



# GeoSoft<sup>®</sup>

## Company Profile | 2024

Developed by: Mpire

A large white wind turbine dominates the foreground, its blades extending towards the top of the frame. A small black drone is flying in the air between the turbine's blades. In the background, several other wind turbines are visible on a green, rolling landscape under a blue sky with light clouds.

# Pioneering Digital Landscapes through Precision, Innovation, and Integration





# About us



At GeoSoft, we excel in capturing high-fidelity data with submillimeter precision, across varying terrains – terrestrial, marine, subsurface, or aerial, leveraging the most advanced technology tools available.



Further, our solutions bridge the gap between engineering, operational data, and information technologies, paving the way for a seamless digital transition. This drive towards integration demonstrates our commitment to client-centric solutions, fostering data-driven operations across project lifecycles.



We translate this data into digital twins using 3D modelling, visualization, and AI-driven interpretation, creating immersive AR/VR experiences and shaping futuristic landscapes. Through this, we empower informed decision-making and efficient asset management, making data truly meaningful.



At the heart of our operations are our people. Our dynamic team, equipped with an appetite for continuous learning, ensures that we always strive for excellence. At GeoSoft, we're more than a company – we're a group of individuals dedicated to shaping the future of digital landscapes.





## Mission

At Geosoft, our mission is to harness the power of precision and digital innovation to deliver sustainable geospatial intelligence and engineering solutions. We aim to empower clients with accurate, efficient, and safe decision-making tools, contributing to a resilient and digitally advanced future.

## Vision

GeoSoft envisions shaping a digitized future through innovation and excellence, while ensuring the safety, health, and sustainability of our planet. We aim to revolutionize challenges with transformative solutions, fostering a culture of continuous learning and inclusivity.





# Commitment to Health, Safety, Environment and Security

At Geosoft, we prioritize the health, safety, and well-being of our employees, clients, and partners above all else. We are committed to providing a safe and secure work environment, preventing accidents and incidents, and promoting a culture of safety throughout our organization. We strive to continuously improve our HSE performance and meet or exceed industry standards.



## Quality Commitment:

Our commitment to quality is reflected in everything we do. We are dedicated to providing our clients with innovative, sustainable, and reliable solutions that meet their needs and exceed their expectations. Our quality management system ensures that we consistently deliver high-quality products and services that are safe, reliable, and environmentally responsible.

## Environmental Commitment:

We recognize our responsibility to protect and preserve the environment in which we operate. We are committed to reducing our environmental impact by implementing sustainable practices, minimizing waste and emissions, and promoting environmental awareness throughout our organization. We strive to continuously improve our environmental performance and meet or exceed regulatory requirements.

## Quality Commitment:

We take the security and privacy of our clients' data seriously. We are committed to maintaining the confidentiality, integrity, and availability of all data entrusted to us, and we employ the highest standards of data protection and cybersecurity. We continuously monitor and update our systems and processes to ensure that our clients' data is secure and protected from unauthorized access or disclosure.



# Why Choose GeoSoft?

## Cross-Industry Knowledge Transfer:

At GeoSoft, we leverage our precise methodologies and extensive experience from the stringent oil and gas sector, allowing us to transfer not just best practices, but also critical Health, Safety, and Environment (HSE) protocols to diverse industries. Our meticulous attention to detail ensures consistent accuracy and efficiency, fostering a culture of safety and operational excellence across domains

## Deep Experience:

Over a quarter-century in the industry, transforming over 500 offshore platforms and over 50 onshore refineries and petrochemical plants digitally, showcasing GeoSoft's profound expertise and knowledge.

## Local Presence, Global Expertise:

GeoSoft is proudly embedded in key markets globally, affording us the ability to infuse our wide-ranging expertise with local insights. Our proximity allows for lower mobilization costs and faster deployment, creating a seamless, cost-effective service for our clients. With an understanding of local conditions, regulations, and stakeholders, we're not just closer geographically, we're closer to our clients' needs - because at GeoSoft, we believe in centering our operations around the client.

## Unified Solution:

GeoSoft stands out as a one-stop solution for the entire project life cycle. Leveraging our vast experience in engineering, IT, and digital transformation, we go beyond data acquisition to develop intelligent 3D models, Digital Twins, simulations, and offer engineering support. From the project's inception, we visualize the end product from an engineering, handover and operational perspective, ensuring a seamless transition from concept to completion.

