Encom™
Discover™

Integrated Suite of GIS
Applications for the Geosciences

Encom™ Discover™ Suite

Uncover what lies beneath your data with GIS solutions purpose built for the geosciences from Pitney Bowes Business Insight.

GIS for Geosciences The Encom Discover Suite is the Geographical Information System (GIS) designed especially for the geosciences. It provides a seamless suite of tools for compiling, visualising, analysing, and mapping 2D and 3D spatial geoscience data on both desktop and mobile environments. Since its release in 1994, Discover with MapInfo Professional has become the GIS of choice for geologists, environmental scientists, cartographers, exploration managers, and database administrators. Discover is the 'must have' application for geoscientists worldwide.

Maximise the Value of Your Data More than in any other industry, Natural Resources businesses rely on their technical data to successfully locate, evaluate, and develop their primary assets. And they spend a lot of money to acquire this business-critical data. So make sure that you get the full value from your investment by using the right software. Discover does this by integrating data from multiple sources in a unified geospatial environment and then providing your specialists with leading-edge tools in a powerful, yet easy-to-use, framework.

Unlock the Power of MapInfo With its extensive range of features purpose-built for geoscience applications, Discover unlocks the power of MapInfo Professional for geologists and other geoscience professionals. Combined, Discover and MapInfo Professional deliver a perfect balance of general-purpose GIS functionality and specialised geoscience capabilities.
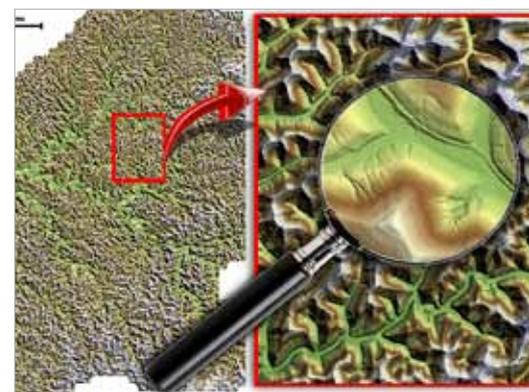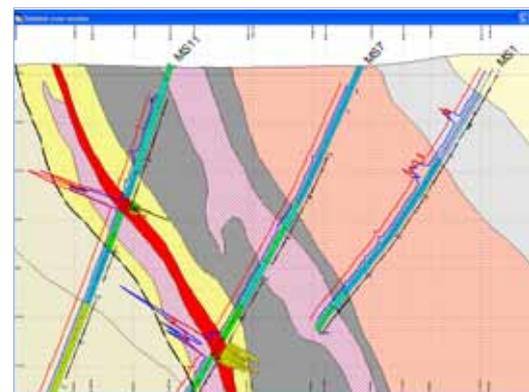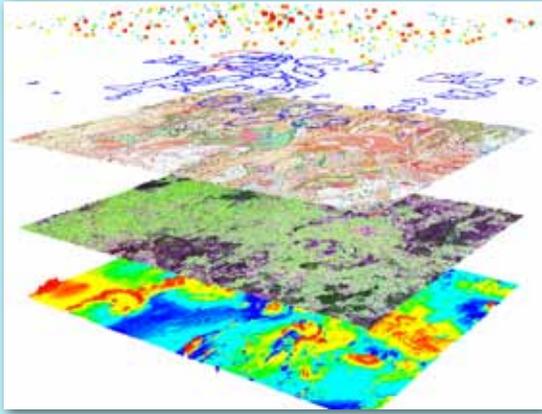
Encom Discover

Encom Discover is an extension to the powerful and reliable MapInfo Professional desktop GIS. Discover's extensive range of functionality is specifically designed for geologists and other geosciences professionals. Encom Discover allows you to seamlessly integrate all of your geochemical, geological, environmental, geophysical, drilling, and cartographic datasets into a single environment.

In addition to an extensive range of general-purpose productivity tools, Encom Discover provides you with a powerful set of tools that are purpose-built for comprehensive data analysis and evaluation. With these tools you can analyse any type of data for temporal, geostatistical, graphical, and spatial trends. Included with these computational and statistical tools are an extensive range of advanced surface gridding and manipulation capabilities capable of handling massive, continental-scale grids.

Discover's special-purpose drillhole project and cross-section management tools work seamlessly within the MapInfo Professional environment. Create detailed, high-quality cross-sections and plans to evaluate drillholes, bores and costeans.

