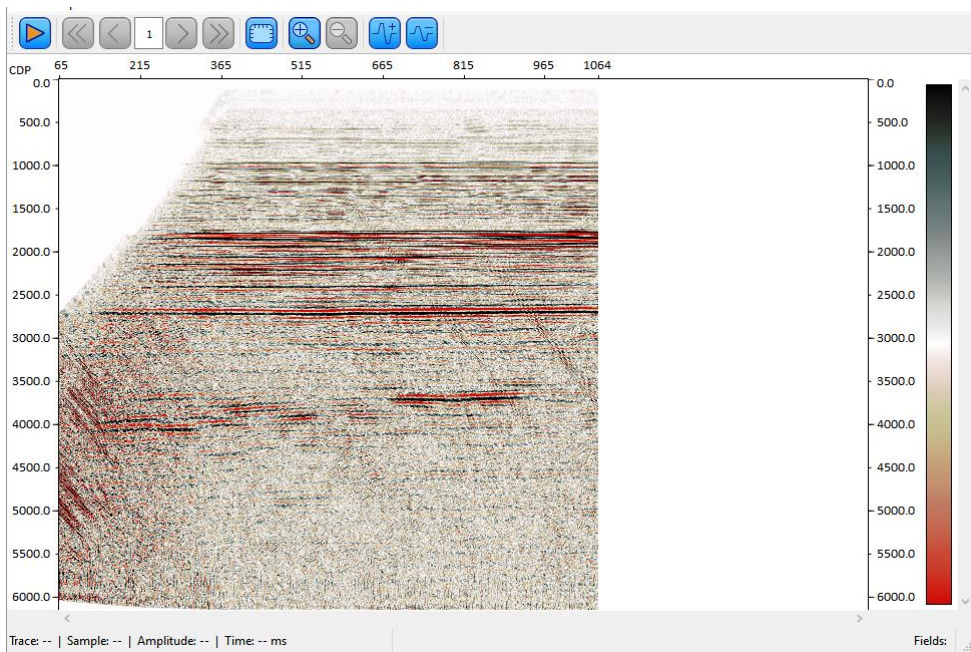
HOW DOES IT LOOK LIKE?
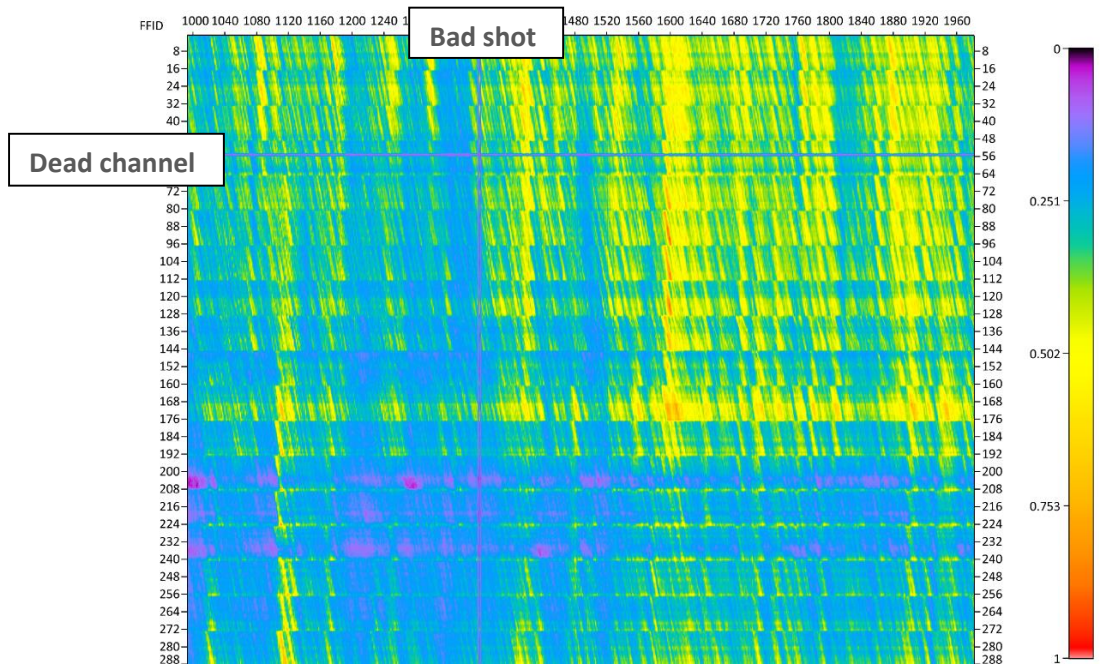
Some examples of typical QC displays are shown below:
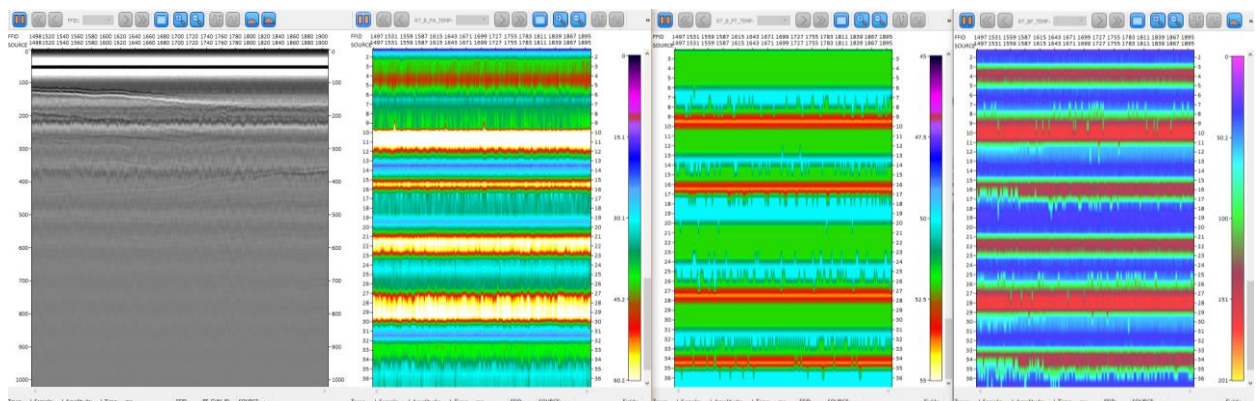
Source QC displays: near-field hydrophone stack, bubble peak amplitude, time and period maps
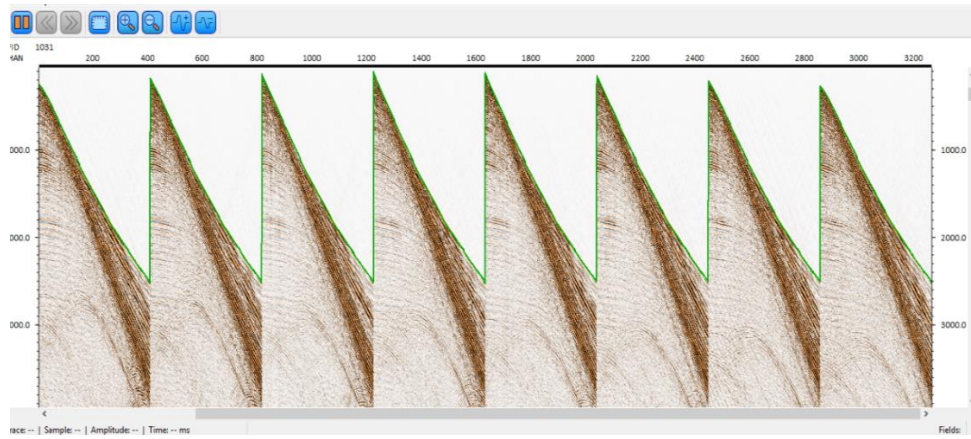
Data QC: shot gather with automatic first-break pick


