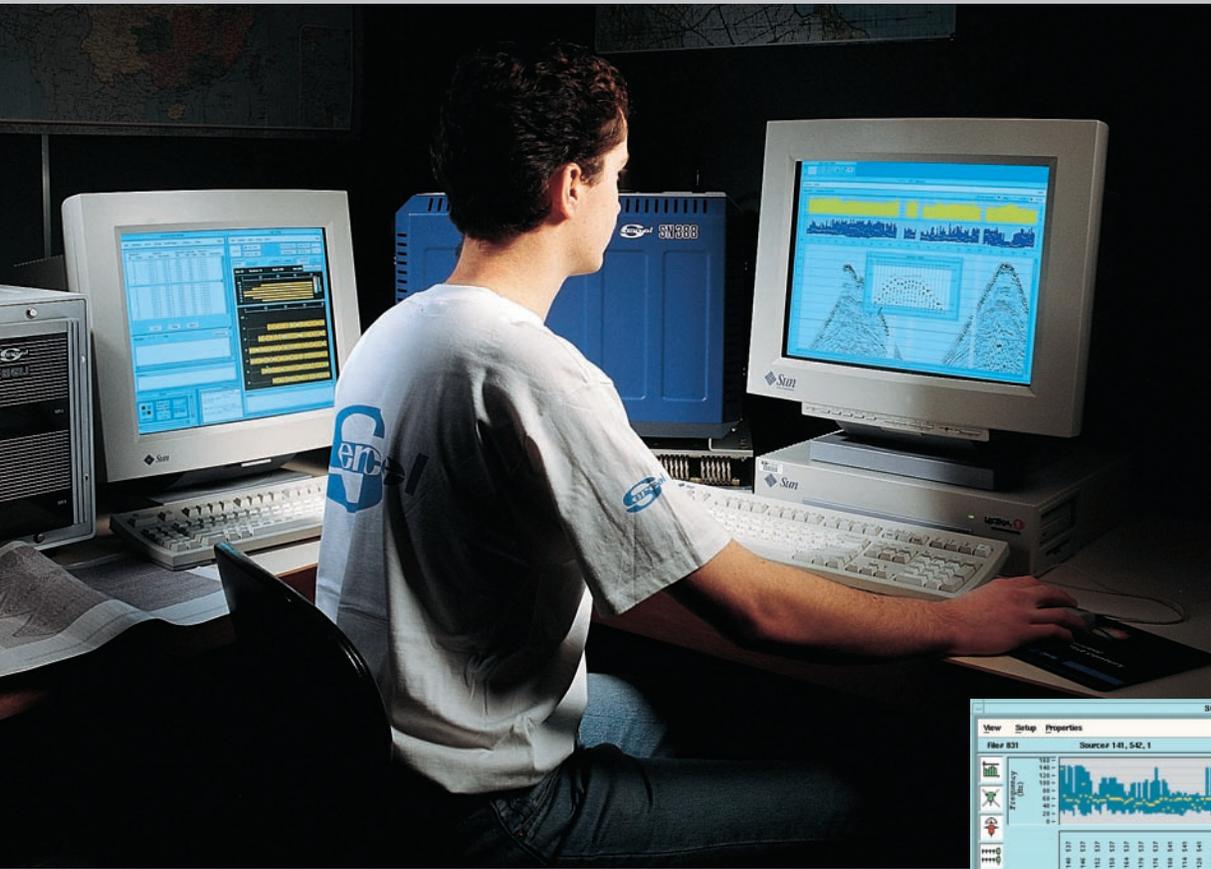
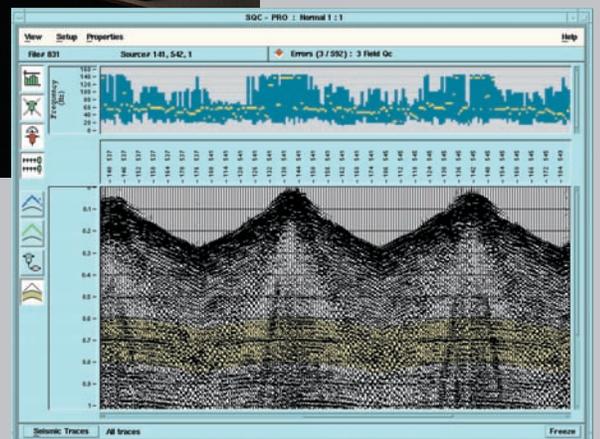


# SQC-PRO

On-line Real-Time Seismic QC Processing



- Fully integrated with the 408UL and SN388 systems
- Innovative display capabilities for real-time QC
- Continuous Quality Control without slowing down production
- Attribute data base generation for post-processing or analysis



# SQC-PRO

## On-line Real-Time Seismic QC Processing

SQC-PRO is an optional hardware and software package that can be implemented on-line with the standard 408UL and SN388 data acquisition systems to offer a powerful tool for real-time QC of seismic data, without the need for any tape manipulation.