## Virtual Eye Digital Twin Solution:

This unique, in-house developed digital twin and visualization platform leverages the potential of computer vision, machine learning, and artificial intelligence. Not only does Virtual Eye cut digital twin development costs by over 80% compared to traditional methods, but it also significantly reduces software and subscription costs. Seamlessly integrating with systems like SAP and other ERP solutions, it puts critical information at your fingertips without the need for extensive training.





# Services

Geosoft offers a diverse range of services, which can be categorized into geospatial intelligence, digital transformation, subsea services, and engineering support.

## Geospatial Intelligence

Our geospatial intelligence services include mapping, spatial analysis, and geospatial data management. We use advanced technologies such as LiDAR, photogrammetry, and GIS to provide accurate and reliable data that can be used for a wide range of applications.

- 01 3D Laser scanning
- 02 Dimension Control Surveys
- 03 Subsidence and Settlement Surveys
- 04 Topographic surveys
- 05 Above & Underground 3D utility mapping
- 06 Geotechnical investigations
- 07 Geospatial Information Solutions (GIS)
- 08 Airborne / Mobile
- 09 3D City Modelling

## Digital Transformation

In digital transformation, we provide solutions that help organizations leverage digital technologies to improve their processes, optimize their operations, and enhance their customer experience. Our services include the development of digital strategies, implementation of digital solutions, and the management of digital assets.

- 01 Digital Twin
- 02 Building Information management (BIM)
- 03 Virtual Plant using 3D scanning and Deep technologies (Industry 4.0)
- 04 VR based - Incident management trainings
- 05 AI/ML Solutions
- 06 Computer Vision and Machine Learning
- 07 Application development
- 08 Drone Inspection Services
- 09 Virtual Reality / Simulations



# Services

At Geosoft, we are committed to delivering high-quality services that meet the unique needs of each of our clients. Our services are designed to help our clients achieve their goals with greater efficiency, safety, and sustainability.



## Subsea

Our subsea services focus on the oil and gas industry, and include hydrographic surveys, geophysical surveys and UXO surveys. We use state-of-the-art equipment and technologies to provide accurate and detailed data that can be used to support offshore construction and operations.

- 01 Offshore Hydrographic Survey
- 02 Near Shore Hydrographic Surveys
- 03 Rig Move and Positioning
- 04 Geophysical Survey
- 05 Geotechnical Survey
- 06 UXO



## Engineering Support Services

Finally, our engineering support services are aimed at providing our clients with the technical expertise they need to successfully execute their projects. We offer a wide range of services, including project management, design and engineering, and construction support.

- 01 Unified Engineering
- 02 Intelligent 3D Modelling - AVEVA E3D - Hexagon SmartPlant – Bentley
- 03 AutoPlant-Autodesk Plant3D
- 04 Construction Simulations - 4D/5D
- 05 Engineering and Process Data Migrations
- 06 SAP Migrations
- 07 Brownfield and green field Engineering Support





# Geospatial Intelligence





## Geospatial Intelligence

Our geospatial intelligence services include mapping, spatial analysis, and geospatial data management. We use advanced technologies such as LiDAR, photogrammetry, and GIS to provide accurate and reliable data that can be used for a wide range of applications.

### 3D Laser Scanning:

GeoSoft's 3D laser scanning technology offers a highly accurate and efficient way to capture detailed measurements of complex structures and environments. Our state-of-the-art laser scanners are capable of capturing millions of data points per second, allowing us to create highly accurate and detailed 3D models of assets and facilities.

Our team of experts uses 3D laser scanning for a variety of applications, including plant and facility design, asset management, and construction site surveys. With this technology, we can capture every detail of your assets and create highly detailed 3D models that allow you to visualize and analyze your assets in a virtual environment.

### Dimension Control Surveys:

GeoSoft's dimension control surveys provide highly accurate measurements of industrial equipment, structures, and components.

Our experienced survey team uses the latest technologies, including laser trackers and total stations, to provide precise and reliable measurements.







## Geospatial Intelligence

### Mobile and Aerial Lidar:

Mobile and Aerial Lidar services provided by Geosoft are a comprehensive solution for clients requiring high precision data acquisition. Our Mobile Lidar surveying combines the latest technology in mapping and geospatial data processing. It is a flexible and efficient solution for mapping transportation corridors, cityscapes, utility corridors, and infrastructure assets.

Geosoft uses state-of-the-art equipment such as Riegl VUX-1HA, Leica Pegasus Two Ultimate, and Trimble MX9, which are mounted on top of vehicles to capture lidar data while driving at normal traffic speeds. Our aerial lidar data is captured using Leica ALS70-HP and Optech Galaxy T1000 sensors, mounted on helicopters or fixed-wing aircraft.

