

FDO Provider for GE Smallworld Core Spatial Technology™

# Understanding the Value of the FDO Provider for GE Smallworld Core Spatial Technology™

This white paper offers an overview  
of the FDO Provider for GE Smallworld  
Core Spatial Technology™ and the value  
it provides to customers in the Utility industry

## Introduction to FDO

The growing need for openness and interoperability between traditional geographic information system (GIS) applications and mainstream operational information technology (IT) systems, as well as integration with public or private web mapping services, calls for seamless data access to native formats and platforms. Without it, users face the inefficiency and inaccuracies of having to translate various data sources into the format supported by their GIS application in order to provide a collective “single view” of the data.

Autodesk® FDO Data Access Technology (FDO) provides the solution. Incorporated into Autodesk® Geospatial products, and also available as a stand-alone, open source technology for developers, FDO helps increase productivity and save time by enabling users to work seamlessly on a variety of spatial and non-spatial databases and file formats natively, without the need for translation and risk of data loss.

The basic features of FDO include the following:

- Provides an object-based feature model of geospatial data that is generic and independent of any particular native implementation
- Supports, as a minimum, the OGC Simple Feature specification geometry types.
- Defines a logical model that maps to commonly used physical implementations such as Oracle Spatial and SHP files
- Defines an FDO Provider as an implementation of the FDO API for a particular data source. Each data source has a corresponding FDO Provider.
- Defines a capabilities API to allow clients to determine specific capabilities of a particular provider and thus respond correctly to the provider to which they are connected
- Allows new commands and schema additions to be easily added over time to the generic API and allows custom commands to be added to a particular provider.

FDO has been available in Autodesk products since 2004, and in 2006, Autodesk decided to submit FDO to the open source community under the Open Source Geospatial Foundation™ (OSGeo™) in order to help make map serving technologies more accessible to a larger audience, thus encouraging widespread adoption of the FDO technology.

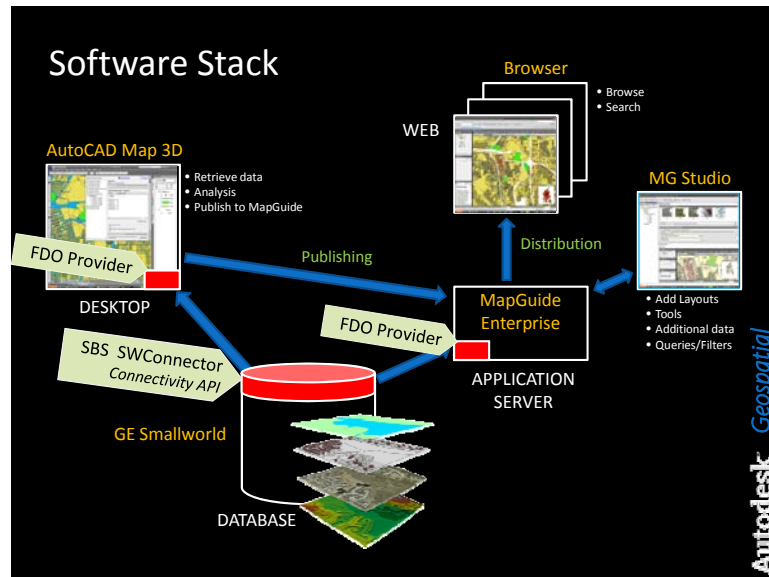
Organizations such as the City of Tacoma use FDO technology to provide their users with seamless access to facility data stored in a variety of corporate repositories ranging from CAD files to Oracle Spatial databases. FDO provides a unified view of those assets, allowing users to always have current information at their fingertips, whether they are desktop editors or web-based browsers of data.

## The FDO Provider for GE Smallworld

Leveraging proven FDO technology, Autodesk now offers an FDO Provider for the GE Smallworld Version Managed Datastore (VMDS) environment. GE Smallworld is a leading geospatial technology for utilities and telecommunications companies who are commonly large AutoCAD software users as well. The FDO Provider for GE Smallworld seamlessly bridges the data access gap between the corporate GE Smallworld repository and the data editors that are using AutoCAD software.

