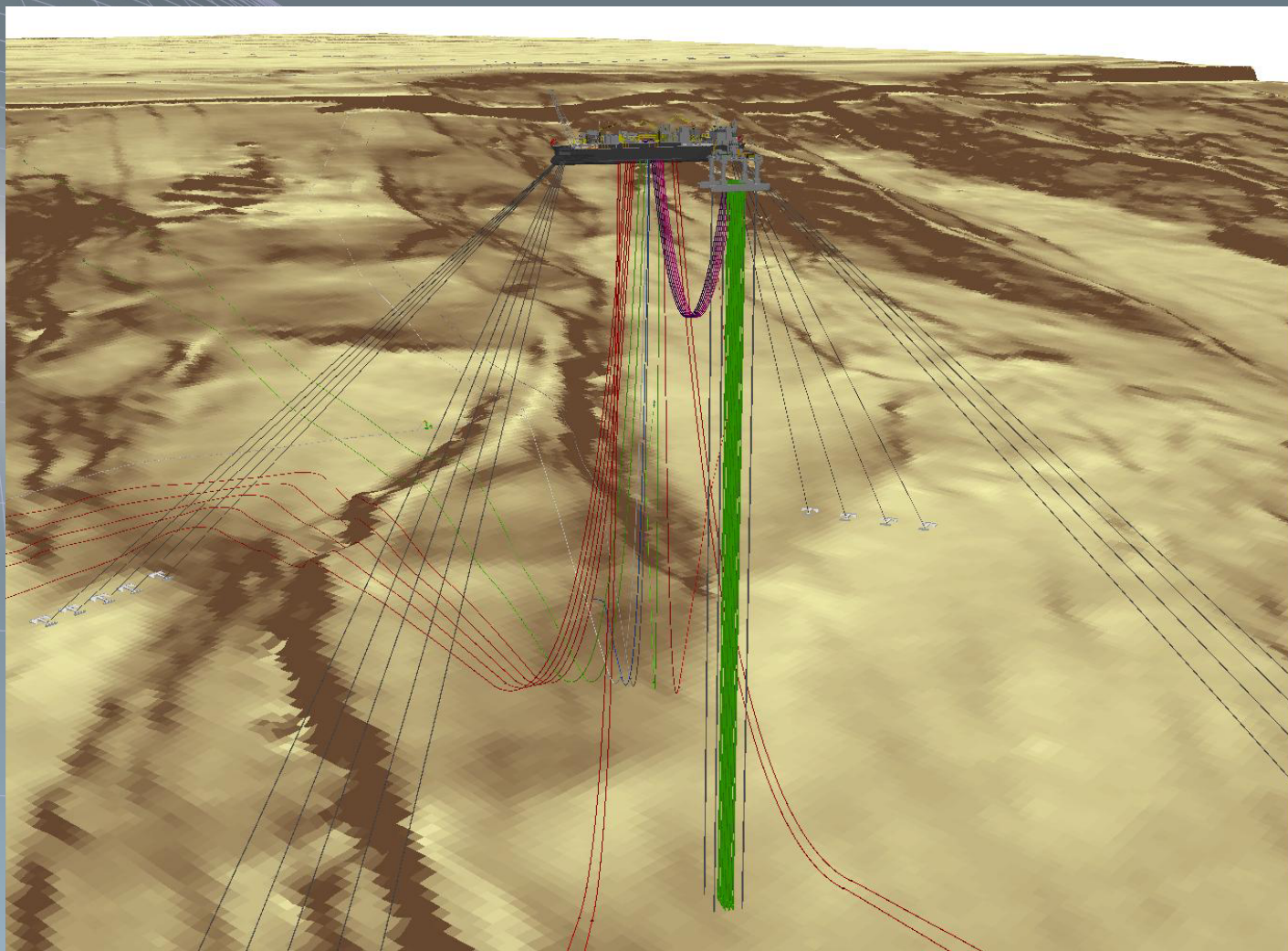


## The Benefit of 3D GIS in the Management of Offshore Equipments



## Outlines

- **The SGO System;**
- **System Evolutions;**
- **SGO 3D.**