Our mobile and aerial lidar systems provide a wide range of configurations for optimal data collection for your specific project requirements. We use advanced software packages, such as Terrasolid, to process the lidar data and generate high-precision point clouds, digital terrain models, digital surface models, 3D models, and ortho-imagery.

Our mobile and aerial lidar systems offer significant time savings over traditional survey methods. We provide fast, efficient, and cost-effective solutions for clients across various industries, including transportation, utilities, mining, and construction.

At Geosoft, we are committed to providing exceptional value to our clients. Our team of experienced professionals ensures that the collected data is of the highest quality, and the deliverables are tailored to meet the clients' specific requirements. Our Mobile and Aerial Lidar services enable clients to make informed decisions and take actions that improve their operational efficiency, productivity, and profitability.





# Geospatial Intelligence

## Topographic:

Geosoft's topographic survey services provide highly accurate and detailed measurements of the earth's surface. Our experienced survey team uses a variety of technologies, including total stations and GPS, to create highly accurate topographic maps of the terrain and environment.

Our topographic survey services are used for a variety of applications, including land use planning, construction site planning, and environmental monitoring. With our detailed topographic maps, our clients can make informed decisions and minimize risks associated with land use and development.

## Underground 3D Utility Mapping:

Geosoft's 3D utility mapping services provide highly accurate and detailed mapping of above and underground utility infrastructure. Using a variety of technologies, including ground penetrating radar (GPR) and electromagnetic locators, we can create highly detailed 3D models of utility networks, including water and sewer lines, gas pipelines, and power lines.

Our 3D utility mapping services are used for a variety of applications, including infrastructure planning, asset management, and construction site planning. With our detailed 3D models, our clients can make informed decisions and minimize risks associated with utility infrastructure.

## Geotechnical Investigations:

Geosoft offers advanced geotechnical services that utilize cutting-edge technologies and analysis methods to provide accurate and reliable geotechnical data and solutions for a wide range of projects. Our team of highly skilled geotechnical engineers, geologists, and technicians work together to deliver a comprehensive suite of services, including soil investigation, rock mechanics, slope stability analysis, foundation design, and more.

At Geosoft, we use state-of-the-art equipment and software tools to collect and analyze data, including borehole drilling rigs, cone penetrometers, shear vane testers, and seismic refraction methods. Our geotechnical experts carefully analyze the data collected to provide detailed reports and recommendations that include foundation design parameters, ground improvement techniques, and excavation support systems.

Our geotechnical services include site investigation, geotechnical laboratory testing, and geotechnical design. Site investigation involves a comprehensive study of the site geology, subsurface conditions, and groundwater. Our geotechnical laboratory testing includes physical and chemical analysis of soil and rock samples to provide accurate data for engineering design. We use advanced techniques such as X-ray diffraction, Scanning Electron Microscopy (SEM), and Spectroscopy for in-depth analysis.

## Geospatial Information Solutions (GIS):

Geosoft's geospatial information solutions provide a powerful way to visualize and analyze complex data sets. Our team of experienced GIS professionals uses a variety of tools, including ArcGIS and QGIS, to create detailed maps and visualizations of spatial data.

Our geospatial information solutions are used for a variety of applications, including land use planning, environmental monitoring.





## Geospatial Intelligence

To carry out this service, Geosoft utilizes a range of cutting-edge equipment, including high-precision mobile and aerial LiDAR scanners, GNSS receivers, and high-resolution cameras. Our team of experienced engineers and architects are well-versed in the latest software tools and technologies, allowing them to deliver high-quality 3D models and visualizations that meet the specific needs of our clients.

### 3D City Modelling

Geosoft's 3D city modeling service is a cutting-edge solution for creating highly accurate and realistic 3D models of urban environments. Our process begins with the collection of raw data using a combination of mobile and aerial LiDAR, photogrammetry, and surveying techniques.

The collected data is processed and integrated into a comprehensive 3D model using advanced software, such as Bentley's ContextCapture and Esri's CityEngine. Our team of experienced engineers and architects then use this 3D model to generate a wide range of deliverables, including 3D renderings, fly-through animations, and interactive virtual tours.

Our 3D city modeling service provides a wide range of value to our clients. Firstly, it enables better urban planning, design, and decision-making by providing accurate and detailed information about the built environment. Secondly, it improves project communication and stakeholder engagement by creating compelling visualizations of future developments. Finally, it enhances







# Geospatial Intelligence


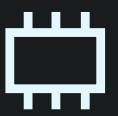




## Subsidence and Settlement Surveys:

Subsidence or settlement surveys are critical for monitoring the stability and integrity of offshore platforms and other structures in the marine environment. These surveys involve the use of advanced geodetic and geophysical techniques to measure the movement of structures over time.

