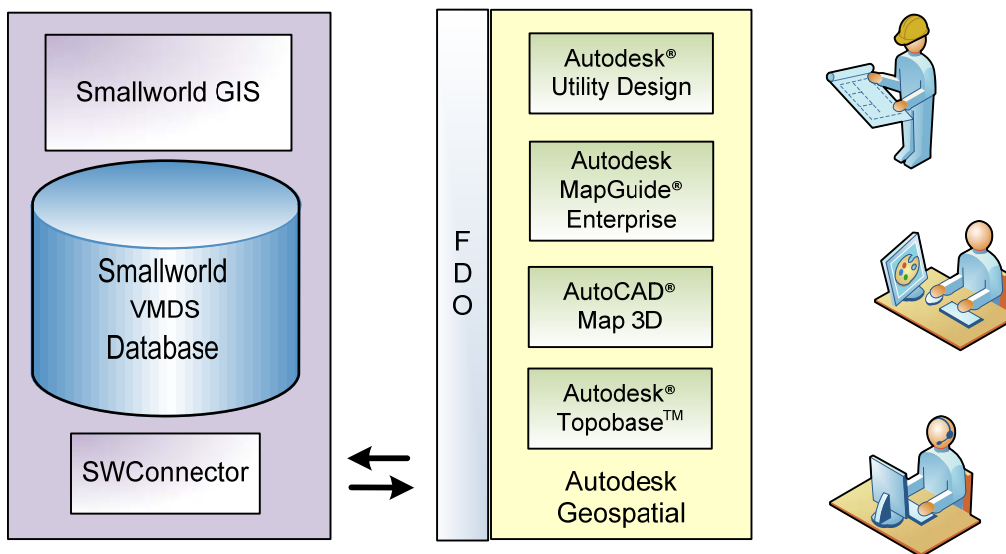


## FDO Provider for GE Smallworld

The FDO Provider for GE Smallworld is a powerful solution that uses the Autodesk FDO Data Access Technology to provide seamless, dynamic data access to GE's Smallworld GIS product. The FDO Provider for Smallworld eliminates the need for data translation, Smallworld Magik programming and custom integration development to access data from Smallworld's VMDS database. Users can take advantage of the rich repository of data in Smallworld with the power of Autodesk's geospatial products.

Key components of this solution are the SWConnector for FDO, a powerful application programming interface (API) from Spatial Business Systems and Autodesk's FDO Provider, a free downloadable component for Autodesk Subscription customers. For more information, go to [www.autodesk.com/fdo-smallworld](http://www.autodesk.com/fdo-smallworld).



*FDO Provider for GE Smallworld Architecture*

## Smallworld Connector

The Smallworld Connector (SWConnector) is a comprehensive API for GE Smallworld. With SWConnector Smallworld, customers can now develop applications in C#, VB.NET or Java and integrate these applications with Smallworld. SWConnector isolates the developer from having to learn the Magik programming language and allows practically any Smallworld application to be developed using the .NET or Java languages.

The SWConnector API is provided as a dll supporting the Smallworld TICS architecture and leverages data marshalling to provide very high performance. The SWConnector API provides a range of standard functionality and is extensible to add new functionality.

SWConnector is also available in a specialized version for Autodesk's AutoCAD Map 3D, Autodesk Utility Design, Autodesk Topobase and Autodesk MapGuide Enterprise applications. Leveraging the proven FDO technology, the Smallworld Connector/FDO Provider for Autodesk provides access to Smallworld data, allowing display, query and analysis in Autodesk products.

### **Feature Data Objects (FDO) Technology**

Feature Data Objects (FDO) technology is the mechanism that enables Autodesk Geospatial products and enterprise applications to work natively with spatial data stored in relational databases, files and web-based services. FDO Data Access Technology is included in AutoCAD Map 3D, Autodesk Utility Design, Autodesk Topobase and Autodesk MapGuide Enterprise. Basic capabilities of FDO include:

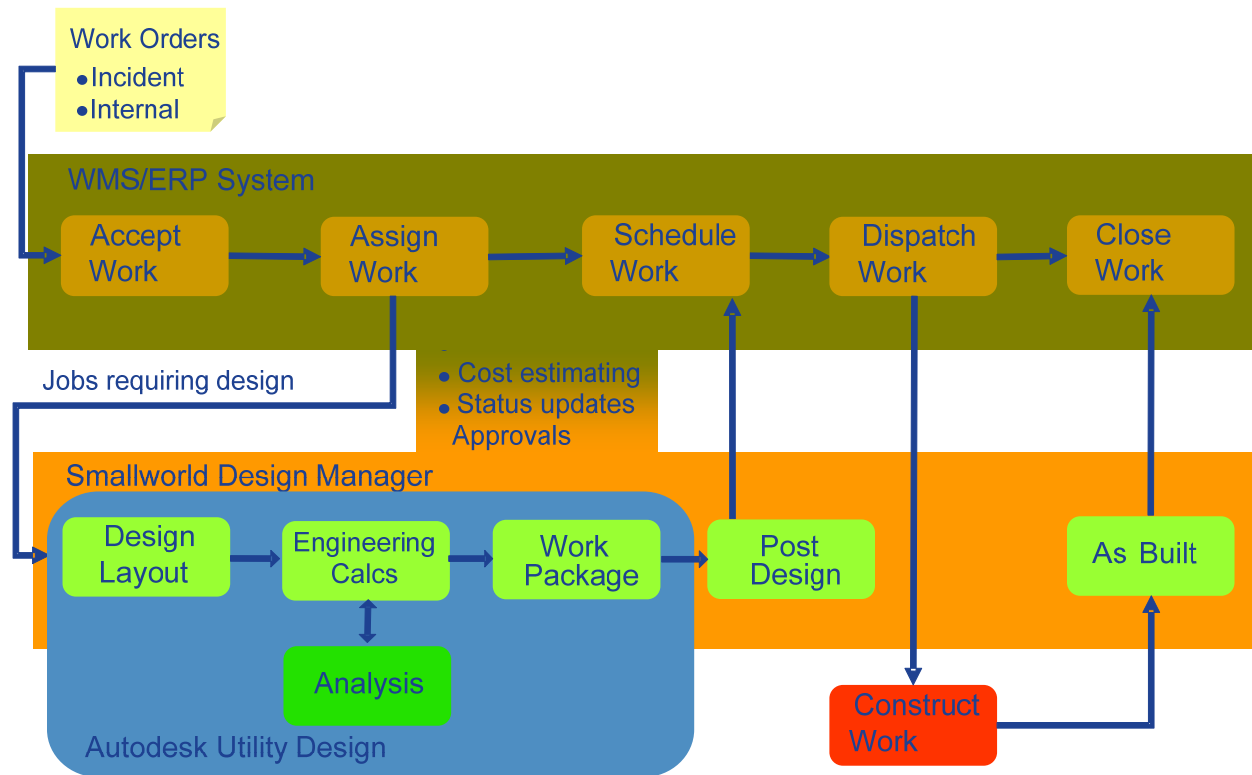
- Provides an object-based feature model of geospatial data that is generic and independent of any particular native implementation.
- Supports, as a minimum, the OGC Simple Feature specification geometry types.
- Defines a logical model that maps to commonly used physical implementations such as Oracle Spatial and SHP files.
- Defines an FDO Provider as an implementation of the FDO API for a particular data source. Each data source has its 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. The capabilities API allows a client to discover the custom commands.

The Smallworld Connector/FDO Provider includes the actual FDO provider as well as the SBS SWConnector software and the API for accessing Smallworld VMDS data. FDO has been available since 2004 in Autodesk products. In 2006, Autodesk submitted FDO to the open source community to make map-serving technologies more readily available for widespread adoption. Version 1 of the FDO Provider for Smallworld is read-only. A version supporting update operations will be available as part of a future release.

### **A Powerful Solution for Integrated Utility Work Flows**

One example where the FDO Provider for Smallworld can be used is to integrate engineering design workflows between Autodesk Utility Design (AUD) and GE Smallworld's Design Manager in a utility work management environment. While the AUD and Design Manager products often compete in the

marketplace there can be great value by leveraging the strengths of the different products within the Smallworld GIS environment. One of Design Manager's key strengths is the ability to work seamlessly within the Smallworld GIS environment. This includes a tightly integrated use of the Smallworld version management architecture to support well-defined utility workflows as well as a flexible state model. AUD is a powerful graphical design tool that also includes a comprehensive set of engineering tools, including automatic guying, voltage drop calculations, and clearance checking. By combining these tools the strengths of each product can be leveraged to create highly efficient engineering design workflows.



*Integrated AUD and Smallworld Design Manager Workflows*

An example of this workflow is shown in the above diagram. Using this approach a designer can query the Smallworld database for an as-built network using FDO. The Smallworld-based network is then converted into AUD design entities and a design can be created within AUD. Once the design is completed in AUD it is submitted to a staging area in the Smallworld version managed database where it can be managed within the different states that are defined for Design Manager.

### **Achieving the Benefits**

The FDO Provider for Smallworld allows organizations to leverage both Smallworld and Autodesk technologies to take advantage of their combined strengths. This allows utilities to:

- Avoid incurring the costs of custom integration between Smallworld and Autodesk systems
- Reduce costs and inefficiencies with doing periodic data translation
- Provide more current data thus reducing the risk of inaccurate designs, project rework and potential safety issues.
- Improve the efficiency of designers by providing the most effective tools for the job
- Provide better, well-engineered designs
- Reduced system maintenance costs by eliminating custom software code

Additional information can be found at:

[www.autodesk.com/fdo-smallworld](http://www.autodesk.com/fdo-smallworld)

[www.autodesk.com/aud](http://www.autodesk.com/aud)

[http://www.ge-energy.com/prod\\_serv/products/gis\\_software/en/design\\_mgr.htm](http://www.ge-energy.com/prod_serv/products/gis_software/en/design_mgr.htm)