Built in collaboration with Spatial Business Systems, the FDO Provider for GE Smallworld provides read only access to GE Smallworld data, allowing display, query and analysis in Autodesk products such as AutoCAD® Map 3D, AutoCAD® Civil 3D, Autodesk MapGuide® Enterprise, Autodesk® Topobase™, and Autodesk® Utility Design software.

The architecture of the GE Smallworld FDO Provider includes the actual FDO Provider as well as SBS' SWConnector™ software, and server side API for accessing GE Smallworld VMDS data:



**The Autodesk GE Smallworld FDO Provider Architecture**

The FDO Provider for GE Smallworld has been tested with GE Energy’s Smallworld Core Spatial Technology™ v. 4.1 , providing a stable platform for companies considering upgrading their GE Smallworld system. Furthermore, if GE Smallworld customers plan to eventually move to the GE Smallworld Oracle Spatial based platform, FDO’s existing provider for Oracle Spatial still insulates AutoCAD Map 3D software user from disrupting data format and database access changes.

## Value Proposition

The value proposition for the new FDO Provider for GE Smallworld is compelling – FDO technology allows users of AutoCAD Map 3D, Autodesk Topobase, AutoCAD Civil 3D, Autodesk Utility Design and Autodesk MapGuide Enterprise products to access live data from the GE Smallworld corporate repository, including specific GE Smallworld alternatives. This is a much more valuable and useful paradigm than the traditional “publishing” techniques that GE Smallworld clients typically have used to deliver data to downstream users. Common techniques include using in-house file exports or FME data conversions in various client formats such as DWG on a nightly or weekly basis, sometimes taking several hours after which the data is almost immediately out of date due to updates occurring in the GE Smallworld system.

Now with the FDO Provider for GE Smallworld, users have dynamic access to the latest information and are able to make more confident decisions knowing that current data is available to them. Moreover, as the data model in GE Smallworld inevitably evolves, downstream users are not affected by these changes and the cost and effort of updating migration scripts is eliminated.

## Case Studies / Examples

### A Corporate Portal Environment

Utilities typically have a variety of corporate asset repositories across their enterprise. For example; a large investor owned multi-utility may use GE Smallworld for electric distribution, ESRI ArcGIS for gas distribution and transmission, and MapInfo for real estate management. Other departments such as, Environmental Studies, may be working with ArcView, while the drafting department is using Autodesk AutoCAD software. How do we get all these data source together in order to

understand a multidisciplinary issue? Autodesk FDO technology allows all of these data sources to be accessed dynamically in a single session using Autodesk FDO enabled products. Using Autodesk MapGuide Enterprise software as a corporate web portal, allows the utility to combine GE Smallworld electric asset information, with MapInfo based land information, gas network data stored in ESRI ArcSDE, DWG Design data, and environmental information stored in ArcView Shape files, all into a single map. As a result, customers have quicker access to data, more reliable information, and the ability to future-proof the company's investment in engineering and IT systems.

## Providing Contractor Access to the Geospatial Repository

Third party engineering firms make up an increasing percentage of the labor force in many utilities, and granting access to the facility data necessary to do their job is problematic due to security issues, format differences with what tools they are using, etc.

The FDO Provider for GE Smallworld gives utilities a platform for delivering data directly to 3<sup>rd</sup> party engineering firms in the format they are used to – AutoCAD DWG. Dynamic, secure access saves precious time, improves the engineering firm's knowledge about the project, and ultimately results in a better quality product.

With regards to security, FDO Data Access Technology conforms to existing data store security parameters, thus helping to ensure that data is being accessed, viewed, and edited only by users with the requisite permissions. This capability is especially useful when multiple users are accessing and sharing the same data source(s) or from web services.

## Summary

Autodesk's FDO Provider for GE Smallworld represents a significant step forward for the utility industry as it allows companies to provide seamless access to key utility assets. FDO's rich architecture, multitude of supported formats, and open source momentum gives utilities the opportunity to create rich portals for their users as well as 3<sup>rd</sup> party providers. And as their enterprise environment evolves, FDO will insulate users from these changes, and provide them with an uninterrupted, productive environment.

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