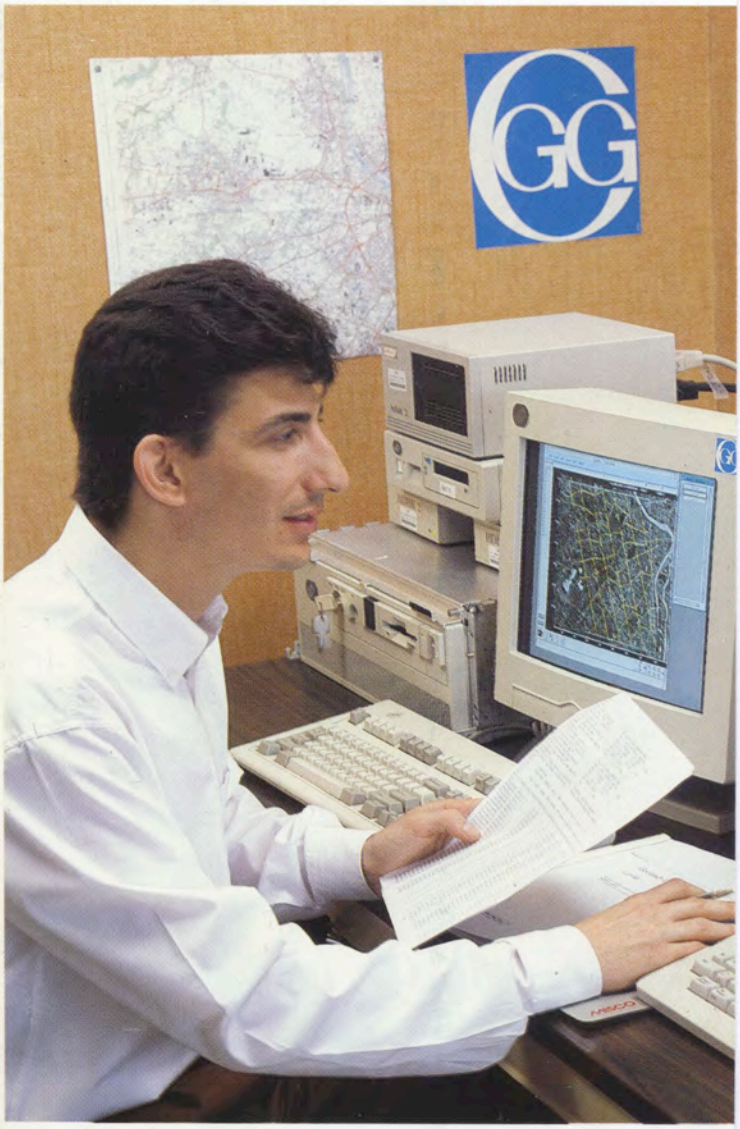
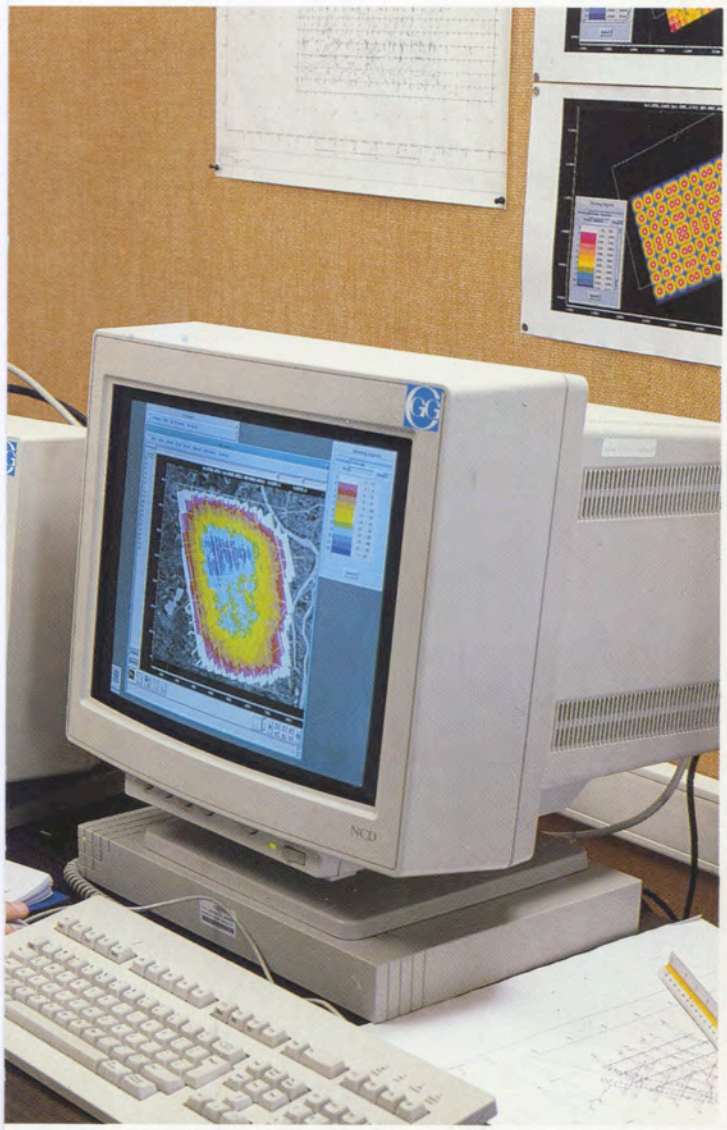
GEOLAND®

