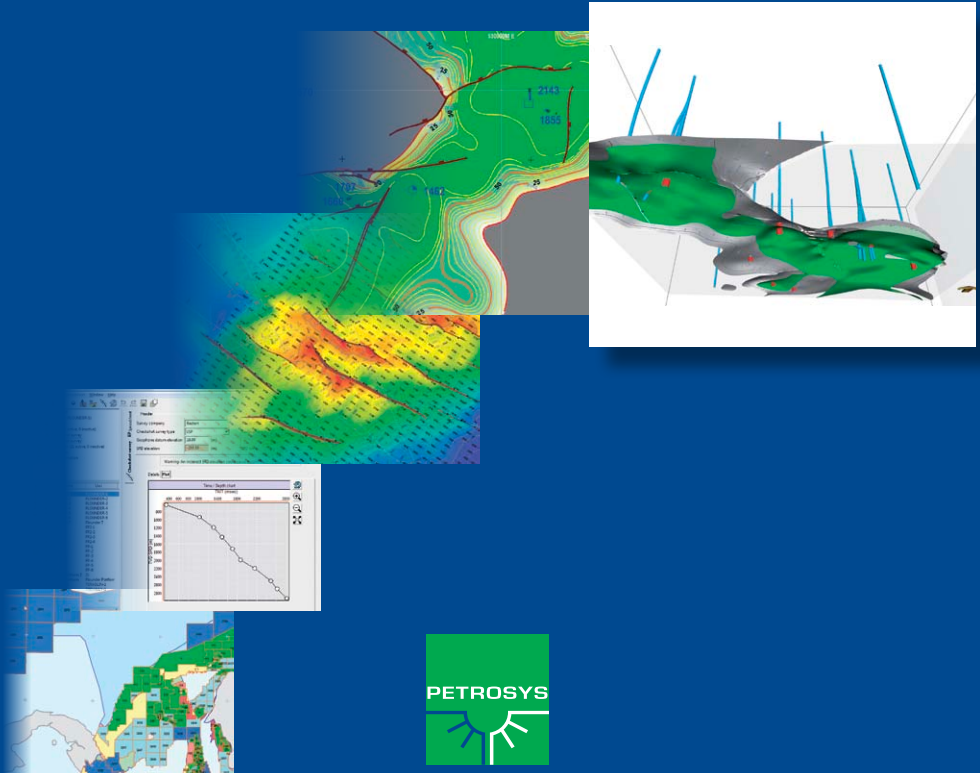


MAP THE BIG PICTURE.



Unearth A Masterpiece.™

TARGETED WORKFLOW IMPROVEMENTS FOR GEOSCIENTISTS

Petrosys provides a rich map canvas on which to manage your exploration, starting with the identification of opportunities from regional geological studies.

In the reconnaissance stages of exploration, you will be creating regional maps on which to assemble information to help you assess the geological and commercial potential of an area.