GeoSoft offers subsidence and settlement survey services that utilize a range of cutting- edge technologies, including precision GPS, satellite radar (InSAR), and terrestrial laser scanning (TLS). These techniques allow us to accurately monitor changes in the position and elevation of structures, as well as detect and quantify subsidence or deformation caused by natural or human-induced factors.

Our subsidence and settlement survey solutions are designed to provide timely and accurate data for decision-making, allowing our clients to identify potential risks and take proactive measures to ensure the safety and integrity of their assets. We work closely with our clients to develop customized solutions that meet their specific needs and objectives.

By leveraging our expertise in geodetic and geophysical surveying, as well as our advanced data processing and analysis capabilities, GeoSoft provides value-added subsidence and settlement survey services that help clients optimize their operations, reduce risk, and ensure the long-term sustainability of their assets.

-  Wave radar
-  Accelerometer
-  GPS
-  Strain gauge
-  Cloud computing
-  Dashboard







# Digital Transformation





## Digital Transformation

### Digital Twin Services

Our digital twin service creates a virtual replica of your physical assets, enabling you to monitor, analyze and optimize performance in real-time. By leveraging advanced technologies such as IoT sensors, cloud computing, and AI, we help you gain deep insights into your assets' behavior and make data-driven decisions for greater efficiency, safety, and sustainability.

Digital twins are a powerful tool that allows you to create a virtual replica of your physical asset, which can be continuously updated and monitored throughout its lifecycle. This helps you to improve the efficiency, reliability, and safety of your operations, and can also reduce costs and downtime by enabling you to predict and prevent issues before they occur.

One of the key challenges in creating a digital twin is accurately capturing the data needed to build an accurate and comprehensive model.

In digital transformation, we provide solutions that help organizations leverage digital technologies to improve their processes, optimize their operations, and enhance their customer experience. Our services include the development of digital strategies, implementation of digital solutions, and the management of digital assets.

This requires a deep understanding of the asset and its environment, as well as expertise in advanced technologies such as laser scanning, photogrammetry, and lidar.

At Geosoft, we specialize in creating high-fidelity digital twins for a wide range of industries, including oil and gas, power, and process. Our team of experts combines cutting-edge technology with deep industry expertise to deliver the most accurate and comprehensive models possible.

We also offer a range of data analytics and visualization tools that enable you to gain valuable insights into your assets and operations. From real-time monitoring and predictive maintenance to simulations and what-if analyses, our digital twin solutions are designed to help you optimize your operations and achieve your business goals.

With Geosoft's digital twin solutions, you can improve operational efficiency, reduce costs, and enhance safety, all while gaining a deeper understanding of your assets and operations.







# Digital Transformation

## Building Information management

Our BIM Our Building Information Modeling (BIM) solution offers a comprehensive approach to design, construction, and facility management by creating a digital representation of physical and functional characteristics of a facility. Our BIM solution is specifically designed for the architecture, engineering, and construction (AEC) industry and offers a collaborative and data-rich environment for project delivery.

We use the latest industry-standard software like Autodesk Revit, AutoCAD Civil 3D, and Navisworks, as well as customized software tools, to deliver 2D and 3D modeling, clash detection, coordination, and construction sequencing. Our team of experienced professionals ensures that the BIM models are accurate, up-to-date, and complete, and they can be used for various purposes, including visualization, analysis, and simulation.

We provide BIM deliverables like 3D models, 2D drawings, bills of quantities, construction schedules, and facility management data, which can be used throughout the project lifecycle from design to operation and maintenance. Our BIM solutions enable our clients to save time, reduce costs, improve quality, and minimize errors and rework, resulting in better project outcomes.

At Geosoft, we believe in the power of BIM and its ability to transform the AEC industry. Our BIM solutions are customized to meet the specific needs of our clients and provide them with a competitive advantage in the market. We are committed to delivering high-quality BIM services that meet the highest industry standards and exceed our clients' expectations.

## GeoSoft Virtual Eye

Virtual Plant using 3D scanning and Deep technologies (Industry 4.0): Our virtual plant service combines 3D scanning, deep technologies, and Industry 4.0 concepts to create a virtual replica of your plant or facility. By leveraging this digital twin, we enable you to optimize plant design, process flow, and maintenance, leading to greater efficiency, reduced downtime, and improved safety.