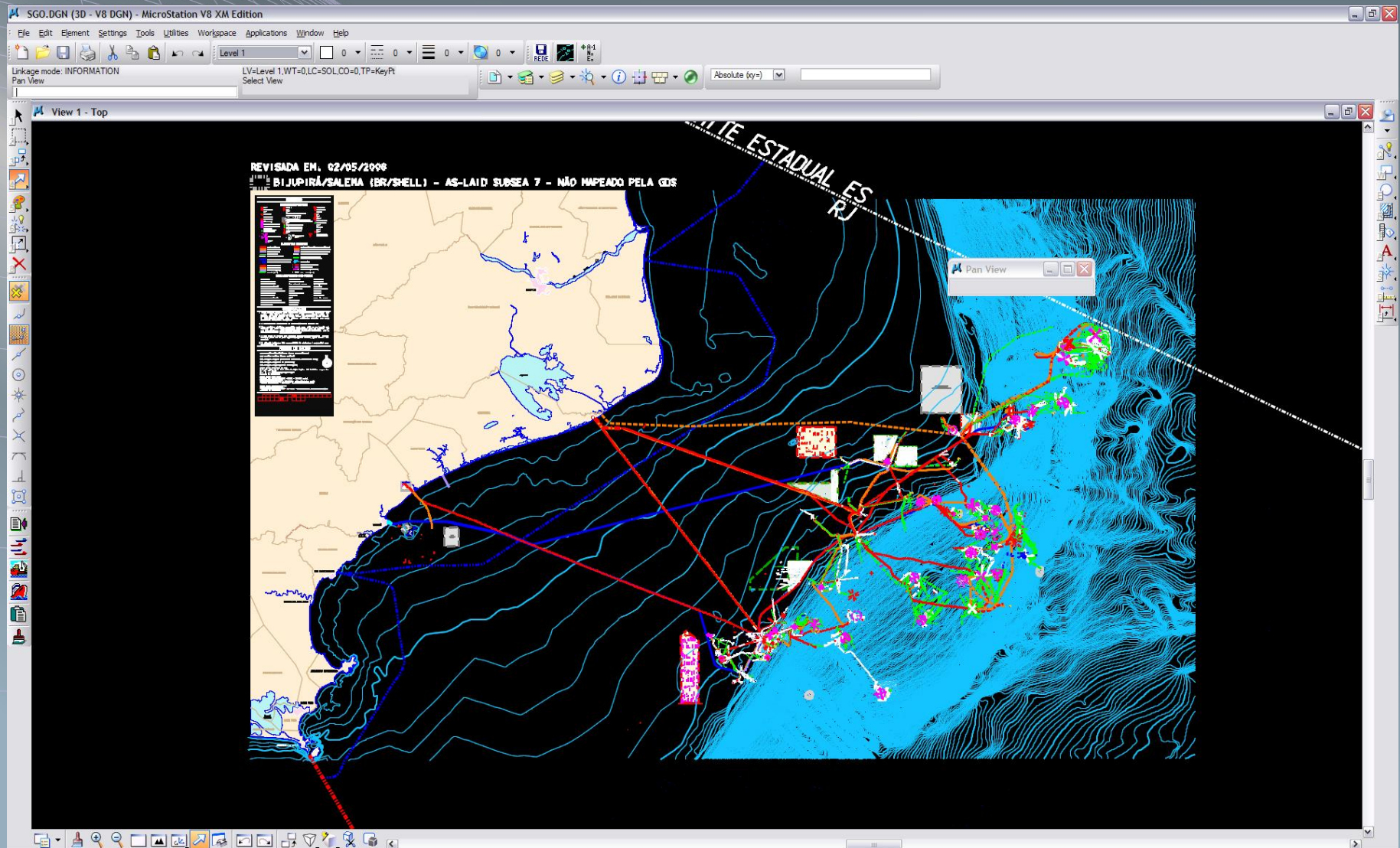
## The SGO System

### Obstacle Managing System (SGO)

**SGO is a system that shows in 2D CAD environment all existent mapped features, located in the surface and sub-surface of the sea**

