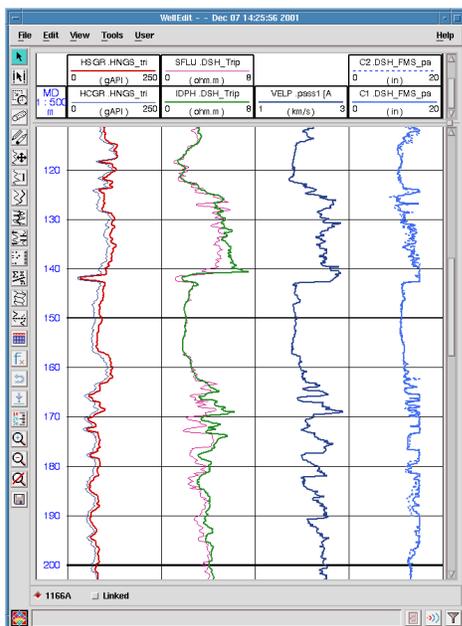


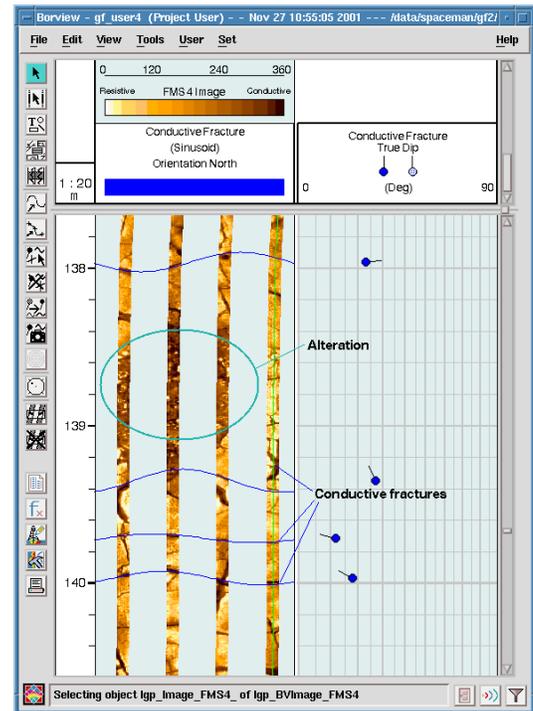
GeoFrame

Description

GeoFrame is an industry-standard software package produced by Schlumberger GeoQuest for managing and analyzing borehole and seismic data. It has been in use by ODP Logging Services for several years for processing and interpreting Formation MicroScanner (FMS) resistivity images. Log data, sent by satellite from the ODP drillship to Lamont-Doherty Earth Observatory are processed using GeoFrame software. This includes depth adjustments so that there are no depth offsets between data from different logging runs, corrections specific to certain tools and logs, conversion of the data to a widely accessible format (ASCII for the conventional logs, GIF for the FMS images), and inclusion on the online ODP log database. More recently, the seismic interpretation applications (IESX) within GeoFrame have been used for generating synthetic seismograms and interpreting seismic site surveys. Within GeoFrame, data are stored in an Oracle database. The software is available on the *JOIDES Resolution* and at the ODP log interpretation centers at New York, Leicester, Montpellier, Tokyo, and Aachen.



WellEdit is the main log viewing and editing application within GeoFrame. Here it is used to display natural gamma, resistivity, sonic velocity, and caliper logs.



BorView is the GeoFrame application that is used for analysis of image logs. This example of FMS data from ODP Leg 193, Hole 1189B, shows altered and fractured rhyodacite.

Applications

- ◆ Viewing, manipulating, and interpreting 1D log data (resistivity, density, porosity, natural gamma radiation, acoustic velocity, magnetic susceptibility, etc.)
- ◆ Viewing, manipulating, and interpreting 2D log data, such as FMS images and resistivity-at-bit (RAB) images, including orientations of dipping beds and fractures
- ◆ Extensive seismic interpretation (IESX)
- ◆ Comparison of core and log data

System Requirements

Platform:	Sun or SGI workstation
Operating system	
Sun:	Solaris 2.6 - 2.8 (Sun OS 5.6 - 5.8)
SGI:	IRIX 6.5.9
Monitor:	Multiple monitors recommended
Data input (seismic lines):	SEG-Y
Data input (logs):	DLIS
Data input (logs, navigation):	ASCII