“Geosoft’s virtual tour solution for the oil and gas, power and process industry offers a cost- effective way to remotely inspect assets and facilities, reducing the need for costly and time- consuming site visits. By leveraging our cutting- edge technology and expertise in lidar, laser scanning, photogrammetry and digital twins, we provide a fully immersive 3D experience that allows users to visualize every aspect of their assets in a realistic and accurate way.

Our virtual tour solution is also fully integrated with SAP and other engineering and maintenance information systems, providing seamless access to critical information that helps optimize operations and reduce downtime.

With our web-based, plug-and-play platform, there’s no need for additional software licenses or extensive IT involvement. Plus, we prioritize cybersecurity to ensure your data is always safe.

With Geosoft’s virtual tour solution, you can improve operational efficiency, reduce costs, and enhance safety, all while gaining valuable insights into your assets and facilities.” Join the digital revolution and unlock the full potential of your assets with Geosoft.





## Digital Transformation

Our digital transformation services are designed to help you leverage the latest technologies and innovation to drive business growth, efficiency, and safety.







## Digital Transformation

### **VR based:**

Incident management trainings: Our VR-based incident management training service provides a safe and immersive learning environment to train your workforce on handling emergency situations. By simulating realistic scenarios, we help your employees develop critical decision-making skills, enhance situational awareness, and improve response times, leading to safer and more effective incident management.

### **AI/ML Solutions:**

Our AI/ML service provides customized solutions to help you leverage the power of artificial intelligence and machine learning for your business. By analyzing and processing large volumes of data, we help you gain insights, make predictions, and automate processes to drive innovation, efficiency, and growth.

### **Computer Vision and Machine Learning:**

Our computer vision and machine learning service provides advanced algorithms and tools to analyze and interpret visual data from various sources such as cameras, sensors, and drones. By identifying patterns and anomalies, we help you make more informed decisions, improve quality control, and reduce risks in various industries such as manufacturing, agriculture, and security.

### **Application Development:**

Our application development service provides custom software solutions to address your specific business needs. By leveraging our expertise in various technologies and programming languages, we help you build user-friendly, scalable, and secure applications for greater efficiency and productivity.

### **Drone Inspection Services:**

Our drone inspection service provides a safer and more efficient way to inspect assets such as offshore platforms, pipelines, and buildings. By using high-resolution cameras and sensors mounted on drones, we help you capture detailed images and data for inspections, maintenance, and repairs.

### **Virtual Reality / Simulations:**

Our virtual reality and simulation service provides a fully immersive and interactive experience to visualize and test your products or processes. By creating realistic 3D models and scenarios, we help you optimize design, reduce risks, and train your workforce in a safe and controlled environment.





# Subsea







# Subsea



Our subsea services focus on the oil and gas industry, and include hydrographic surveys, geophysical surveys, and UXO surveys. We use state-of-the-art equipment and technologies to provide accurate and detailed data that can be used to support offshore operations.

## Offshore Hydrographic Survey:

Our offshore hydrographic survey services utilize cutting-edge sonar and imaging technologies to provide detailed maps and models of the seafloor and subsea structures. We offer high-resolution bathymetric surveys, side scan sonar imaging, and sub-bottom profiling to provide clients with a comprehensive understanding of their underwater environment. Our state-of-the-art equipment and experienced survey teams ensure accurate and efficient data collection, analysis, and reporting.

## Offshore Hydrographic Survey:

Our near shore hydrographic survey services are designed to provide detailed mapping and analysis of shallow waters and coastal environments. We use advanced sonar and imaging technologies to capture high-resolution data on underwater topography, sedimentation, and habitat. Our experienced survey teams work closely with clients to design custom survey programs that meet their specific needs, and our comprehensive data analysis and reporting capabilities provide actionable insights for decision-making.

## RigMove and Positioning:

Our rig move and positioning services utilize advanced navigation technologies and precise positioning techniques to safely and efficiently move drilling rigs and other offshore structures. We offer vessel-based and remote positioning solutions, including dynamic positioning systems, to ensure accurate and reliable placement. Our experienced team of engineers and surveyors work closely with clients to provide customized solutions that optimize operations and minimize risk.

## Geophysical Survey:

Our geophysical survey services utilize advanced sensors and data analysis techniques to provide detailed insights into subsea geology and other natural phenomena. We offer a wide range of survey types, including seismic surveys, magnetic surveys, and gravity surveys, to help clients understand the composition and structure of their subsea environments. Our experienced team of geophysicists and surveyors work closely with clients to develop customized survey programs that deliver the insights they need.





