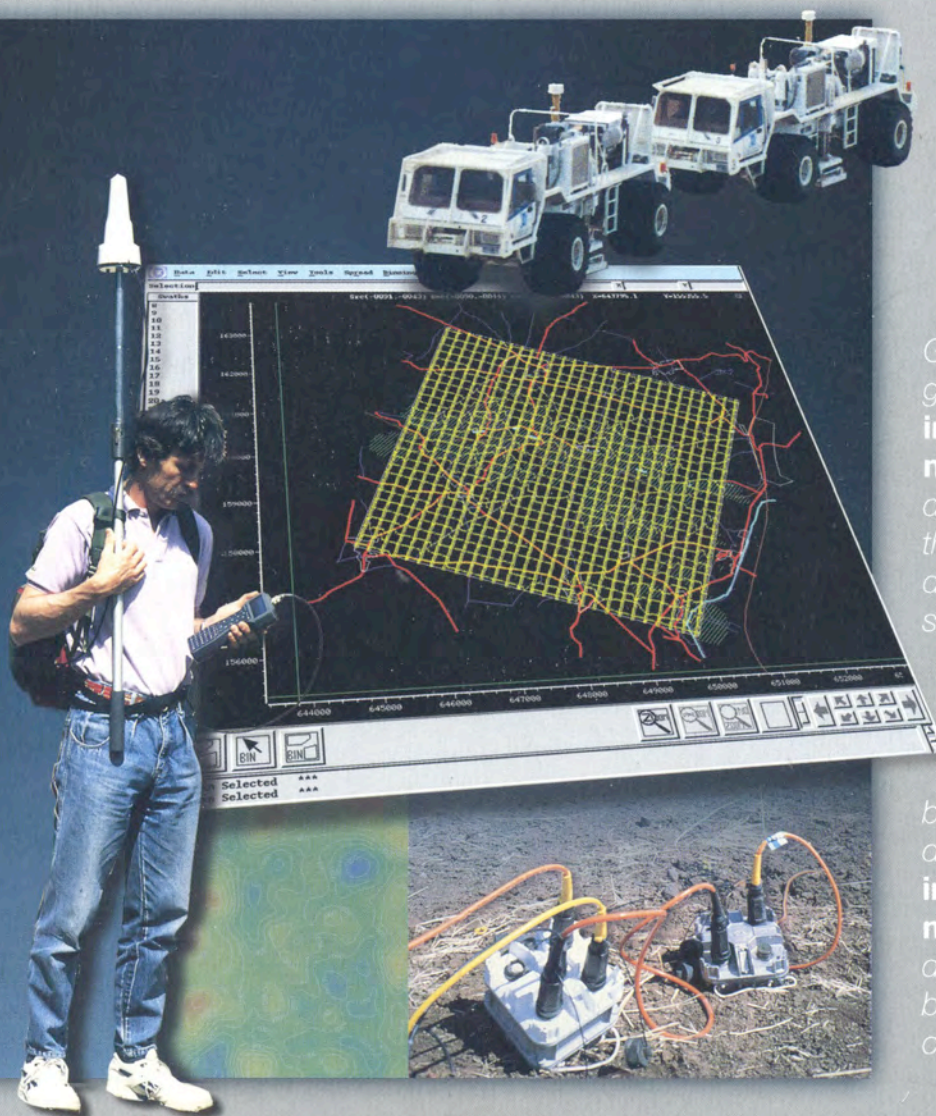


Geoland®

Integrated Field Operations Management



Geoland is the new-generation integrated information management system designed to guarantee the quality of support data in land and shallow-water seismic field operations

*Centred around a single relational data base, Geoland is dedicated to the **daily integration and monitoring** of the different jobs performed by a 2D & 3D acquisition crew*



Petrosystems

Geoscience software

Guarantee seismic support data

Planning

When preparing the survey, aerial or satellite photos can be imported and survey maps digitized to plan the position of geophysical points and any other relevant data can be incorporated:

- permanent markers,
- exclusion zones,
- prospect boundaries, etc.

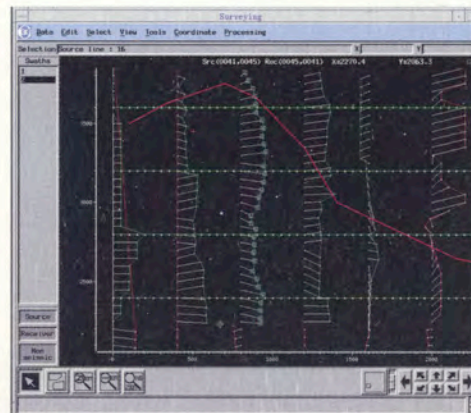
Each geophysical source or receiver point is unambiguously defined by 4 identifying attributes:

- swath number,
- line number,
- point number,
- index number.

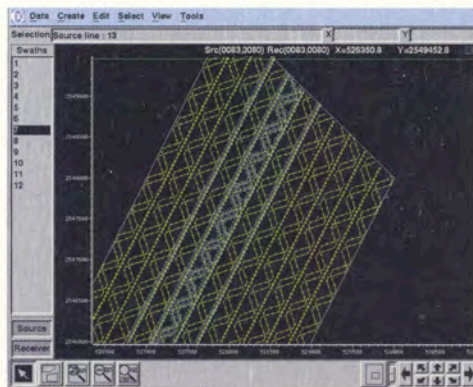
Geoland has the necessary flexibility for the design of any complex survey geometry.