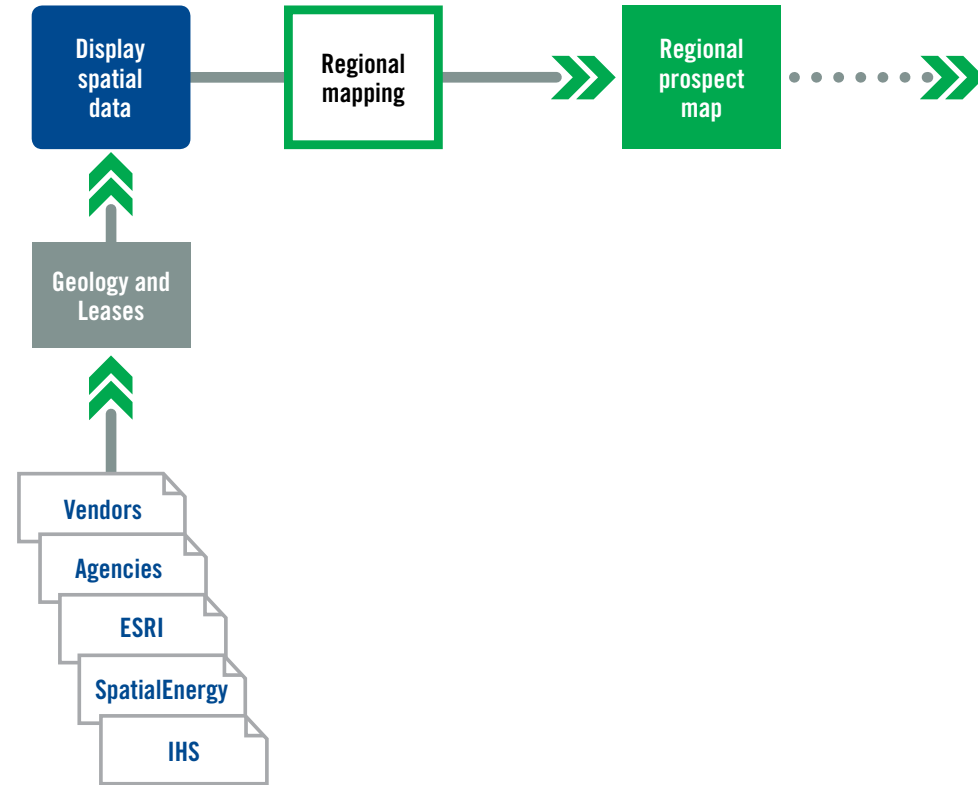
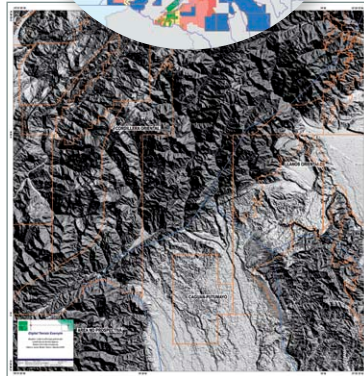
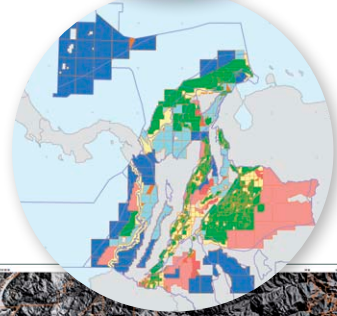
At this stage much of your information may come from data vendors, government agencies, potential joint venture partners and your own regional modeling.

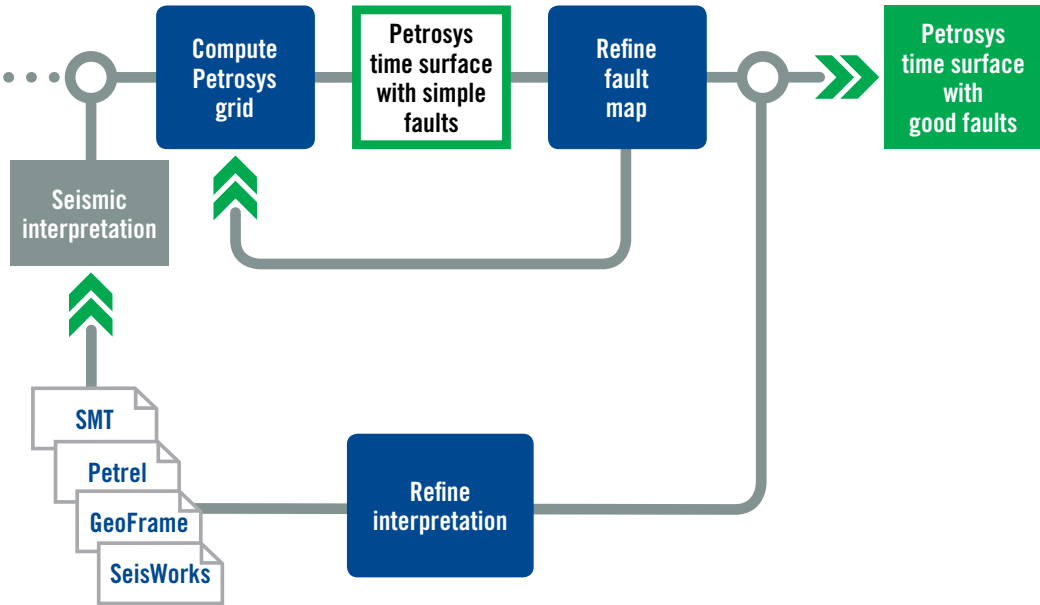
With projections and datums from the industry standard EPSG database Petrosys is ready to create maps of any location that you may want to look at. On your blank canvas you can use the GIS oriented Display/Spatial function to immediately show and query lease outlines and general geological information obtained as shape files, personal geodatabases, MapInfo spatial data, DXF or DGN drawing files and ZGF files. Or perhaps your potential partners are already Petrosys users and have regional data packages available as Petrosys culture files that combine both content and display style.

Up to date information can also be added from live web map service (WMS) feeds that are an increasingly common source of image data, and which are also supported for lease information by some agencies.

Further context can be added to this generic information by incorporating raster images, which can be georeferenced to any projection in Petrosys, and using Petrosys surface modeling to manage and display digital terrain and bathymetric images.

