



Smallworld* Gas Distribution Office



Customer Benefits

- Up to 7% reduction in new build costs due to better utilization of gas network resources
- Up to 10% reduction in planning time through accurate and complete documentation of asset network
- Up to 15% productivity improvement in design through more efficient and automated designs
- Up to 7% increase in field data collection productivity through integrated office and field activities utilizing GE's Mobile Enterprise solution
- Up to 10% data as-built update productivity through streamlined as-built update processes
- Up to 15% increase in inspection & maintenance productivity through integrated office and field activities utilizing GE's Mobile Enterprise solution



Managing Gas Distribution Assets

GE's Smallworld Gas Distribution Office (GDO) provides Local Distribution Companies (LDCs) with a powerful and comprehensive gas distribution-specific data model, a set of geospatial business applications and analysis tools that are designed to integrate with existing LDC business processes. Our approach of having a pre-configured and pre-integrated spatial solution that is sustainable is a key benefit for LDCs. Smallworld Gas Distribution Office is a scalable solution that supports small to very large LDCs with large geographic territories.

Smallworld* Gas Distribution Office's approach to implementation with pre-configured and pre-integrated application allows for significant reduction in implementation time compared to traditional customized solutions. Using the Smallworld Gas Distribution Office solution is proven to reduce implementation time and provide a faster return on investment by allowing users to perform their daily business processes more efficiently. Smallworld Gas Distribution Office provides a single source solution for their needs and focuses on business issues, not IT issues:

- Maintain and manage complete and complex spatial asset networks throughout the assets lifecycle, utilizing the applications integrated into their business processes.
- Experience a single user environment that has 21 business, analysis, data quality, and user productivity tools to support engineering, asset management and operational business processes.

- Enable standardization utilizing an industry data model that supports fundamental gas distribution operations and integrity work processes.
- Improve productivity for risk and integrity management.

Solution Strength

The Smallworld Gas Distribution Office suite is a market-leading solution backed by the experience of more than 120 gas utilities worldwide that use Smallworld GIS. Smallworld Gas Distribution Office is a set of business applications used by the gas distribution operators to document, plan, operate and manage their networks. Users can have a complete view of assets and integrity data from a single source (the record of truth), providing faster access to information and reducing training requirements. Smallworld Gas Distribution Office holds accurate up-to-date network information to effectively control the deployment of the critical infrastructure and integrity data on which all end users depend.



Addressing Business Challenges

The major challenges facing gas distribution operators today are the demand for regulatory compliance, risk and integrity management. In order for distribution operators to accurately represent their asset network, provide traceability of assets, completeness of data, data confidence and integrity management, they need to optimize all key processes within the plan, build, operate and maintain lifecycle.

Data Maintenance

Data maintenance is a key and fundamental process for gas distribution operators. The ability to maintain current, accurate, complete, traceable, high quality data is at the root of support for all other processes. Smallworld Gas Distribution Office supports the data maintenance processes, utilizing a variety of different tools to easily maintain asset data, load asset and GPS data, maintain quality, and manage extremely large amounts of related data, all driving towards reducing data maintenance costs through integrated business processes and automated tools.

Market Analysis

Strategic planners need to be able to combine data from a variety of sources and visualize this in one environment. Smallworld GeoSpatial Analysis allows planners to make informed decisions about where new capacity is required or where the existing network capacity can be maximized through replacement of alternative fuel sources.

Network Planning

Hydraulic analysis plays a key role in not only sizing the network for the identified demands but also sizing the network for any potential growth. Smallworld Gas Distribution Office provides the ability to quickly and accurately perform analysis on the network model and increases the accuracy of the analysis results. Unique to Smallworld Gas Distribution Office is the ability to maintain not only the current “as-built” network model, but also one or more future or “to-be” network models. Using these multiple network “states” held in Smallworld Gas Distribution Office, optimization engines can quickly compare the critical operating parameters for a given network supporting better decisions.

Network Design

Smallworld Gas Distribution Office and Smallworld Design Manager provide a powerful set of tools to design, cost, and optimize a planned network. Alternate designs can easily be compared resulting in significant savings.

Consequence Area Determination

In support of Distribution Integrity Management Programs, Gas Distribution Office automatically creates a consequence buffer around gas mains based upon a modified CFER equation. Population data can be applied to these buffers using analysis tools such as Smallworld GeoSpatial Analysis to determine a consequence index for each gas main. These are then used to calculate a Total Risk Score.