Real survey layout superimposed on a satellite map



Graphic comparison of theoretical / real E, N coordinates



Double zig-zag 3D survey layout



Theoretical survey layout superimposed on a satellite map

Surveying

The central unit of the Geoland package can transfer the planned coordinates to the field survey sensors adapted to conventional surveying (Landsurv™), shallow water positioning (GIN®2000), inertial positioning (Geodine 30) and static, dynamic or kinematic DGPS (Manpack™ / Mankart™). After acquisition of the surveying data, Geoland is updated with the computed coordinates as well as several sets of attributes: sensor type, raw data, computer log, quality index, date and time of acquisition, crew number and operating conditions.

QC checks within specified tolerances (group intervals, real vs. theoretical, etc.) are made to validate these coordinates. Output includes listings, files, access sketches and scaled location maps.

consistency
during the entire survey process
with **Geoland®**

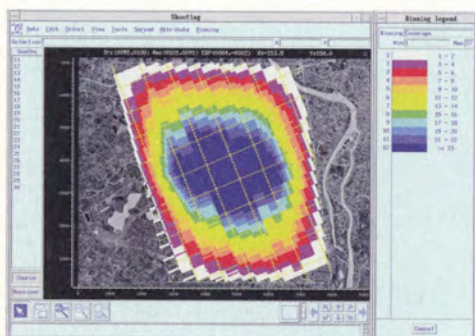
Delivery

Once all attributes have undergone contractual QC, Geoland creates the support data files for processing in SPS or any other standard format.

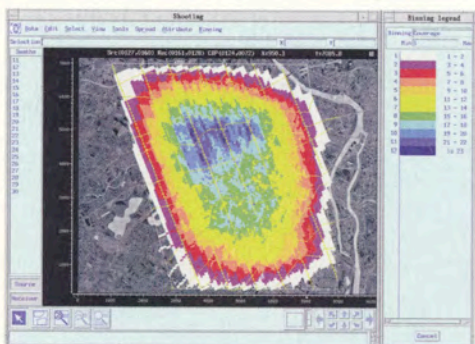
The QC applications display, plot or print any sets or combinations of attributes included in the data base: 2D or 3D views, histograms, statistics, crossplots, extraction of data above or below a certain threshold, lists and diagrams. Errors or mismatches are automatically detected and highlighted when tolerances are stored in the data base.

Theoretical data may be modified at any time. Real data, on the other hand, is protected from unauthorized modifications throughout the acquisition process.

Theoretical coverage



Final coverage on a selected offset range



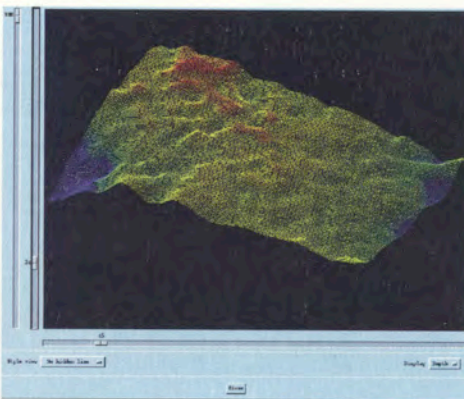
Recording

Once the shooting strategy has been defined, including templates for regular and compensation shots, Geoland computes a pre-acquisition fold map using theoretical and / or real coordinates.

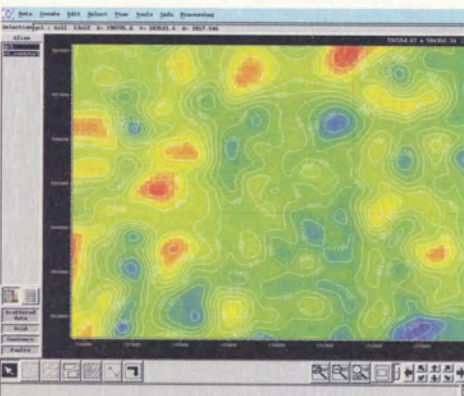
Daily scripts are prepared on floppy disks for seismic recorders, such as the Sercel SN 368 and SN 388 recorders.

After recording, the observer log is loaded into the Geoland data base to produce post-acquisition fold maps with selection offset and / or azimuth ranges.

SPS data can also be loaded from surrounding surveys to optimize coverage at boundaries.



3D elevation view



Contour map of weathering velocity computed with uphole times and hole depths

CGG Petrosystems is the software branch of the CGG Group. The staff of 250 develops, markets and supports a wide range of geoscience applications for seismic acquisition, processing, geoscience interpretation and technical data management. CGG Petrosystems' products are actively used by a broad world-wide user base, as well as CGG's internal services.

This duality is beneficial for both communities, bringing together CGG's unique experience and R&D efforts and a client-oriented development and support policy. CGG Petrosystems continues to forge new paths in geoscience software development, including distributed processing, data integration, interactive 3D modeling and POSC standardization.

Paris	+33	(0)1 64 47 30 00
Houston	+1	(281) 646 2400
London	+44	(0)181 899 2400



Petrosystems

Geoscience software

Stavanger	+47	51 89 0300
Calgary	+1	(403) 266 10 11
Mexico	+52	5 272 6195
Caracas	+58	221 9140
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Lagos	+234	1 262 19 12
Pau	+33	(0)5 59 72 79 00

e-mail software@cgg.com