Having established potential targets, you can use Petrosys to create the layout of proposed 2D and 3D seismic surveys for initial subsurface exploration.



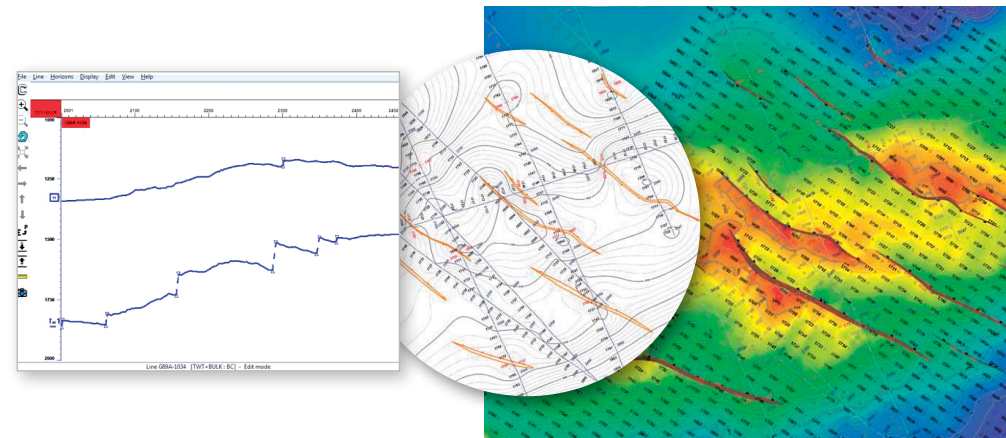


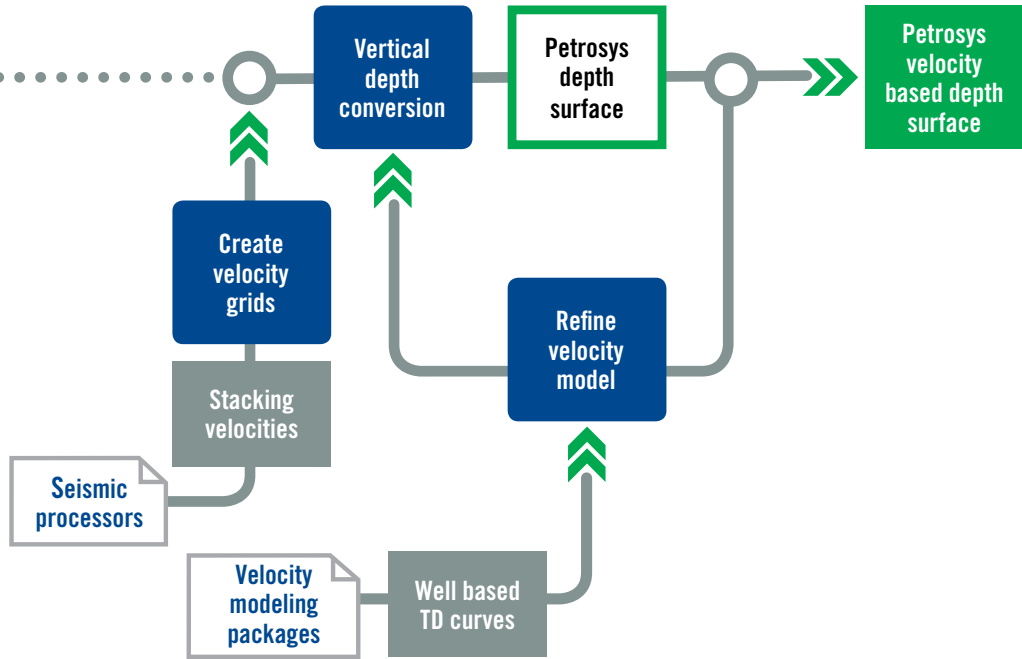
Determine initial surface shapes from seismic interpretation, and refine the fault model.

As soon as interpretation of the first seismic is available you can start assembling a time surface model in Petrosys. Whether your geophysics is coming from Kingdom-SMT, GeoFrame, Petrel, SeisWorks or SeisWare: Petrosys' direct connects give you the option of working on- or off-line with the interpretation system.

The Petrosys surface model map, with its excellent handling of faults and tailored and geophysical displays may suggest alternate structural trends that can be modeled in Petrosys and lead to refinement of the evolving interpretation.

Earlier seismic surveys and interpretation, such as from previous operators or JV partners, can be added to your map, allowing you to take into account previous ideas without the overhead of loading seismic data or introducing additional interpretation software.