THE INTEGRATED 3D FIELD OPERATIONS MANAGEMENT SYSTEM





Geoland® is the new-generation information management system designed to guarantee the quality of support data on land and shallow water seismic crews.

Centered around a single relational data base, Geoland® is dedicated to the daily integration and monitoring of the different tasks and jobs performed by a 3D acquisition crew.

GEOLAND® GUARANTEES THE CONSISTENC

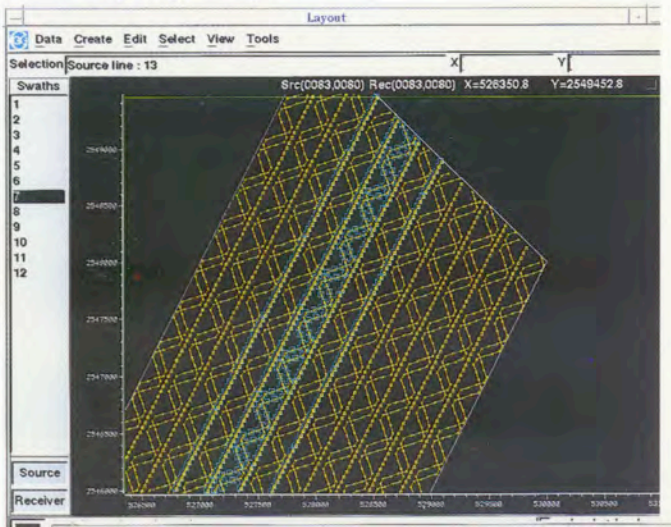
WHAT IS PLANNED

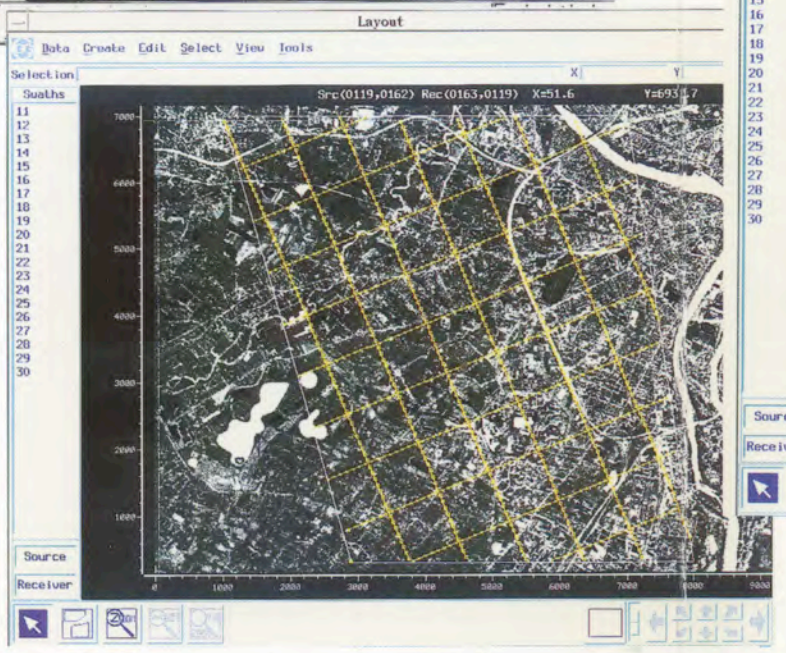
To prepare the survey, aerial or satellite photos can be imported and survey maps can be digitised to plan the positions of geophysical points or incorporate any other relevant information: permanent markers, exclusion zones, prospect boundaries, etc.

