Project Summary

Transpetro, a subsidiary of Petrobras Transporte S.A., is Brazil’s largest logistics and transport company. It carries oil, natural gas, renewable biofuels, petrochemicals, and other products through a massive 11,000 kilometer pipeline network. With such important infrastructure and strict environmental considerations, Transpetro implemented an integrated geospatial solution to map and monitor its pipeline and other assets.

Using Autodesk geospatial software and taking preventive actions, Transpetro is able to:

- Reduce accidents by 99%
- Improve network security
- Share network data with over 300 users throughout Brazil

The Challenge

Monitoring a large network of oil and gas pipelines is especially challenging. Transpetro struggled to keep current data on the location and condition of Brazil’s pipelines. After accidental pipeline damage from commercial digging or leaks, the Brazilian government allocated funds to build an asset management system to accurately track and monitor Transpetro’s network infrastructure, reducing the risk of accidents.

“Protecting Energy and the Environment

Fewer accidents and a secure network - Autodesk geospatial software helps Brazilian company map and monitor its oil and gas pipelines

“The benefits we see from our solution are too great to be measured. The Transpetro GIS prevents oil and gas spills, which is essential not only to our industry and our bottom line, but also to our planet. It is not only a matter of cost, but also respect for the environment.”

— Ulisses D. Amado
GIS Project Coordinator
Transpetro
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The Solution
Transpetro evaluated other software options in Brazil and abroad, such as ESRI and smaller local vendors. After meeting with current Autodesk customers and comparing functionality, the company chose Autodesk geospatial software. “Autodesk MapGuide was the easiest product to use,” says Ulisses D. Amado, Transpetro’s GIS Project Coordinator. “We could train our staff quickly and start using our new system, the Transpetro GIS, very quickly.”

At the center of the Transpetro GIS is its Ducts Integrity Management Program (PID). After employees enter asset and infrastructure data into the PID, all users can access accurate data to manage pipe usage and schedule preventative maintenance.

Transpetro stores all pipeline data in an Oracle Spatial database and views and queries that through Autodesk MapGuide’s web mapping interface. Users quickly find maps and design files related to specific pipeline projects in a specific area.

In the editing environment, employees use AutoCAD Map 3D to edit projects in DWG format and then export the pipeline data to Oracle Spatial. From there, MapGuide makes the data available through the company intranet. “We make this infrastructure data available for city users, construction employees, and any other authorized agencies who might need to know exactly where pipelines are located in order to avoid accidental damage. Our goal is to prevent leaks and spills and to protect our environment,” adds Amado.

Costs, Time, and Respect
While it is difficult to estimate the time and money saved with Transpetro’s GIS, the savings are evident when considering the implications of recovering from an accident:

- Cost of pipeline repairs
- Cost of pipeline out of service due to an accident
- Environmental clean-up costs and expensive fines
- Cost of damages to the company’s image

Amado adds, “The benefits we see from our solution are too great to be measured. The Transpetro GIS prevents oil and gas spills, which is essential not only to our industry and our bottom line, but also to our planet. It is not only a matter of cost, but also respect for the environment.”

Looking Forward
After the success of the Transpetro GIS, the company is now implementing a new system built on Autodesk MapGuide Enterprise. “We will use MapGuide Enterprise’s new features such as exporting pipelines for viewing in Google Earth. This will drastically reduce the costs of aerial image updates.”

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To learn more about how Autodesk’s geospatial solutions are helping organizations around the world complete projects faster and more cost effectively, visit us on the web at www.autodesk.com/geospatial.

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“Today our accident rate is zero, where before it was relatively high,” says Amado. “Our geospatial solution is a great reference among all other systems available in our parent company of Petrobras. Others are looking at our solution in awe.”

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