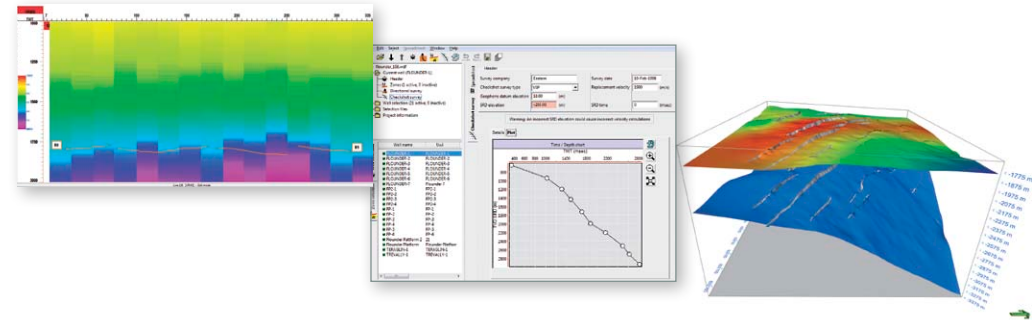
Convert initial time models to depth using regional velocity knowledge, taking into account more reliable well velocities where available.

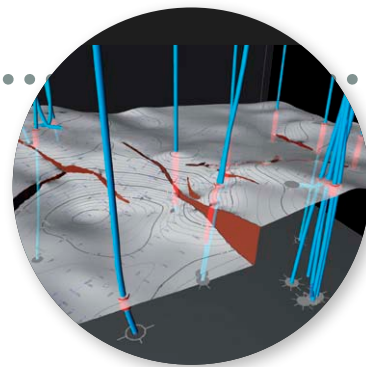
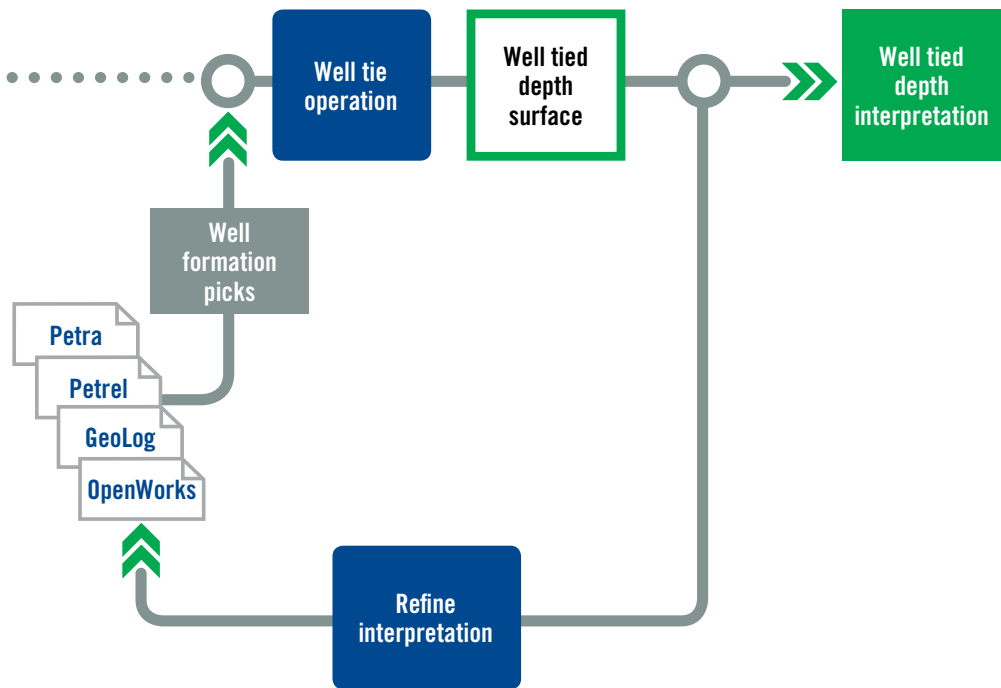
The first velocity information available usually takes the form of stacking velocities derived from processing of the seismic survey.

In Petrosys you can load stacking velocities and interpolate interval and average velocities to the interpreted time horizons. Using this initial velocity model you can do vertical time to depth conversion both on the original seismic time picks as well as on regional surface models.

Stacking velocities are generally a very crude form of information, and Petrosys' numerous grid smoothing and editing functions, along with the ability to tailor layer-by-layer depth conversion workflows, allow generation of conservative models with a range of options to illustrate the sensitivity of your structure to variations in the velocity model.