Each geophysical source or receiver point is unambiguously defined by 4 identifying attributes: swath #, line #, point # and index #.

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

Double zig-zag 3D layout.





Theoretical layout superimposed on a satellite map.

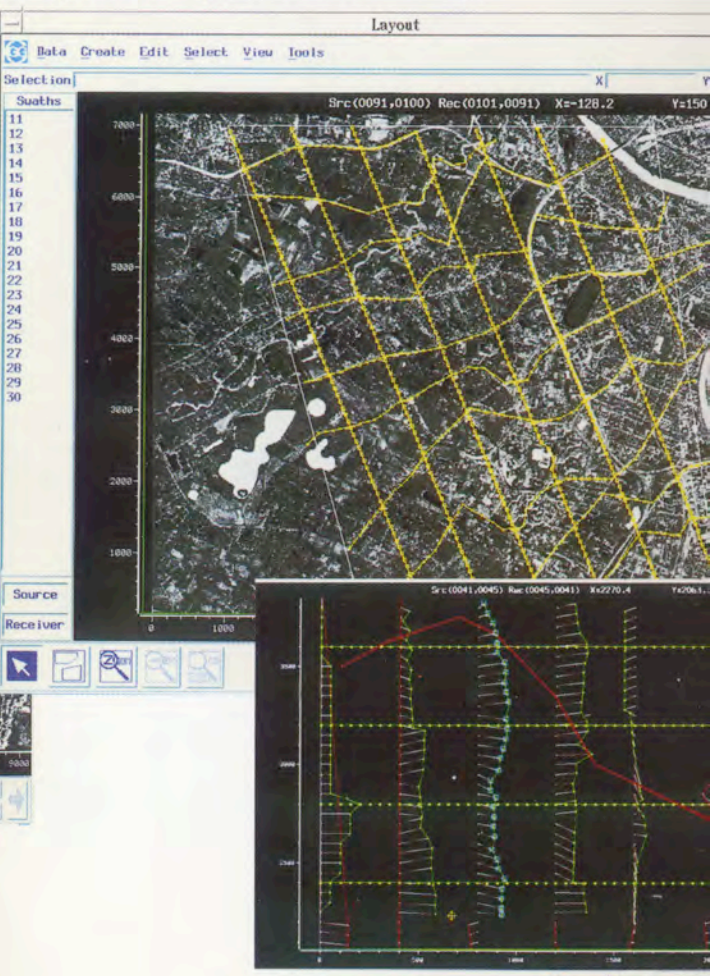
WHAT IS SURVEYED

The central unit of the Geoland® package can transfer the planned co-ordinates 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 co-ordinates 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-versus-theoretical E, N, etc.) are made to validate these co-ordinates. Output includes listings, files, access sketches and scaled location maps.

Real layout superimposed on a satellite map.



Graphic compa
of theoretical/real E, N co-ordi

OF ALL SEISMIC SUPPORT DATA BETWEEN:

WHAT IS RECORDED

Prior to recording, the shooting strategy, including templates for regular and compensation shots, is defined. Geoland® computes a pre-acquisition 3D bin coverage map using theoretical and/or real co-ordinates.

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

After recording, the observer log is loaded onto the Geoland® database to produce post-acquisition 3D bin coverage maps with selection of offset and/or azimuth ranges.

It is also possible to load SPS data from surrounding surveys to optimize coverage at boundaries.