Keeping all the advantages provided by the Zero-Dead-Time architecture of the 408UL and SN388 Central Units, all QC functions are performed in parallel with the seismic data acquisition without slowing down 2-D or 3-D crew operations.

### On-line & Real-time

SQC-PRO software package runs on a SUN workstation which is directly interfaced with the 408UL and SN388 acquisition modules :

- Portable Acquisition Modules,
- Standalone or Rackable Acquisition Modules,
- Eagle Module (EM) and Remote Eagle Module (REM).

All the seismic data is simultaneously sent to the recording drive and to SQC-PRO workstation for shot display, automatic generation of trace attributes, and trace header analysis.

The operator defines the list of attributes to be displayed in real time for every shot record.

### Attributes Display

In addition to the high-resolution seismic record display with enhanced AGC, filtering and equalization, SQC-PRO software includes the following attributes display:

- automatic first break picking,
- theoretical first break for control of the geometry,
- ambient noise level,
- seismic signal level,
- signal-to-noise ratio,
- seismic trace frequency analysis,
- geophone group resistance,

- geophone group tilt,
- geophone group leakage.

Each display can be a combination of seismic data and attributes.

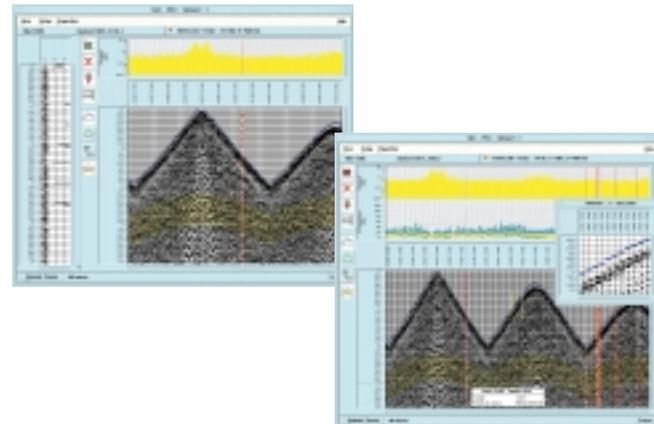
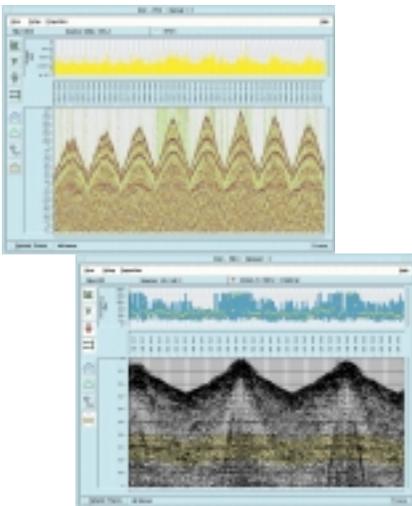
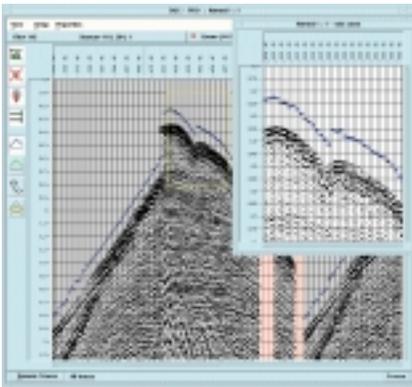
Some attributes related to the closest line to the source can be displayed :

- signal level,
- level of noise emitted by the source (ground roll),
- average level of correlation.

### Graphic tools

Multiple graphic tools are available for an optimal QC Processing :

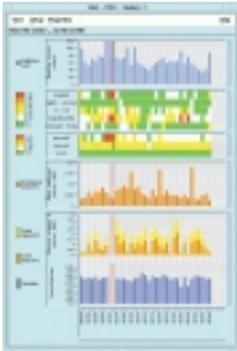
- individual window zoom,
- trace header display using cursor/pointer,
- specific window for test operations
  - Field test
  - Source test
  - Similarity test



- display of traces exceeding a given threshold for the following attributes
  - ambient noise
  - seismic signal
  - signal-to-noise ratio
  - frequency analysis
  - single frequency (i.e. 50-60 Hz)
- selection of different types of receivers,
- color or "wigggle" display.