As soon as well data becomes available, time-depth curves can be introduced to calibrate the velocity model. Petrosys automatically creates average and interval velocities to formations with specified tops in the well data file. Well based velocities can be used to calibrate the stacking velocity field through the well tie function.





Tie the seismic depth model to formation picks to lock down the absolute depth at well tracks, creating the surface that your geoscientists can justify.

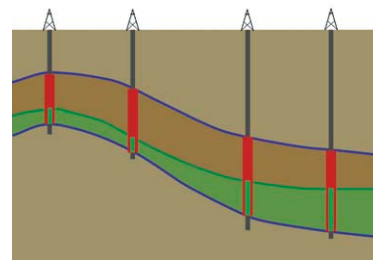
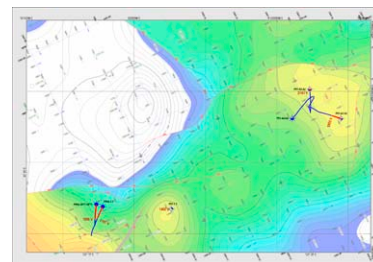
The velocity based depth model gives a good representation of the regional structure based on the seismic interpretation. Formation picks, once available, can then be used to accurately tie this depth model to well data.

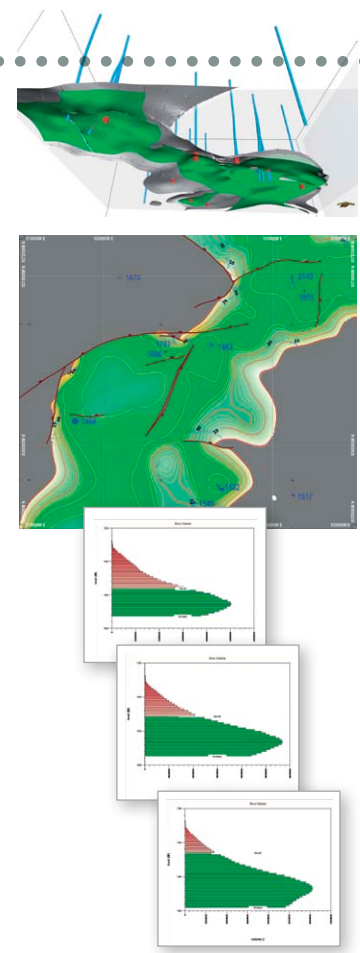
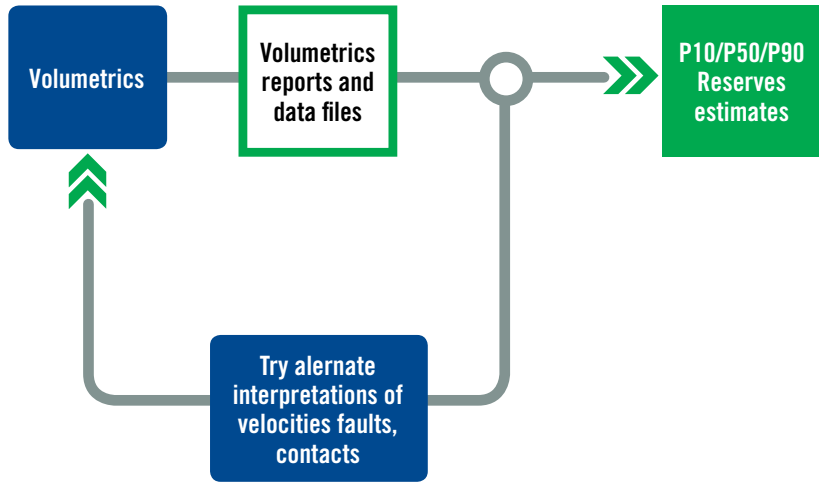
Well tracks and formation picks can be accessed directly from your OpenWorks, GeoFrame, Kingdom-SMT, Petra or PPDM data store, or they can be imported or loaded into the Petrosys well data file for off-line use.

The Petrosys well tie function uses the wide range of Petrosys gridding methods to balance the difference between well based formation picks and the seismic depth model. In addition to the popular minimum curvature method, kriging or geostatistics is particularly effective for creating a smoothly varying conservative depth correction without unnecessarily extrapolating errors.

By quality controlling your depth correction in Petrosys map and 3D views, you can identify and re-interpret spurious picks. The Petrosys well selection editing list makes it easy to exclude wells with data errors.

To model formations and other zones that aren't identified in the seismic interpretation, the grid phantoming operation allows interpolation of surfaces within the existing model.





Compute a volume model that you can trust with rapid re-computation based on alternate interpretations, velocity models and other sensitive input, to provide a full range of possible and probable scenarios.