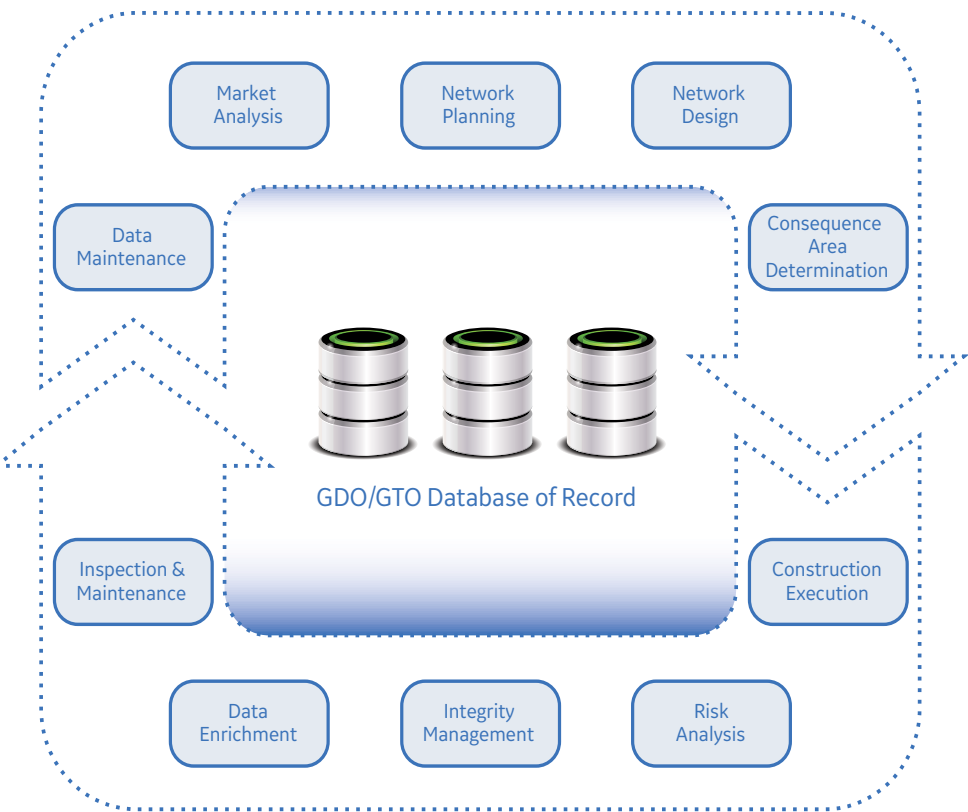
Construction Execution

Reducing data latency and increasing data quality is required for all business processes. Using streamlined data collection processes integrated with GE's Mobile Enterprise solution, operators can expect to see up to 25% productivity improvement with data collection as well as increases in enrichment, traceability, quality and currency of data available to the users.

Risk Analysis

Risk analysis processes require data from multiple corporate resources. Smallworld GeoSpatial Analysis is powerful spatial business intelligence software that is used for risk analysis, market studies, growth analysis, long range planning, and capital investment planning. Smallworld GeoSpatial Analysis allows the risk engineer to access multiple data sources and create risk scenarios quickly and without third party support,

Full Life-Cycle Support



thereby reducing or eliminating third party vendor costs and improving productivity by up to 25%.

Integrity Management

Integrity management requires confidence in data and analysis that result from integrated processes, data currency, accuracy, traceability and quality. Smallworld Gas Distribution Office provides the integrity engineer with the ability to view this information from a single point of entry. Significant benefits include reduced training time, improved productivity, reduction in software required to perform the processes and a single source of truth.

Data Enrichment

New regulatory pressures on operators are requiring comprehensive investigation of records to prove asset “Fitness for Purpose”. Operators are finding that more data is required about the assets to satisfy the new regulations. GE's Mobile Enterprise technology is critical in the Data Enrichment process, providing the ability to quickly and accurately collect the new required data elements and return the data to Smallworld Gas Distribution Office to help satisfy new regulations.

Inspection & Maintenance

The Smallworld Compliance Manager application with the integration to GE's Mobile Enterprise provides powerful tools to support the overall maintenance, inspection and compliancy processes. The ability to schedule, capture and return results addresses many of the regulatory rules for compliance management, asset traceability and data completeness.

The Smallworld Solution

GE offers a portfolio of products that provides end-to-end integrated solutions within the Smallworld Gas Distribution Office product suite. The products are built upon Smallworld Core Spatial Technology, one of the most extensive and scalable GIS technologies available.

Smallworld Gas Distribution Office has a comprehensive data model representing the gas distribution system in a complete network and asset maintenance lifecycle. There are 21 business focused applications, including robust data maintenance tools, analysis applications, compliance support, and risk and integrity management support.

Smallworld Gas Distribution Office Base Product is the comprehensive gas distribution data model, 3 business applications, common office tool set and administrative tools.