# System Evolutions

## SGO 2D - CAD System



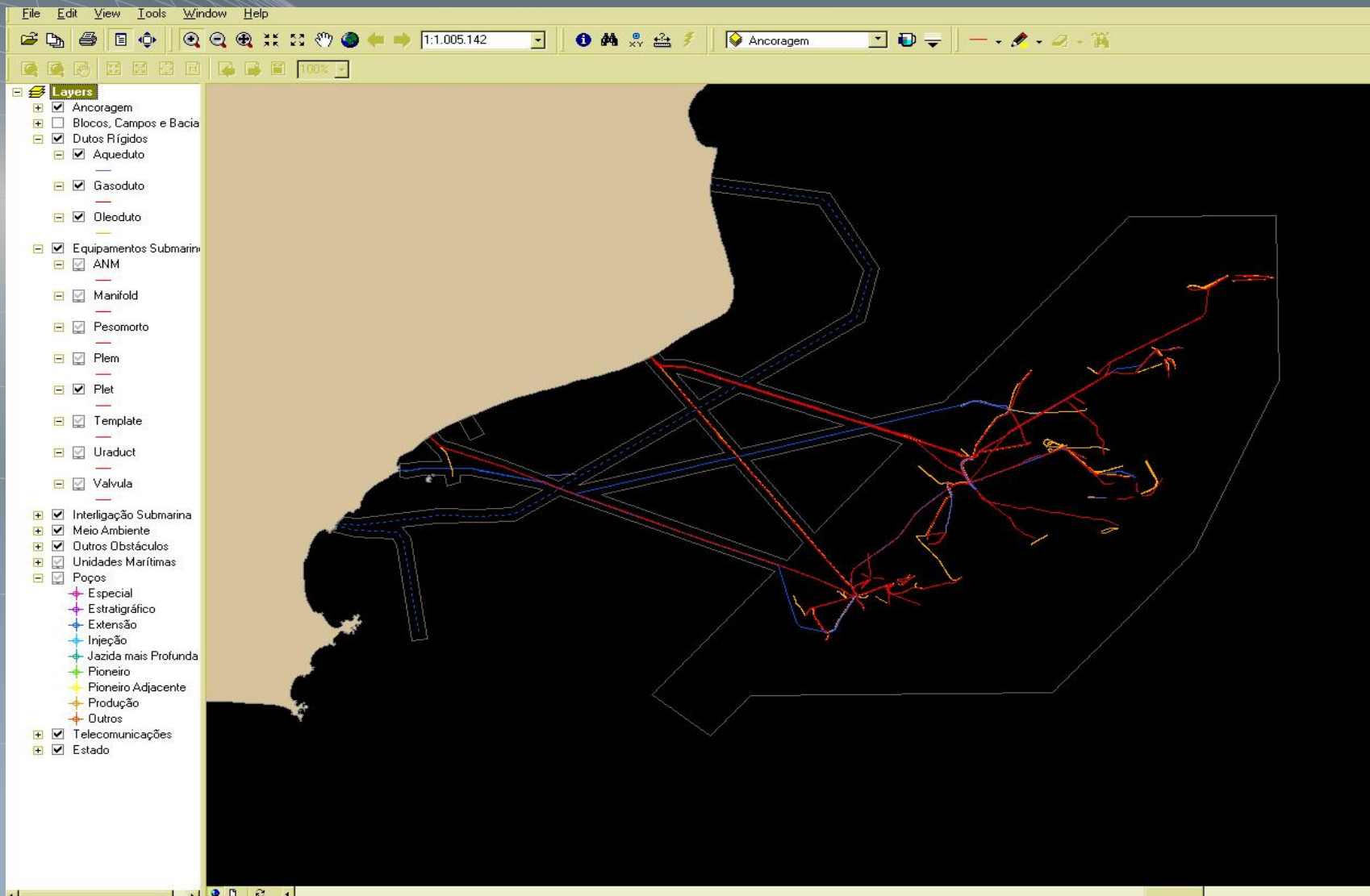


## System Evolutions

### GIS Desktop

The GIS Desktop System was developed to share the SGO in a 2D GIS environment with ESRI Technology.

