



## Reading or Writing Smallworld Datastores Using FME

Reading and writing Smallworld data using FME® is dependant on the version of Smallworld and also requirements of your data translation configuration. There are four data translation options:

- Smallworld 3 FME Translator
- Smallworld 4 SWAF FME Translator
- FME reader/writer from Spatial Business Systems Inc.
- Smallworld SOM for FME

### Smallworld 3 FME Translator

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This configuration works with Smallworld 3.2 & 3.3. The installation requires:

- FME Smallworld Edition
- GE Smallworld-FME Magik User Interface (installed in an appropriate application image)
- FME Workspace customization
- possible GE Smallworld Magik customization

The GE Smallworld-FME Translator documentation is available on our FTP site:

- [ftp://ftp.safe.com/fme/smallworld/fme\\_magik\\_33/fme\\_ge\\_smallworld33\\_user\\_docs.zip](ftp://ftp.safe.com/fme/smallworld/fme_magik_33/fme_ge_smallworld33_user_docs.zip)

This interface is loaded into a GE Smallworld image and is used to initiate all GE Smallworld data import and export.

Magik code for older versions of Smallworld is also available on the FTP site. Although FME Workspaces can be used to run translations, FME Workbench and FME Universal Viewer cannot be used directly with the Smallworld datastore. Translations are initiated from within the Smallworld GIS environment through the GE Smallworld-FME Magik User Interface.

### Smallworld 4 SWAF FME Translator

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This configuration works with Smallworld 4 SWAF. The installation requires:

- FME Smallworld Edition, Version 2004-ICE^3 or newer
- GE Smallworld Magik install (installed in an appropriate application image)
- FME Workspace customization
- optional GE Smallworld Magik customization

The GE Smallworld-FME Translator documentation is available on our FTP site:

- [ftp://ftp.safe.com/fme/smallworld/fme\\_ge\\_smallworld4\\_user\\_docs.zip](ftp://ftp.safe.com/fme/smallworld/fme_ge_smallworld4_user_docs.zip)

The Smallworld SWAF 4 FME Translator shows significant performance improvements over the Smallworld 3 translator. In addition, FME Workbench and FME Universal viewer can be used to translate or view the Smallworld data. However, the Smallworld SWAF GIS must be open before FME can access the Smallworld data.



## SpatialBiz FME Translator

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The SpatialBiz FME Translator has been developed by Spatial Business Systems Inc. (<http://www.spatialbiz.com/>) and is available for both Smallworld 3 and Smallworld 4.

The SpatialBiz FME plug-in installation requires:

- FME Oracle Edition
- SpatialBiz FME plug-in (obtained from Spatial Business Systems Inc.)
- SpatialBiz Magik install and configuration (installed in an appropriate application image)
- FME Workspace customization
- Optional Magik customization

The SpatialBiz FME plug-in does not require the Smallworld GIS to be open to access the Smallworld datastore. This not only lets FME Workbench and FME Universal Viewer access the Smallworld datastore directly, but also enables other Safe Software applications to operate with Smallworld data. The FME ArcGIS extender can be enabled to view Smallworld data in ArcGIS. Safe Software's FME Server (SpatialDirect) and MapGuide extender can also be configured to access Smallworld data through the SpatialBiz FME plug-in.

## FME Smallworld 4 SOM

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The Smallworld Spatial Object Manager provides access to data in a variety of vector formats including DXF, DGN, DWG SHAPE and MrSID. The FME Smallworld 4 SOM extends the core SOM and adds support for additional formats supported by FME, including ArcSDE, Geodatabase, VPF, MapInfo, OS MasterMap and TIGER. The installation requires:

- FME (Required formats will determine the FME edition licensed)
- Smallworld 4 SOM
- Magik install (Installed in an appropriate application image)

The Magik code is available from Smallworld.

Watch a movie provided by Alfred Sawatzky of Red Planet Consulting demonstrating the FME Smallworld Spatial Object Manager. (Movie located on external site )



## FME Smallworld

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When you undertake a data translation using FME, FME builds an FME Workspace which controls the mapping of the source to destination format schemas. For the vast majority of formats that FME supports, FME can automatically generate the FME workspace with little or no intervention from the user. FME can extract all the geometry and attribute information for each table or feature type in the source dataset, and make a reasonable guess at how this data should be represented in the destination dataset. The workspace can then be fine tuned, either in the FME Workbench to get exactly the desired results - for example, changing attribute or table names, adding coordinate transformations, etc.

In the case of Smallworld, FME extracts the GE Smallworld table schema and maps this to the destination format, or vice versa. However, the automatically generated workspaces generally require configuration to get the best out of your data. The amount of configuration will depend on the destination (or source) data format, the number of tables (objects) & and the number & type of attributes. This is not difficult to do, but does require knowledge of FME.

An example might be text attribution: For most formats FME extracts format attributes, such as text justification, text rotation, text height, etc. However, there is then a question of what to do with them? Text justification, for example, is represented differently in different formats; possibly not represented at all, using a 3x3 grid, or in the case of GE Smallworld, a 5x5 grid. Since there is no direct correspondence between the text justification values in one format with those in another, some form of a look-up table may be needed to be constructed in the FME Workspace to convert from one justification to another. This look-up would have to be added to the FME Workspace to suit the specific requirements of the translation and the formats involved.

In summary FME automatically generates the FME Workspaces, and these are then used as a template and modified to suit your needs. The amount of configuration depends on what data requires translation. Typically, importing into GE Smallworld is more complex than exporting. This is because GE Smallworld supports more complex geometry & attribute structures than most other GIS systems (i.e. multiple geometries on an object). These structures can be built in the FME Workspace, but this requires FME Workspace configuration.

Please contact us to find out how Safe Software can help customize a solution to meet your needs.