Turbocharge your desktop GIS with Encom Discover

Encom Discover provides a rich set of productivity tools that will enhance the experience of any MapInfo Professional user. The productivity gains for geoscientists are even greater with Encom Discover's purpose-built tools. This enhanced set of layer, window, table, and data tools comprises a multitude of short-cuts and useful new functions which make complex and repetitive tasks easy to perform. Once you've used Discover's productivity tools, you'll wonder how you ever survived without them.

Engineering

Encom Discover provides geotechnical and other engineers with a powerful GIS suite of site investigation, analysis, and presentation tools. Whether you are drill-testing a proposed road tunnel for geotechnical risks and weaknesses, calculating regions of disturbance around a new housing estate, or examining the line-of-sight extents for a new mobile phone tower, Encom Discover will provide a solution.

Encom Discover extends the capabilities of MapInfo Professional with tools integral to site investigation and geotechnical assessment. Because these tools are fully integrated, you can display and analyse your data in standard MapInfo Professional tables and map windows. That means you can also access the full range of general-purpose GIS capabilities offered by MapInfo Professional.

Some of the specialist engineering functions available from Encom Discover include:

- Calculate cut and fill volumes between topographic surfaces

- Examine borehole logs and long sections

- Display borehole properties, such as soil strength, porosity, and water table depth

- Perform line-of-sight (viewshed) calculations

- Evaluate surface properties, such as slope, aspect and surface area

Hydrology and the Environment

Encom Discover provides many innovative solutions for processing, visualising, and analysing data in the hydrological and environmental industries. These include performing watershed and stream analyses; assisting with hydrocarbon or pollutant migration, salinity and dewatering studies; and examining changes in land usage over time.

With Encom Discover, studies are not limited to simple spatial trend analysis, but can also incorporate complex temporal and statistical relationships. These advanced analytical methods make it possible to reveal trends and correlations that might otherwise remain undetected in projects such as site remediation and environmental assessments.

Encom Discover offers a versatile and highly flexible working environment. Make informed decisions and evaluations by incorporating all of your many datasets in the same GIS environment, with over 100 standard industry formats supported, including high-resolution LIDAR topographic data. Adapt the functionality to a broad range of computational tasks, including:

- Change in land-use over time (e.g. flora or erosion mapping)

- Spatial and temporal graphing, trend examination and correlation (e.g. pollution monitoring of multiple stream or borehole sites)

- Hydrocarbon and pollutant migration analysis

- Salinity and dewatering studies

- Catchment delineation

- Stream network generation and ranking

- Topographic slope, surface area and volume calculations

- LIDAR topographic data import and grid interpolation

Exploration and Mining

Maximise the value of your exploration data with a complete set of integrated data processing, analysis, visualisation, and modelling tools. With Encom Discover you can integrate data from multiple and varied sources into one, unified GIS environment. By integrating all your data into a single environment, you can be sure that your prospect or project is thoroughly evaluated using reliable and tested statistical, geostatistical, spatial, cross-sectional, temporal, and graphical methods.

Capture: With Encom Discover you can accurately and efficiently capture spatial information from historical maps for the evaluation of sampling data, grid creation, or to enhance maps and sections. Discover's sophisticated digitising and object editing tools will ensure that you maximise the value of all forms of data, both electronic and physical.

Aerial and satellite photography can be accurately positioned with Discover's image rectification capabilities, and permanently reprojected to remove the confusion of datasets with differing projections.

Map: Effortlessly create professional-quality maps of any size and scale, including the batch production and printing of multiple map sheets covering a region. Incorporate all related spatial data objects, filtered and sun-shaded grids, contours, graphics overlays, geolocated raster images, structural symbols, legends, graphs, tables, scale bars, and other mapping objects.

Assess and Interpolate: Maximise the value of your data with Encom Discover's collection of data assessment tools. A comprehensive range of data pre-conditioning, interpolation and processing tools can help reveal trends and subtle associations in your data. These include:

- Performing detailed analyses of datasets prior to interpolation, with extensive statistical and dynamic graphing capabilities (such as ternary diagrams and box and whisker plots).

- Data attribution and data levelling/normalisation functionality

- Interpolating datasets with powerful algorithms such as minimum curvature, inverse distance weighting and kriging

- Geophysical grid filtering

- Performing complex grid calculations and manipulation.

Evaluate: The Encom Discover drillhole module is a complete drillhole management system, with which you can plan, visualise, and perform detailed analyses of drillholes and costeans in cross- and long-sections, as well as level plans. The true spatial context of all data is maintained, which allows you to overlay all your other real-world GIS data. This might include geophysical modelling,

geological and regolith mapping, interpolated geochemical surfaces, and topographic grids.