## SGO 2D – GIS Desktop - ArcReader



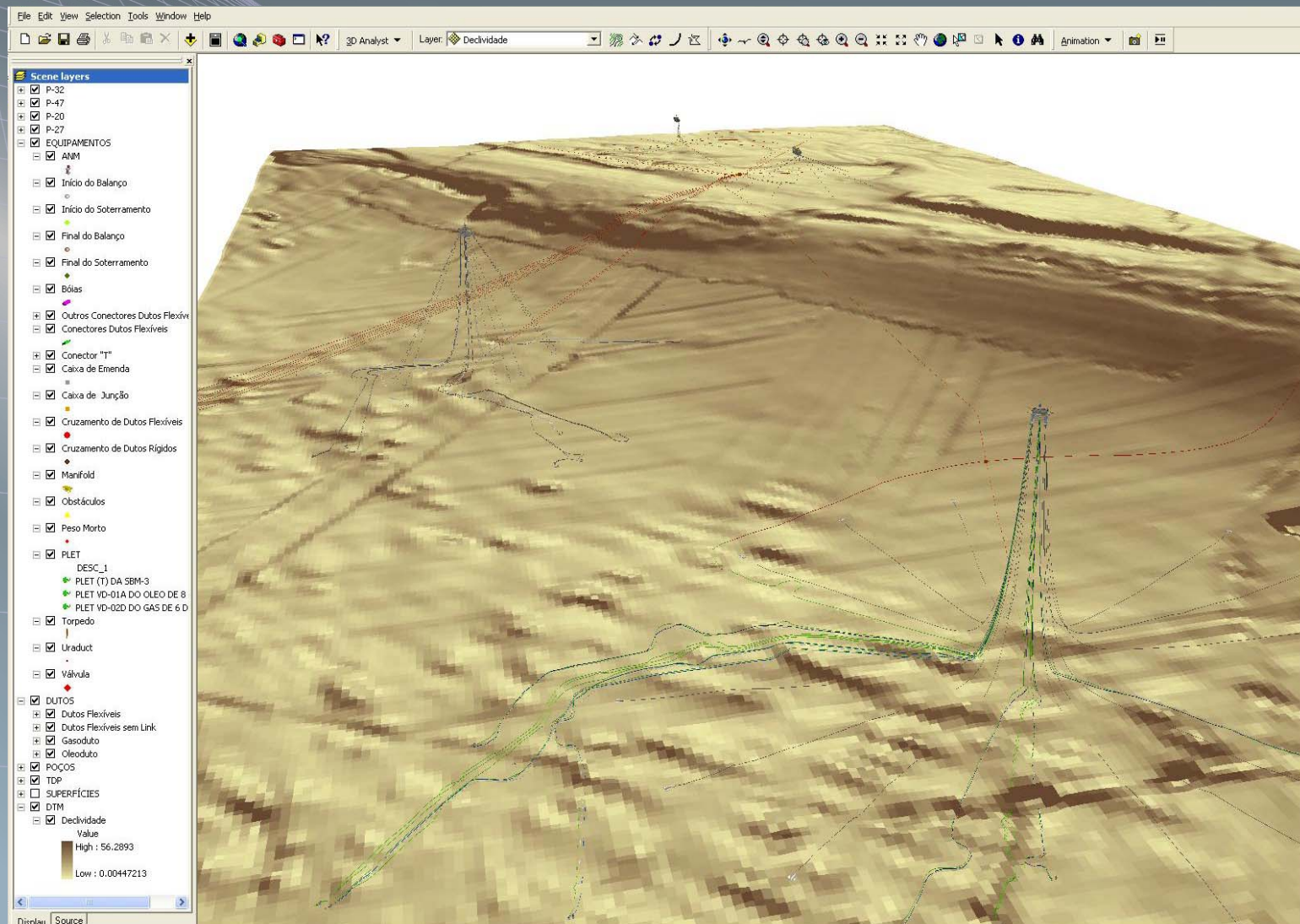
## System Evolutions

### Why 3D GIS?

- Better management of equipments as manifolds, pipelines and platforms;
- All analysis functionalities and queries available in a conventional GIS;
- Supports a better understanding of the data simbols;
- Supports offshore operations, which can be better studied, considering many variables that couldn't be considered in a 2D environment, consequently providing to operations reduced cost and a minimum impact to the nature;
- The 'Easy-to-use' aspect provides to the users good navigation and simple access to the data.



## 3D GIS – ArcGIS 3D Analyst





## Sharing 3D Information – 3D Services

The SGO 3D is an evolution of the 2D CAD System. It is being developed by PETROBRAS and IMAGEM using ESRI Technology and it consists in:

- Get the CAD data and convert them into an APDM Geodatabase (ETL);
- Generate the Digital Terrain Model;
- Create a .3dd project in ArcGlobe with that data;
- Create a 3D Service using ArcGIS Server from the .3dd project;
- Create a .pmf 3D using ArcGIS Publisher from the .3dd project;
- Use ArcGIS Explorer to view the 3D service;
- Use ArcReader to view the .pmf 3D.