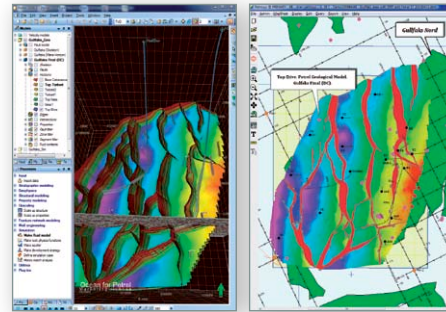
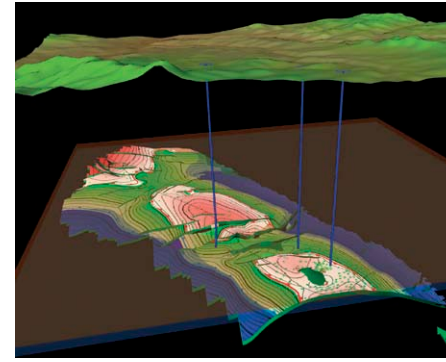
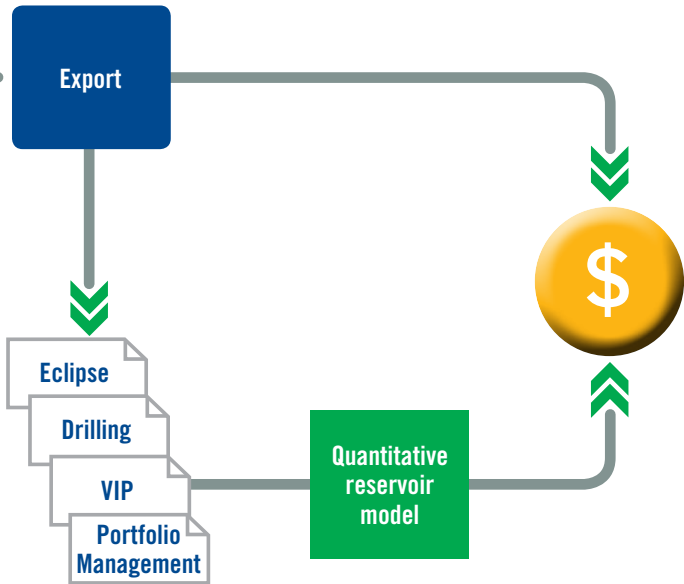
Volumes can be computed at each stage of the refinement of your geological model. Gross rock volumes can be computed from just a top surface with horizontal base levels; a top and a base surface; or from a grid of thickness.

Volumes can be converted to a range of built in or user defined units. Porosity, hydrocarbon saturation, net to gross, and recovery factors can be introduced to apply a constant scaling factor to the volume of a structure.

For more detailed reservoir models, grids of these factors can be combined with thickness grids to give net pay maps.

Slice volume charts and reports allow interpretation of the distribution of volumes in depth. XML based reporting includes detailed metadata about the computation and provides a customisable reporting framework.

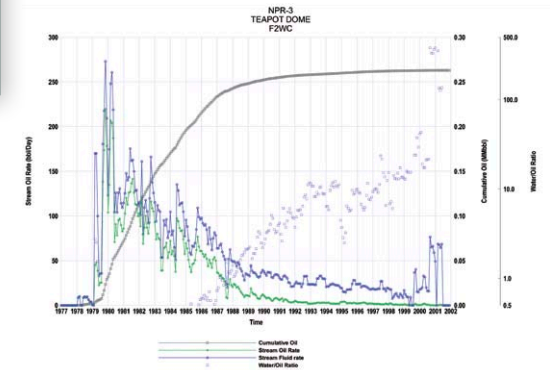
No matter what stage of development your field is at, there will always be some uncertainty. You may have a range of values for the velocity model in the untouched flanks of a structure; there might be a range of constant and regionally varying interpretations on porosity; or the gas-oil contact might be uncertain. Like all Petrosys surface modeling workflows, a volumetric computation is easily re-run with alternate parameters; and scripting of key parameters allows encapsulation of the process for predictable re-use by new staff.

