Constrain your earth models with GM-SYS

Integrate seismic, well, and geology data with observed gravity and magnetics

GM-SYS extensions are trusted by international government surveys and the exploration programs of the world's most successful energy companies.
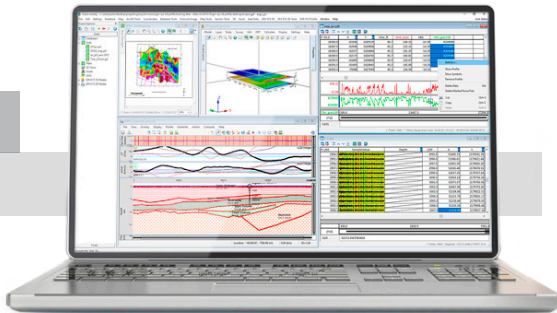
Validate your geological model

How closely does your seismic velocity model match the gravity and magnetic data?

Rapidly create new interpretations based on the latest survey data – and see when the calculated response of the model matches the observed data using interactive tools.

Minimise risks when planning expensive surveys or drilling targets by bringing all your data together.

GM-SYS extensions require Oasis montaj.

Build a holistic model

GM-SYS extensions are directly integrated within Oasis montaj allowing you to view gravity and magnetic data directly alongside your other earth models. Import and incorporate grids, slices, and numeric data from other teams in a seamless workflow.

Run efficient QA/QC controls in Oasis montaj and instantly extract your clean data into GM-SYS to ensure your model is based on the most accurate data.

Match your model to reality

Improve the accuracy of final interpretations and focus the use of seismic surveys and drilling using gravity and magnetic data.
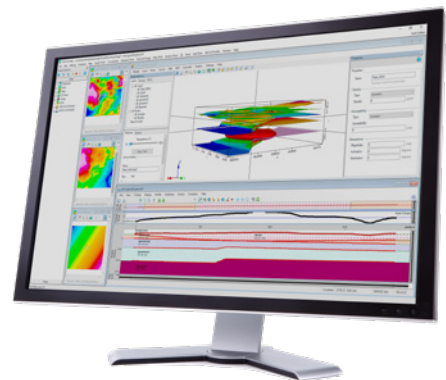
Draw points, polylines, add bodies, and lithology data to your geological model – then instantly see how it impacts your magnetic and gravity models.

Iterate new ideas quickly and see how to best minimise the difference between calculated and observed data.

Reduce risk

Bring data and teams together and make more confident choices about prospect targeting. Gain new insights when you see 2D and 3D visualisations of your data.

Share visualisations of your data to explain ideas and help stakeholders of any technical level make informed decisions.

Quickly interpolate areas between survey lines to develop more precise areas for further testing.

Minimise errors between observed and calculated data

Bring geology and geophysics data together, in 2D and 3D. Select or combine the GM-SYS extensions that best suit your gravity, magnetic, and seismic data modelling workflow.
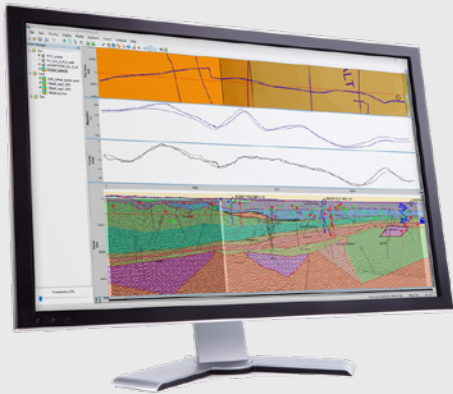
GM-SYS Profile

How well does the regional data match your model? Use your magnetic and gravity data to calibrate your seismic data or visualise an initial magnetic survey to target areas for exploration.

Apply advanced 2D forward and 2D inverse modelling tools to magnetic, gravity, and gravity gradient data to validate your geological model.

With GM-SYS Profile, you can:

Test your model's accuracy

Create a geological model of the subsurface and compare its gravity and magnetic response to observed measurements. Interactive drag/drop tools allow you to adjust the geology and instantly see the response in the gravity and magnetic data.

View all data together

Integrate seismic, well, and geology data with observed gravity and magnetic measurements. Incorporate cross sections and SEG-Y data into 2D models. Read and calculate magnetic gradients along a horizontal axis and along a vertical axis.
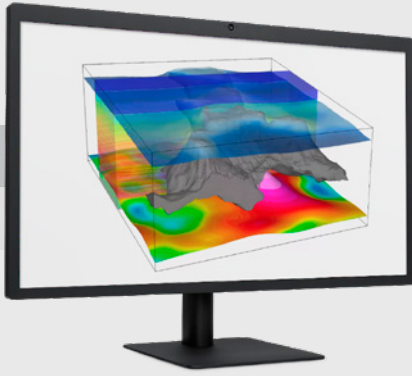
Display hundreds of blocks

Incorporate a massive amount of different geological units into one 2D model. Define any modelled block or horizon by a unique physical property.

Model response data efficiently

Rapidly create models from horizon channels in a database or by digitising over a map profile. Transition your database models into 2D and 3D models easily, and in reverse. Interactively vary the physical property of a block in 2D and 2¾D and watch the model response change in real time.

Refine seismic interpretations

Use interpreted seismic images or geologic cross-sections as a basis to digitise your 2D models.

GM-SYS 3D Modelling

Input 2D grids of magnetic or gravity data and instantly see them in 3D. Interpolate across survey lines to gain a better idea of what's happening between them.

Model complicated 3D subsurface structures of any size or scale using GM-SYS 3D Modelling extensions within Oasis montaj.

With GM-SYS, you can:

Gain insights from 3D views

Integrate gravity, magnetic, and seismic data into your model and see it in 3D.

Create 3D displays easily

Convert database and 2D models into 3D in a streamlined process. Once created, you can further edit the structure and physical properties within your 3D model, and pull in slices from Leapfrog 3D models.

View updates instantly

Perform structural, density, and susceptibility inversions to minimise residual errors between observed and calculated data. Output grids and model properties are automatically updated following your 3D inversion.

View wells in 3D

Add wells, seismic sections or volumes, and other vector or raster information to 3D model visualizations.

Constrain your model accurately

Set the tie points of areas with known geology by creating a well-constrained model. When you perform a structural inversion, your wells remain controlled in place.

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