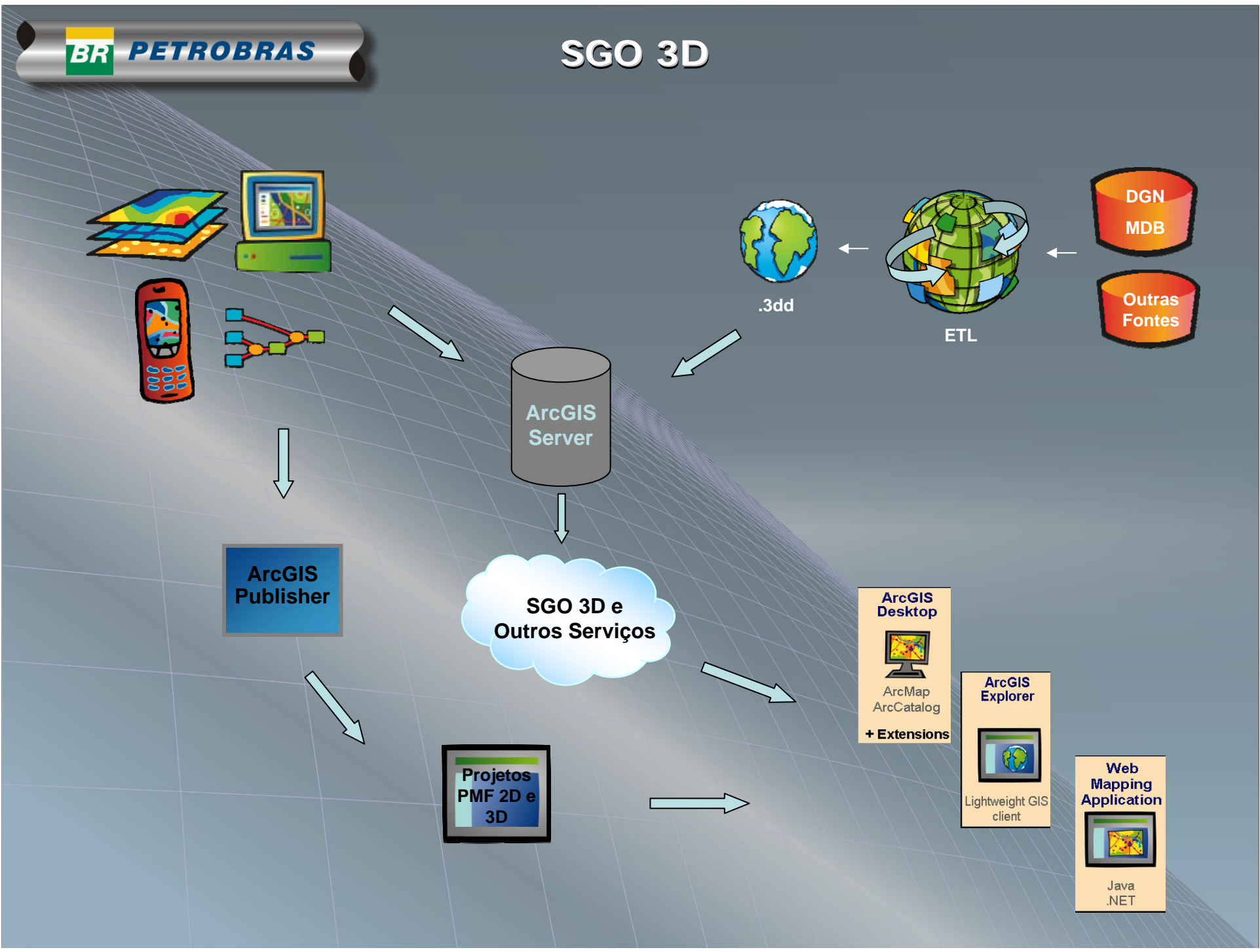
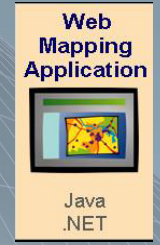
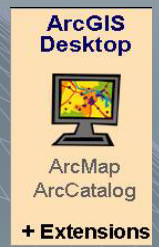
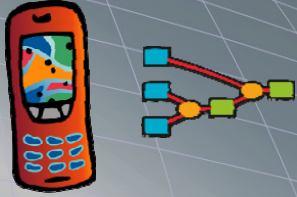
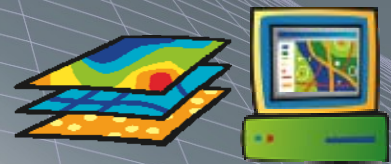
## **Sharing 3D Information – Applications**

**In the release and withdrawal operations of pipelines and flexible lines;**

- **In the positioning of flotation and fixed platforms;**
- **In the Installation of equipments on the seabed;**