## Geospatial Intelligence

### Geotechnical Survey:

Our geotechnical survey services provide critical information on the physical properties and composition of subsea soils and sediments. We utilize advanced sampling and analysis techniques to provide detailed information on soil type, strength, and stability, helping clients make informed decisions about foundation design, seabed stability, and other critical factors. Our experienced team of geotechnical engineers and surveyors work closely with clients to design custom survey programs that meet their specific needs.

### RigMove and Positioning:

Our UXO survey services utilize advanced sensing technologies to identify and locate unexploded ordnance (UXO) and other potentially hazardous objects in subsea environments. We offer a range of survey types, including magnetometer surveys and electromagnetic surveys, to help clients identify and mitigate the risk of UXO and other hazards. Our experienced team of surveyors and UXO specialists work closely with clients to develop customized survey programs that deliver actionable insights for risk management.





# Engineering Support





## Engineering Support

Our engineering support services are aimed at providing our clients with the technical expertise they need to successfully execute their projects. We offer a wide range of services, including project management, design and engineering, and construction support.

### Unified Engineering

Unified engineering is a process that integrates all engineering disciplines to ensure consistent and coherent design, planning, and execution of projects. It streamlines engineering workflows, enhances communication and collaboration, and improves the overall quality of project outcomes. At Geosoft, we use unified engineering to provide a comprehensive solution that integrates all engineering disciplines, including process, mechanical, electrical, instrumentation, and civil engineering.

By utilizing unified engineering, we can create a single source of truth for engineering data, reducing errors and inconsistencies that can arise from managing multiple data sources. We use intelligent 3D modeling tools like AVEVA

E3D, Hexagon SmartPlant, Bentley AutoPlant, and AutoDesk Plant3D to create detailed and accurate 3D models that are fully integrated with the engineering data.

Our unified engineering approach helps us to reduce project risk and cost by optimizing workflows and identifying potential issues earlier in the project lifecycle. It also enables us to provide faster, more accurate design iterations and simulations, leading to better project outcomes.

Overall, our unified engineering approach combined with intelligent 3D modeling provides a significant value-add for our clients, enabling them to reduce project risk, improve project efficiency, and optimize engineering workflows, ultimately leading to improved project outcomes.







## Engineering Support



### Construction Simulations - 4D/5D

Construction simulations involve the use of 4D and 5D technology to simulate construction processes and analyze the impact of construction on the surrounding environment. This involves integrating project schedules and data models into 3D designs to create a comprehensive visualization of the construction process, allowing for better communication, coordination, and collaboration between project teams.

Geosoft brings value to the construction industry by providing cutting-edge construction simulation services that enable better planning, scheduling, and risk management, resulting in significant cost savings and increased efficiency. Our team of experts utilizes advanced 4D/5D software to create detailed simulations that accurately reflect the construction process, allowing our clients to identify and mitigate potential issues before they arise.

Our construction simulations also enable more informed decision-making by providing real-time feedback on project timelines, budgets, and resource allocation. This allows for more agile project management and the ability to adapt quickly to changing project requirements.

Overall, Geosoft's construction simulation services provide a powerful tool for enhancing construction project management, reducing costs, and improving project outcomes.





## Geospatial Intelligence

### Engineering and process data migration

Engineering and process data migrations involve the transfer of engineering and process-related data from one system to another. At Geosoft, we specialize in providing comprehensive data migration services that ensure data integrity and minimize disruptions to operations. Our experienced engineers work closely with clients to understand their specific requirements and design customized migration strategies that are tailored to their needs.

Our expertise in data migration includes a wide range of systems, such as AVEVA E3D, Hexagon SmartPlant, Bentley AutoPlant, AutoDesk Plant3D, and more. We have successfully executed several data migrations, including those for large-scale engineering projects in the oil and gas industry, power generation, and process industries.

We have a proven track record of delivering data migration projects on time and within budget, while ensuring data accuracy and integrity. Our approach involves a rigorous data mapping and validation process, followed by a structured data migration and testing phase.

### SAP Migrations

Geosoft's SAP migration services provide a comprehensive solution for companies looking to migrate their legacy systems to the SAP environment. Our experienced team of SAP consultants and developers work closely with our clients to understand their unique business needs and ensure a smooth transition to the new system.

We specialize in SAP migration to the cloud, which offers numerous benefits such as increased agility, scalability, and cost-effectiveness. Our team has expertise in migrating to SAP's latest cloud platforms such as SAP S/4HANA Cloud, SAP Cloud Platform, and SAP HANA Enterprise Cloud.