Multiple windows can be activated in an easy-to-use interactive manner to perform extensive and continuous QC analysis of seismic data.

**Shot-by-shot attributes display (history)**

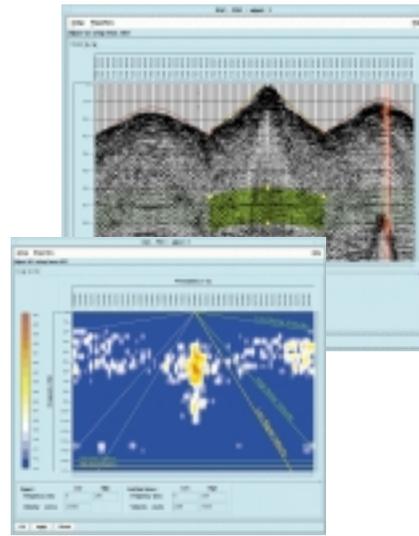


Using bargraphs, SQC-Pro displays a summary of some important computed values, shot after shot :

- number of faulty traces with details of the problems,
- average level of ambient noise,

- level of emitted noise on the closest line to the source,
- level of seismic signal on the closest line to the source,
- average level of correlation on the closest line to the source.

**Off-line set-up of the attributes extraction parameters**



In order to clearly distinguish between emitted noise and seismic signal, for a selected area, SQC-Pro offers an off-line tool allowing users to tune the attributes extraction parameters.

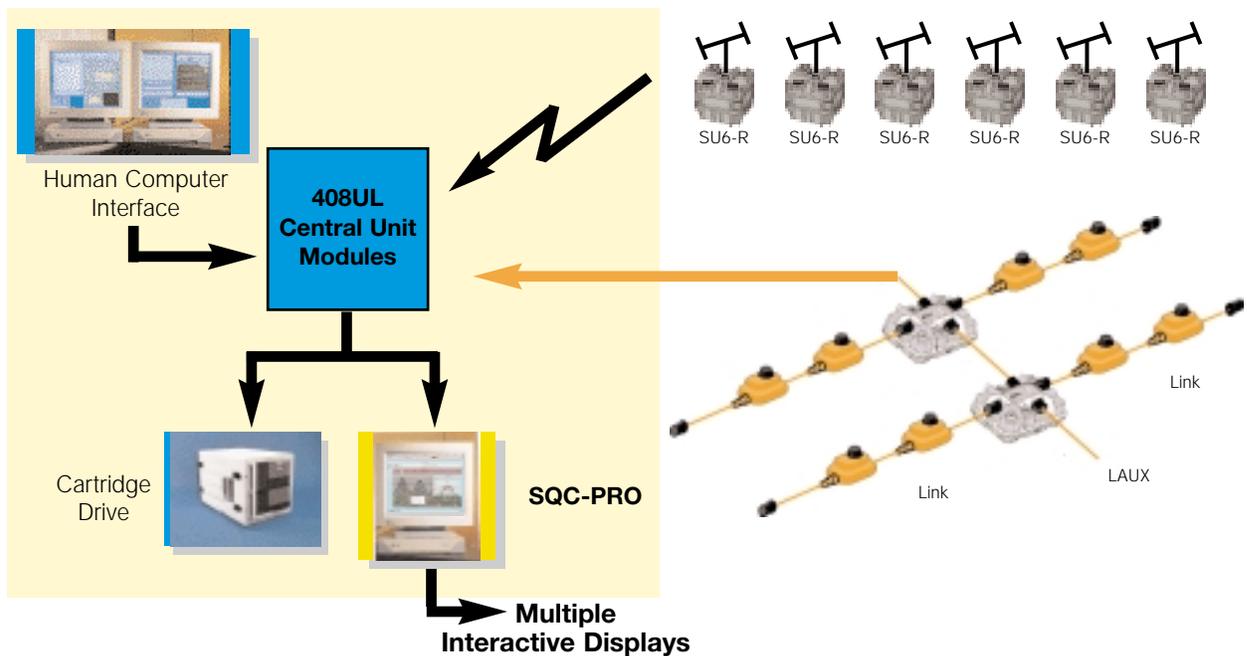
That tool works in the Time/Space domain to identify the selected horizon and in the Frequency/Wave number domain to identify the emitted noise from the seismic signal, adjusting the respective signal speeds.

**Replay capability**

SQC-Pro lets users replay one of the previous shots stored in the database for off-line analysis of a particular shot.

**File export**

SQC-Pro can generate in real-time or in play-back mode the file of the edited traces in ADS-TE format, and the file of the computed attributes in ADS-TA format. The SEG-D files can also be forwarded to a hard-disk or an external FTP server in real-time.



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