Data QC: real-time CMP stack

Data QC: real-time RMS amplitude map

FLEXIBILITY AND POWER IN REAL TIME

The flows that every shot record pass through in the real time are fully customizable and completely defined by the operator. Nearly any processing and analysis available in the RadExPro can now be performed in the real time. This includes (but is not limited by) AGC and other amplitude corrections, frequency and FK filtering, predictive and spiking deconvolutions, statics, auto-correlation and cross-correlation functions, automatic first-break picking, calculation of amplitude and frequency attributes for different time-windows and their derivatives, etc. You can select the data from some particular channels or from one particular airgun group and process them separately, select the traces that exceed a given level of energy only, etc.

SAVING AND EXPORTING RESULTS

The operator can set up the real-time flows to save raw records, processed/edited traces, maps, picks, calculated attribute values and any other QC results to the processing project database. Then in the playback mode, the data can be exported to SEG-Y files, calculated attributes can be exported to ASCII.
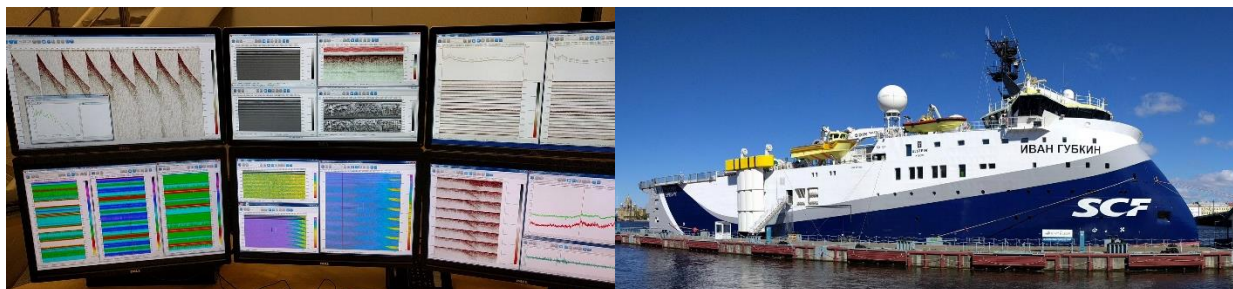
RECOMMENDED MINIMUM SYSTEM REQUIREMENTS
Intel Core i5, 4-core CPU
RAM 16 Gb
Multiple monitors support
Windows 7/8/10 64-bit OS