Integrate: Discover is designed to work with your special-purpose design, modelling, analysis, and planning systems. By making data accessible to personnel across your entire organisation, your project teams are better able to visualise, communicate, and collaborate. Read and write data in over 100 industry-standard database, image, vector, and grid formats, plus a range of vector conversion options.

Encom Discover 3D

Encom Discover 3D is an optional, advanced module for Encom Discover that turns your 2D GIS into a full desktop 3D platform. Encom Discover 3D bridges the gap between GIS and specialist mine-planning systems, giving geoscientists access to all forms of data from many different sources in an integrated 3D environment.

Visualise: Quickly and intuitively load MapInfo Professional files into the 3D environment to gain a fresh perspective on your data. Enhance this 3D environment with data from other mining and 3D applications: Discover 3D directly supports a wide range of industry 3D formats, from vector files though to voxel (block) models.

Load your Discover drillhole projects and tap into Discover 3D's advanced 3D rendering and editing capabilities. Discover 3D encompasses every aspect of a project: from planning holes to precisely intersecting and testing targets in 3D, to evaluating the results a drilling program. With Discover 3D, you can vary the colour and thickness of drillhole traces by sample attributes such as lithology, assays, and geophysics for easy visualisation and analysis.
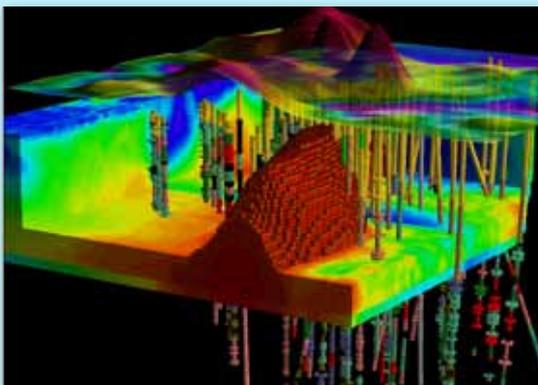
With large data sets, you can focus on the area of interest by filtering out unwanted data. Even your 2D cross-sections and plans can be integrated into the 3D display.

Interpret: With all your data visible in a single 3D space, you can then confidently interrogate downhole intervals and build accurate interpretations of grade and lithological boundaries directly in the 3D environment (or bring in 2D interpretations). Digitise points, polylines and polygons either freehand or by snapping precisely to drillhole intervals in 3D.

Model: Turn your interpretations into 3D models with a versatile array of surface, wireframe, and voxel modelling techniques. Create realistic gridded surface models of topography, faults, and water tables from your point and vector data. Build accurate wireframed 3D solids from your interpretations with powerful shape matching and tie-line controls. Refine these models with Discover 3D's suite of 3D editing tools; for example creating complex splays or extrapolating mineralisation extensions. Mathematically interpolate drillhole assay data to create voxel (block) mineralisation models.

Test: Dynamically plan and refine drillholes in 3D to test your models and interpretations, whether wedging daughter holes from an existing diamond drillhole, or examining likely collar locations to intercept a theorised mineralisation extension.

Share: Create professional-quality animated movies of your 3D projects for shareholder/investor presentations, websites and conferences. Share complex 3D sessions with all Discover users in the organisation with the free 3D viewer built into Encom Discover.

Share your 3D projects with all Discover users

The Encom Discover 3D Viewer is included with the standard 2D version of Encom Discover. Share detailed 3D projects and models created by your Discover 3D users with all Encom Discover users in the organisation, ensuring the whole team can easily visualise and understand the project's overall 3D model and/or development.

Encom Discover Mobile

Encom Discover Mobile is the mobile extension to your MapInfo Professional–Discover desktop GIS. Discover Mobile lets you take your digital data, maps, and imagery with you wherever you go. Running on GPS-enabled Windows Mobile devices, such as hand-held PDAs, Discover Mobile makes it easier than ever before to capture field data. It's also a great way to navigate to and evaluate locations such as proposed drill pads and historic workings.

Map and annotate geological boundaries, faults, structure measurements and outcrop locations in real time at the current GPS position, or using Discover Mobile's freehand drawing tools. Object styles and attributes can be automatically assigned from user-defined style and picklist libraries, increasing fieldwork efficiency and reducing data-logging errors. A rich set of desktop management tools helps with the creation and management of these libraries.

Do you need real time geochemistry? Discover Mobile can capture multi-element measurements using Olympus Innov-X's field-portable Omega XRF system, and display these results in real-time over existing geological, geochemical and geophysical datasets.

Discover Mobile also supports high precision location capture with Trimble's differential GPS systems.

For more information about the Encom Discover Suite, visit us at **www.pbinsight.com.au** or call **+61.2.9437.6255** today.

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