# SGO 3D

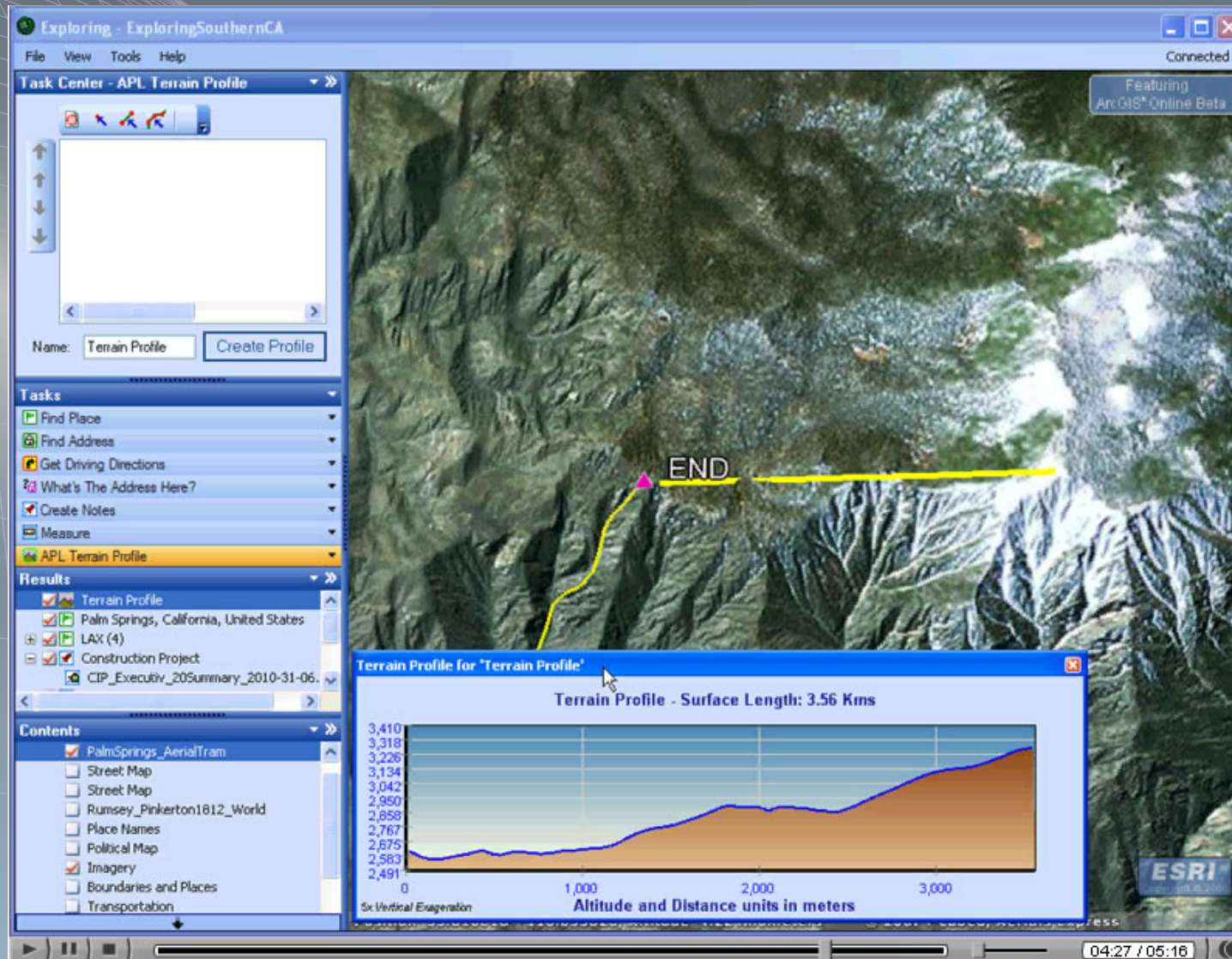


## Users possibilities

- Fuse the SGO 3D service with their local data or other services from ArcGIS Server, ArcIMS or Open Geospatial Consortium WMS;
- Explore The Campos Basin in 3D Environment;
- Perform analysis consuming Geoprocessing Services as tasks;
- Answer geographic questions and share its results with other users;



## Users Interface – ArcGIS Explorer



[marksuel@petrobras.com.br](mailto:marksuel@petrobras.com.br)

Tel: (+55 22) 2761-0875

**Geodesy**  
**E&P-SEV/US-SUB/GDS**