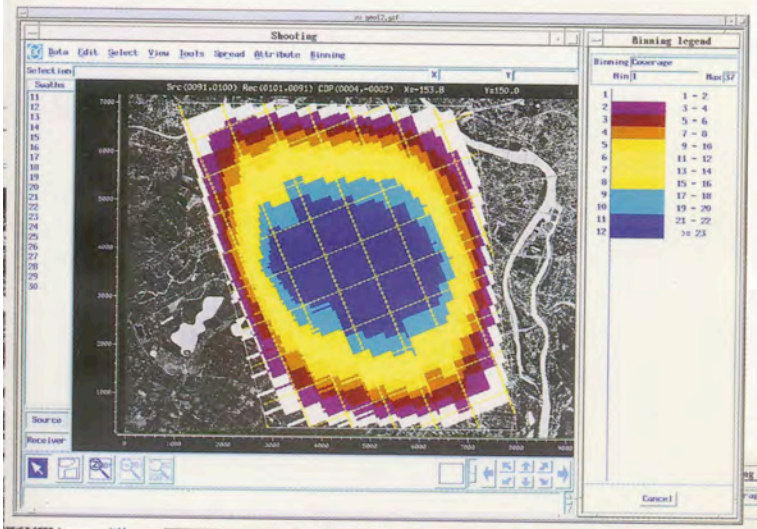
WHAT IS DELIVERED

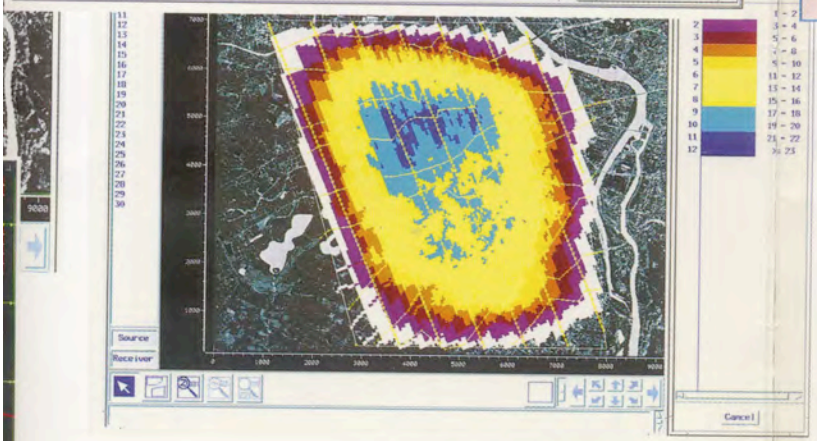
Geoland® creates the support data files for processing in SPS or any other standard format on disk, once all attributes have undergone contractual QC.

The QC applications display, plot or print any sets or combinations of attributes included in the database: 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 database.

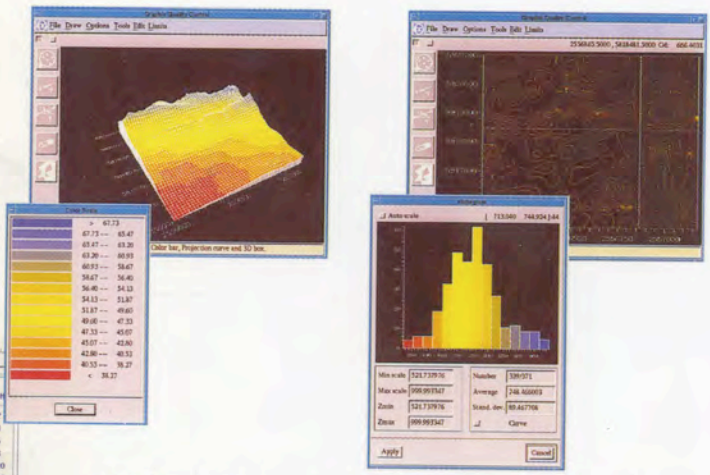
Theoretical data may be modified at any time. Real data, on the other hand, is protected from unauthorised modifications throughout the acquisition process.

Theoretical coverage.





Final coverage on a selected offset range.



3D elevation view, and contour map of the weathering velocity computed with uphole times and hole depths.

GEOLAND® UNIX® SOLUTION

Geoland® runs on a UNIX® workstation and is built under a client-server architecture, providing dedicated terminals for surveyors, seismologists and other users.

Its graphic user interface has been designed to comply with X Window®/Motif® industry standards.

The standard SPS format for support data is used to exchange information with other systems necessary for crew management, such as CGG's in-field processing package: Field Geovecteur®Plus.

The basic hardware configuration can be installed in a remote environment and is adaptable to the size of the survey. A basic example, in addition to the CPU, includes:

- an 8 mm tape drive
- a colour plotter
- a PostScript printer
- a digitizing table.

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