Our SAP migration process includes a detailed assessment of the existing system, identifying any data and system dependencies, and developing a customized migration plan. We use state-of-the-art

Geosoft has successfully completed numerous SAP migrations for clients across various industries, including manufacturing, oil and gas, and utilities. For example, we recently helped a large manufacturing company migrate their legacy system to SAP S/4HANA Cloud, resulting in increased efficiency and improved data accuracy.

Our SAP migration services bring value to our clients by reducing system complexity, improving system performance, and enabling better decision-making through real-time data insights. With Geosoft as your partner, you can ensure a successful SAP migration that meets your business needs and drives growth.





## Geospatial Intelligence

### Brownfield and Greenfield Engineering Support

Geosoft's Brownfield and Greenfield Engineering Support services provide comprehensive engineering solutions for the oil and gas industry. Our team of experts delivers multidisciplinary engineering services that include:

#### **Process Engineering:**

Our process engineers provide design solutions for various stages of the project lifecycle. We use cutting-edge technologies like Aspen HYSYS, Aspen Plus, and PRO/II to design and optimize processes. Our services include feasibility studies, process simulation, and optimization, process equipment sizing and selection, and front-end engineering design.

#### **Piping and Layout Engineering:**

Our piping engineers design and detail piping systems, including stress analysis, isometric drawings, and material take-off. We use software like Aveva PDMS/E3D, Hexagon PPM SmartPlant 3D, and Bentley OpenPlant to provide high-quality and cost-effective piping solutions.

#### **Civil and Structural Engineering:**

Our civil and structural engineers design and detail offshore and onshore structures, including drilling and production platforms, living quarters, and process modules. We use software like SACS, Staad.Pro, and Tekla Structures to provide optimized solutions that meet international codes and standards.

#### **Civil and Structural Engineering:**

Our electrical and instrumentation engineers design and detail power, control, and instrumentation systems. We use software like ETAP, EDSA, and Intools to provide efficient and reliable solutions.

Our mechanical engineers provide design solutions for rotating and static equipment, including heat exchangers, pressure vessels, and tanks. We use software like PV Elite, Compress, and HTRI to ensure compliance with international codes and standards.

Our engineering solutions are backed by our state-of-the-art engineering centers across various states of India, equipped with the latest software and technologies. We also use collaborative tools like AVEVA E3D and Hexagon SmartPlant to enable seamless communication between our team and our clients.

Our deliverables include detailed engineering packages, design reports, equipment data sheets, construction drawings, and as-built documentation. Our engineering solutions provide value to our clients by reducing project timelines, ensuring HSE compliance, and optimizing project costs.

All our brownfield engineering services are backed by our state-of-the-art back office engineering centers located across various states of India. This allows us to leverage a highly skilled workforce, advanced technologies, and a cost-effective operating model to deliver superior value to our clients. With our comprehensive solutions, advanced tools, and highly experienced team, Geosoft brings unmatched value to our clients in the offshore oil and gas industry.





# Case Studies





## GeoSoft Virtual Eye

Experience the future of offshore asset management and eliminate the need for frequent site visits.

A prominent oil and gas operator faced critical challenges in effectively managing their offshore assets, primarily due to the frequent and expensive nature of offshore visits and inspections. The operator also encountered significant difficulties in accessing reliable asset information and 3D models due to the high costs of software licenses and the complexities of the interfaces involved. Additionally, the operator's data management systems were disjointed, lacking integration, and hampered by incompatible legacy systems that impeded data integration and analysis. The highly complex data ecosystem posed serious challenges to data security and sharing, with data being generated from various sources, making it challenging to ensure that only authorized parties had access to the information. These challenges significantly impacted the operator's ability to carry out comprehensive maintenance planning and project execution efficiently, resulting in safety risks, delays, and high costs.

### **Solution:**

GeoSoft's solution was to create a digital replica of every physical object in the oil field using 3D laser scans and high-resolution 360 photographs. They utilized computer vision and machine learning to automatically identify each equipment onsite and link it with the client's legacy information systems like 3D Models, SAP, engineering databases, and other EDMS solutions. The solution was called the Virtual Eye, a web-based platform that integrates with the client's SAP and EDMS systems. The platform features a plug-and-play system that doesn't require any license fees or additional IT investment. The Virtual Eye solution simplifies the interface and makes it similar to Google Search and Google Earth. Additionally, the platform has access to 3D models and other IoT devices, allowing for real-time monitoring of asset conditions.