Smallworld Gas Distribution Office Compliance Component has 6 powerful applications to meet the day-to-day compliance management needs of gas distribution operators.

Smallworld Gas Distribution Office Data Management Component has 6 robust applications that leverage the data model and provide the user with a variety of tools to manage gas distribution assets and associated data throughout its life.

Smallworld Gas Distribution Office Analysis Component consists of 6 analysis applications that are used in gas distribution operations by a variety of users and business processes.

Market Leading Capability

Smallworld Gas Distribution Office offers unique and unparalleled value to gas distribution operators:

Low risk

Smallworld Gas Distribution Office is an off-the-shelf (COTS) product that is proven in large scale production deployments reducing the risk of implementation and upgrades.

Single network view

GE's fully integrated geospatial solution provides a “Source of Truth” for the entire gas network, eliminating the need to maintain data in multiple systems.

Reduced integration costs

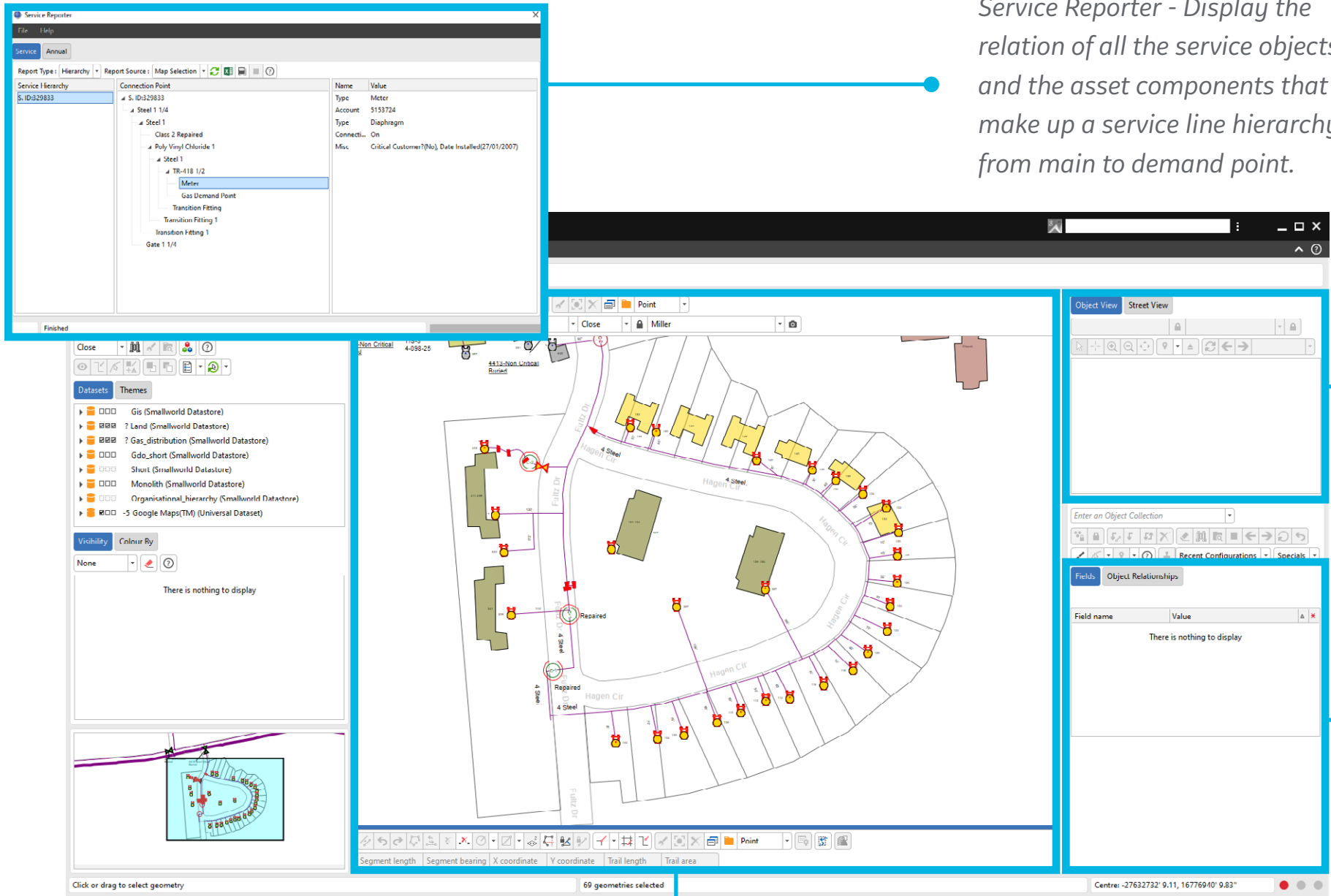
Smallworld Gas Distribution Office is a fully integrated solution. Use of standards and a Service Orientated Architecture reduces integration costs and insulates the system from change.