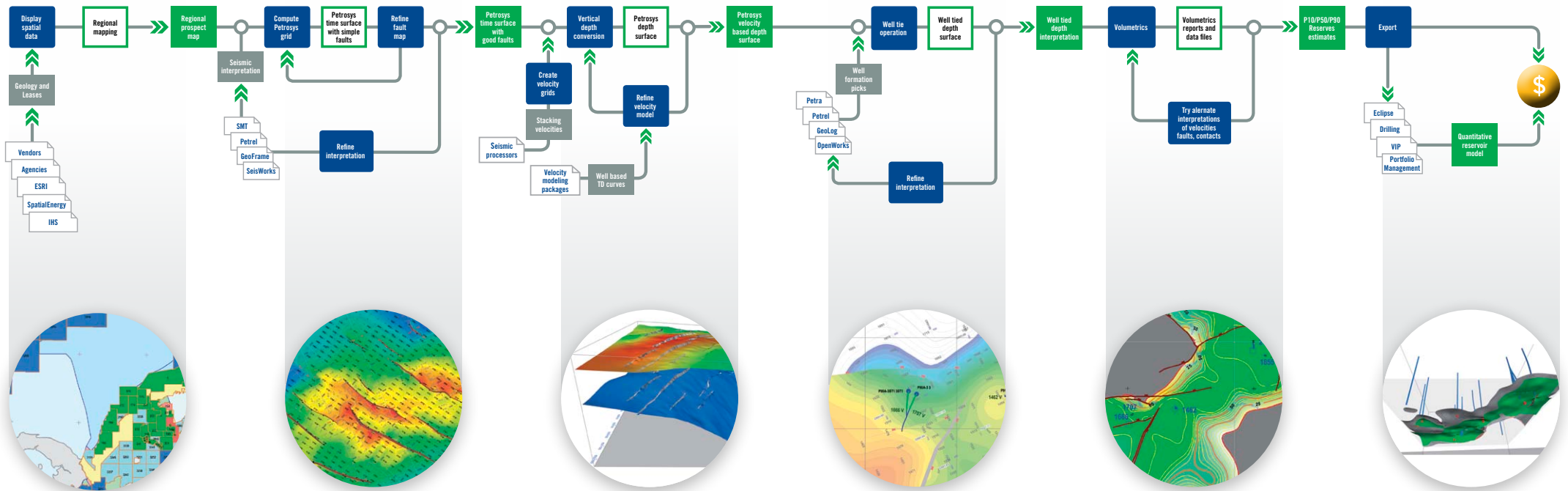


Send your interpretation to your reservoir modeling, engineering and production management processes.

The ongoing modeling of your reservoir performance under production will benefit from the refined depth models created and mapped in Petrosys, along with the associated management and mapping of well header, directional survey, formation pick and other data in Petrosys' dbMap or other directly connected EP data stores.

Petrosys surfaces may be loaded directly back to Petrel, GeoFrame and OpenWorks, and through file based transfers to the Eclipse and VIP simulators.





Present your work throughout the project in high quality maps, 3D views and reports, to keep your team's concepts clearly in front of technical and financial decision makers.

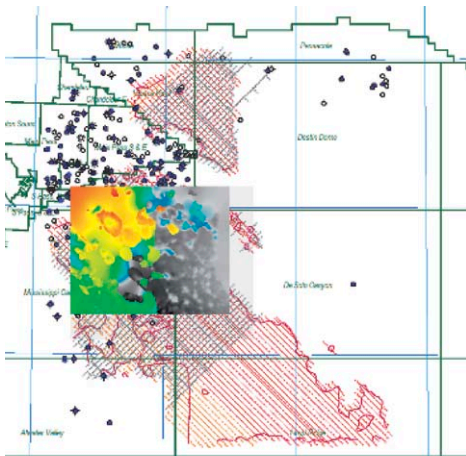
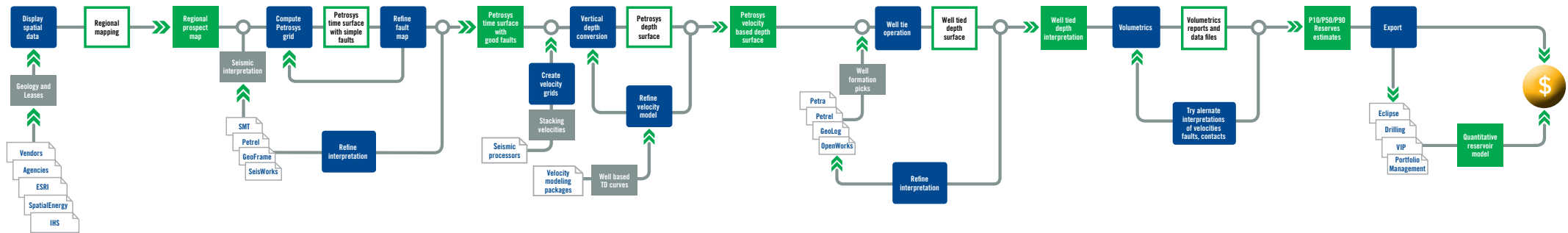
Throughout the life cycle of your project the latest information can be summarised in geotechnically focused maps and 3D views.