### **Impact:**

The implementation of GeoSoft's Virtual Eye solution had a significant impact on the client's business. It improved operational efficiency, reduced costs, and enhanced safety while providing valuable insights into their assets and facilities. The platform streamlined asset information management by simplifying the

interface, making it easier for staff to access reliable asset information and 3D models. This resulted in cost savings and reduced the time taken for frequent offshore visits and inspections, which were both time-consuming and costly. The Virtual Eye solution also enabled comprehensive maintenance planning and efficient project execution, reducing delays and safety risks.

Furthermore, the platform's access to 3D models and other IoT devices allowed for real-time monitoring of asset conditions, which was previously impossible with traditional methods. This helped the client to identify potential issues before they became major problems, resulting in significant cost savings and improved safety. The solution also helped the client to address data security and data sharing challenges by making it easier to protect and share only with authorized parties.

Overall, GeoSoft's Virtual Eye solution had a positive impact on the client's business, enabling them to unlock the full potential of their assets and facilities.





## Mobile Lidar

# Revolutionizing Pipeline Surveys:

# How We Completed a 650km Corridor Mapping Project in Just 3 Weeks Using Cutting-Edge Mobile Mapping Technology

### Overview:

A large pipeline project faced significant challenges due to delays in completing the design phase and a need for a clear understanding of what lay underground. The project required the mapping of over 45 million square meters of area, and the client had a strict time frame for completion.

### Challenges:

The primary challenge was the tight deadline for delivering comprehensive survey results to the client. Additionally, the client needed to have a clear understanding of what lay underground to avoid potential hazards. The project required accurate topographical and contour maps, digital terrain models, longitudinal profiles, and a comprehensive map of underground utilities in both 2D and 3D.

### Solution:

To overcome the challenges, a mobile mapping solution was proposed that utilized Lidar and GPR technology mounted on vehicles. The Leica Pegasus Mobile Mapper was used to capture high-resolution images, LiDAR, and GPR data to accurately map the entire corridor in just three weeks.

### Impact:

The mobile mapping solution provided the client with comprehensive survey results in just six weeks, including topographical drawings, digital terrain models, contour maps, longitudinal profiles, and a complete underground utilities map in both 2D and 3D. The solution allowed the client to avoid potential hazards and optimize the pipeline route, resulting in significant cost savings and reduced construction time. The use of advanced technology such as Lidar and GPR allowed for accurate mapping of the project area and increased efficiency in data collection and analysis.

### Conclusion:

Mobile mapping solutions utilizing Lidar and GPR technology mounted on vehicles are essential for large-scale projects. They provide accurate and timely data to clients, allowing them to make informed decisions and optimize project outcomes. The use of such technology not only saves time and costs but also increases safety by providing a clear understanding of what lies underground.





# Zero Downtime

## How Geosoft’s Shutdown Solution Revolutionized Spool Replacement

### Hook Line:

Geosoft’s innovative solution replaced 2,000 spools offshore without hot works, eliminating safety risks, reducing costs, and increasing operational efficiency.

### Challenge:

A major oil and gas operator was faced with a critical challenge of replacing over 2,000 spools offshore during a shutdown campaign. Offshore installation of new spools posed a major risk of dimensional mismatches, which required spools to be returned to onshore for modifications, causing delays and increasing costs. The traditional approach of measuring the spools and equipment to be replaced involved non- intrinsic safe survey equipment, which posed significant risks given the gas leak already present in the area. Furthermore, the traditional approach to spool replacement involved hot works for modification and adjustments, which were not only time-consuming and costly, but also posed serious safety risks to personnel and assets offshore.

### Solution:

Geosoft offered an innovative solution to the challenge by replacing the spools with newly fabricated ones from onshore without any hot works. Our team utilized state-of-the-art explosion-proof laser scanning and 3D modeling technology to accurately capture the dimensions of the existing spools and generated high precision 3D models of the new spools to be fabricated. The models were detailed enough to show precise dimensions between flange faces, any error in bolt rotations, and any tilt in flange faces. The models were then used to fabricate the spools with a high degree of accuracy and quality, ensuring that they would fit precisely in the existing pipe systems.

### Impact:

Geosoft’s innovative approach to spool replacement provided a cost-effective, safe, and timely solution for the client. The entire process was completed successfully without any hot works, ensuring safety and reducing costs and time significantly. The offshore installation was completed with “Zero” return of spools from offshore due to any dimensional mismatches, saving onshore modification costs and eliminating further delays. Overall, our solution resulted in increased operational efficiency and reduced downtime for the client.



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**Thank you**  
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