Total cost of ownership

The rich functionality provided by Smallworld Gas Distribution Office means support for customer requirements is often through simple configuration rather than expensive customization.



Service Hierarchy Reporter



Service Reporter - Display the relation of all the service objects and the asset components that make up a service line hierarchy from main to demand point.

The Map window provides a thematic view of the gas distribution assets.

Review the details of the asset and be able to modify asset details if required.

The Detail Map window provides a detailed display of the object selected in the main map view.

Delivering Business Value

Smallworld Gas Distribution Office enables you to generate significant business value in many areas of the plan, design, build, operate, assess and maintenance lifecycle by addressing specific challenges.

Data Maintenance

Reduce the burden put on gas distribution operators to satisfy PHMSA mandates by providing an easy and reliable standard method to maintain data currency, accuracy, quality, integrity, and completeness. Smallworld Gas Distribution Office supports the data maintenance processes, utilizing many different tools such as the Survey Points Manager to easily maintain asset data, load assets and GPS data and correct centerline position; configurable editors to expedite data entry; and Quality Manager to maintain data integrity.

Market Analysis

Provide strategic planners with the proper tools and data sources to make informed decisions about network expansion and capacity requirements based upon many external and internal factors. Utilizing existing network resources more effectively can reduce new build costs by as much as 7%.

Network Planning

Deliver current and complete as-built “as-is” and proposed “to-be” connected gas distribution networks that yield the most accurate and up-to-date results quickly and accurately for network planners. Using accurate, up to date and complete distribution network documentation can reduce planning time by up to 10%.



Network Design

Provide designers with a single environment that allows for the complete lifecycle management of asset design - from conception, routing, environmental impact, design and materials BOM, to as-built construction - establishing “fitness for purpose” and commissioning of those assets. Smallworld Gas Distribution Office integrated with Smallworld Design Manager provides a powerful set of functions and workflow management tools to manage the complete process of design, build, commission and documentation of assets. Using more efficient tools and managed work flows can improve design productivity by up to 15%.

Consequence Area Determination

Reduce the burden put on gas distribution operators to satisfy PHMSA mandates by providing an easy method to maintain accurate record consequence areas to support the Distribution Integrity Management Programs. Smallworld Gas Distribution Office provides a configurable feature that creates a consequence area (buffer) around gas mains can be utilized by Distribution Integrity Management Risk solutions. The consequence area buffers are automatically created on insert and update actions on gas mains.

Construction Execution

Institute an efficient method to capture “what was constructed”, aiding in data accuracy, reducing data latency, and maintaining traceability of asset data help satisfy requirements placed upon operators by regulatory agencies. The integration of Smallworld Gas Distribution Office and GE's Mobile Enterprise plays a significant role in overall asset

management. Utilizing GE's Mobile Enterprise for integrated office and field activities can increase field data collection productivity by up to 7%. Collecting what was constructed when it was constructed provides data traceability and reduces data latency.

Risk Analysis

Smallworld GeoSpatial Analysis allows the risk engineer to access multiple data sources (including multiple Geospatial formats) and create multiple risk scenarios quickly, without the need to purchase, implement and support third party tools. It also provides access to multiple defined data sources allowing risk engineers to perform analysis and assessment of risk on assets from multiple unrelated sources to yield a set of credible results utilizing a single environment. Using Smallworld GeoSpatial Analysis can reduce or eliminate the costs for third party solutions and improve productivity by up to 25%.

Integrity Management

Assure that the integrity management processes have access to the required data and the analysis results meet the requirements of the regulatory rules. Smallworld Gas Distribution Office's Risk Analysis tools provide integrity and risk engineers with the ability to execute and view integrity and risk result.

Data Enrichment

Fill the data gaps identified during the Risk Analysis and Integrity Management process and provide traceability and completeness of data to satisfy regulatory requirements. Smallworld Gas Distribution Office's Work Flow Manager and

GE's Mobile Enterprise software provide operators with tools, applications and process structure to capture data required to satisfy the regulatory requirements. Using GE solutions, operators will rapidly realize the benefits from the ability to quickly and accurately collect and process newly required data elements.

Inspection and Maintenance

Optimize Inspection and Maintenance compliance and efficiency while reducing overall process costs. Smallworld Gas Distribution Office's Compliance Manager Application, with the integration to GE's Mobile Enterprise software, provides powerful tools to support the overall maintenance, inspection and compliancy processes. Utilizing GE's Mobile Enterprise for integrated office and field activities can increase inspection and maintenance productivity by up to 15%.





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