As you can be using these tools for the ongoing monitoring of your work, a presentation quality map or high quality 3D display is always only a few clicks away.

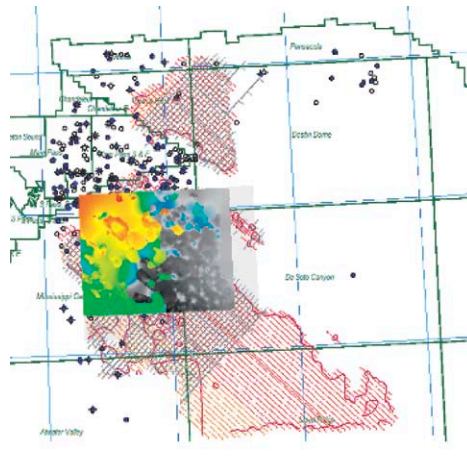
Use the convenient 'Copy view content to clipboard' to embed map details in Powerpoint presentations

and informal documents, or use one of the high resolution antialiased raster output formats and Petrosys' absolute line weight support for print ready publications. Standard Windows printer drivers and most CGM plotting systems can be used.

For confident presentation of 3D models, key 'view points' can be stored both as easily retrievable reference views and to create fly-through animated movies.



UTM 15N



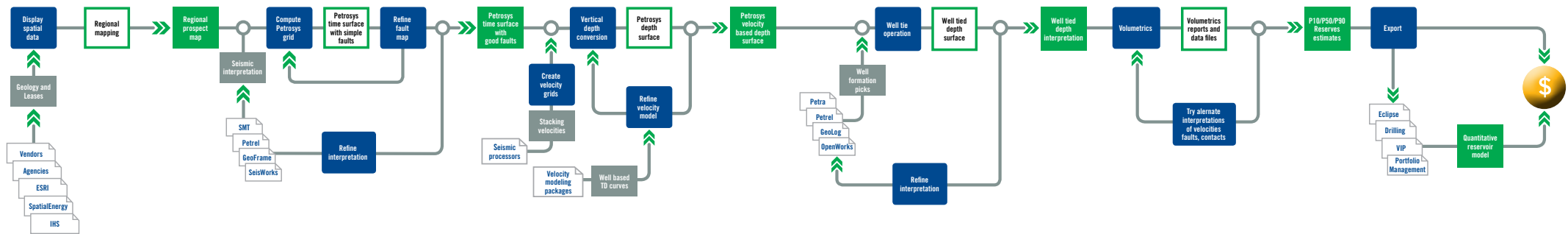
UTM 16N

Your work is readily extensible to neighbouring blocks and back into a regional context through the built-in coordinate management of PetroSYS.

Basin wide analysis often spans a region that requires a number of different map projections for effective display. All PetroSYS data is tagged with a coordinate reference system (CRS) that allows it to be replayed in alternate projections and geodetic datums.

With PetroSYS, gridded surfaces computed in one CRS may be displayed in a map based on another. Data from projects using a range of projections and datums may be collated on a single map, or used as input to a single grid computation.

You can choose whether to convert data from legacy datums to current WGS84 linked geographic CRS, or you can retain the data in its original form and have it converted dynamically for display.



DIRECT CONNECTIVITY

Mapping



Modelling



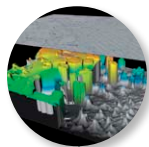
Browsing



Reporting



Visualizing



FILES

DXF, DGN, ECW,
Raster Images,
GoCad, JPEG, ZGF,
MrSID

SPATIAL FILES

ArcShape
MapInfo
Petrosys CUL

SPATIAL DB

ArcSDE, Oracle
Spatial,
Personal GeODB

DATABASE & EP

PPDM+, GF, IESX,
Petra, Petrel, Finder,
OW, SW, SMT

ODBC COMPLIANT

SMT, ODM,
Excel, Access

Project data is backed up with solid links to industry standard data stores.



Petrosys offers a range of data management options. You can work completely 'off-line' using project based seismic, well and spatial files, completely 'on-line' to a dbMap PPDM, OpenWorks, GeoFrame, Petrel or Kingdom SMT system, or use a blend of project file, database and applications stores.

Spatial data management is a core component of Petrosys, leveraging established GIS technology from ESRI, Oracle, MapInfo and Google.

With Petrosys you can use the desktop most suited to your existing applications environment, as it runs in both Windows and Linux. Project data can be shared across the two operating systems.

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