IESX

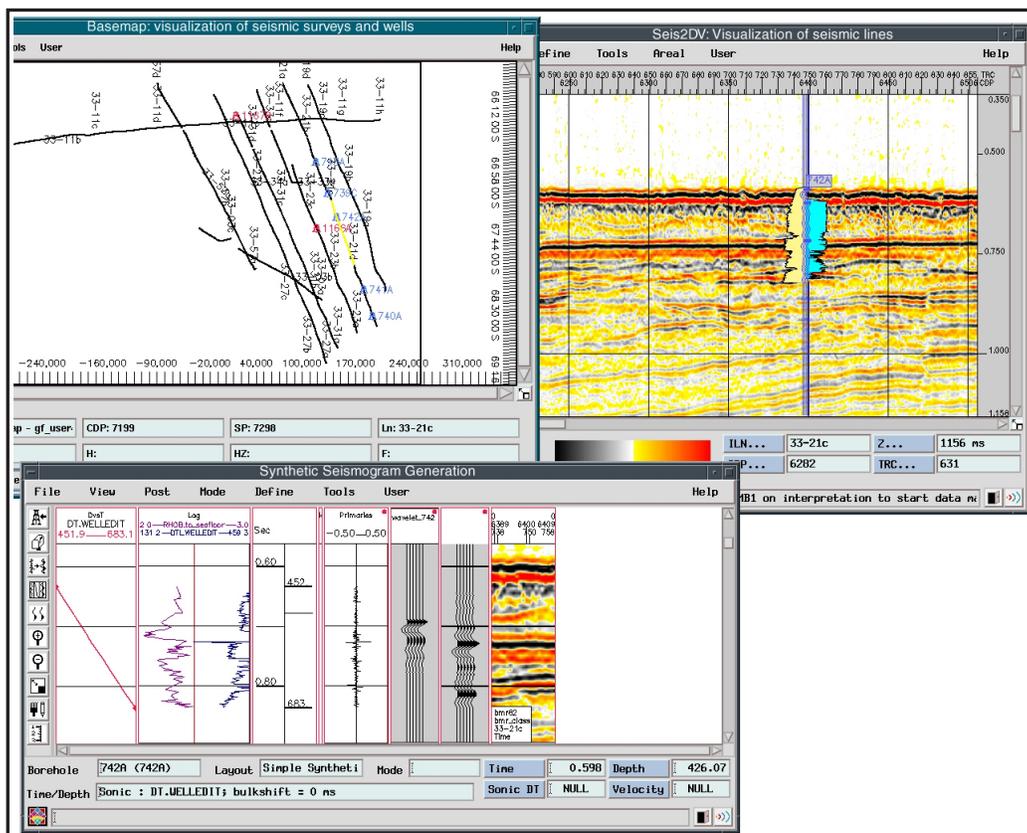
Description

IESX is a data integration package that allows the user to integrate seismic, log, and physical properties data. It is part of Schlumberger GeoQuest's GeoFrame software, and has been in use by ODP, initially on a trial basis, since Leg 188. IESX has proven to be especially effective in the integration of log and seismic data into a single coherent project. Some of the features of IESX that are most useful to ODP scientists include: 1) basemap display of seismic lines and wells; 2) interactive 2-D visualization/interpretation of individual or intersecting seismic lines; 3) generation of synthetic seismograms from density and acoustic velocity data, and their superposition on seismic lines; 4) 3-D interactive visualization of seismic lines and wells; and 5) basic manipulation of the seismic data, such as gain control and filtering. GeoFrame and IESX software are available for use by any ODP scientist at the ODP Log Analysis Centers

located in New York, Leicester, Montpellier, Tokyo and Aachen.

Procedures

Prior to a drilling leg, the available seismic navigation and trace (SEG-Y) data for the area are loaded into a GeoFrame/IESX project, along with the locations of existing and proposed sites. During the leg, density and acoustic velocity data (from both core and downhole log measurements) are loaded into IESX, and used as input for the synthetic seismogram. The reflections in the "synthetic" are matched to the reflections in the seismic section, so that the section can be interpreted in terms of the actual formations. Post-cruise, IESX output can be exported to other applications and combined with other data types to produce comprehensive, integrated data sets.



IESX allows for the concurrent display of multiple applications. A typical screen configuration is shown above, in which ship track data, seismic lines and synthetic seismograms are displayed in separate application windows..

