

# FIRST IMPRESSIONS



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## SMMS 3.0 Software

# Manage Your Metadata

*SMMS 3.0 from RTSe (USA), Inc., (formerly RTS Networks, [www.rtseusa.com](http://www.rtseusa.com)) is a management system for creating, managing, and publishing geospatial metadata. SMMS can import and export metadata in an SMMS exchange format, or in Federal Geographic Data Committee ASCII or SGML formats. It requires Windows 95, 98, or NT 4.0; 32-MB RAM; an 800 × 600 display; and 25-MB total disk space. Server functions require an additional 10-MB disk space. A CD drive is needed for installation. The package includes utilities for upgrading data and software from previous versions of SMMS. Single-copy price is \$650.*

**W**hen the Federal Geographic Data Committee (FGDC) developed its Content Standards for Digital Geospatial Metadata it solved a pressing problem — how to promote the sharing of geospatial data through standardized ways of describing data set contents. At the same time, though, it created a major headache. How could users manage the large amount of information required to adequately describe data and how could the task of creating metadata be made sufficiently straightforward and attractive to custodians of geospatial data?

Metadata forms are long and complex, and the volume of metadata created by a high-quality description sometimes exceeds the volume of the data set being described. What's more, it is often difficult for an agency to justify the high costs of metadata creation, which involve use of highly paid professionals, when the benefits to the agency are not clear. Most of the benefits of metadata creation, after all, accrue to the consumer, not the producer of metadata. (For further discussion of the issues surrounding metadata, see Perspective in this issue.)

Designed to help users in creating, managing, and publishing metadata, SMMS software follows the FGDC standard faithfully, using the same fields and providing access to the FGDC's detailed descriptions (the just released SMMS 3.1 allows for optional user-defined fields and also fully supports the Biological Profile

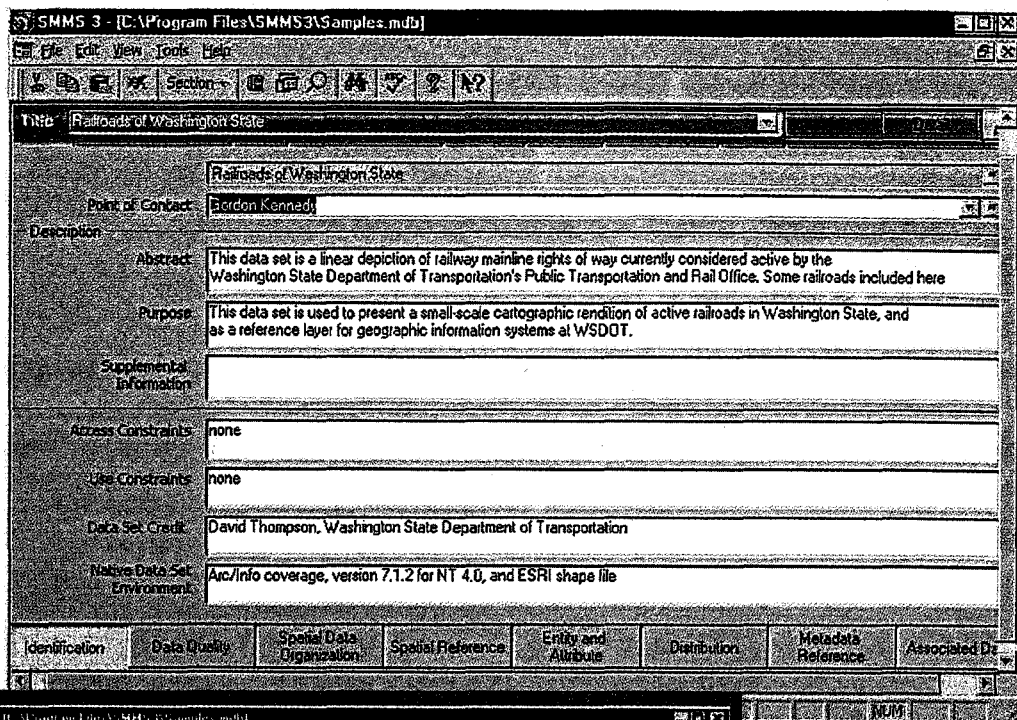
of the FGDC's Biological Working Group). It builds metadata as relational tables, using Microsoft Access (a run-time version is automatically installed if your system does not already have the program). Anyone familiar with the FGDC standard will be immediately at home, and users unfamiliar with the standard will find plenty of tools and intuitive interface designs to make the job as easy as possible.

The producers of SMMS believe they have the premier product for creating and editing metadata. It is certainly the best this reviewer has seen. The package includes sample data and a tutorial that takes users through the functions gently and helpfully.

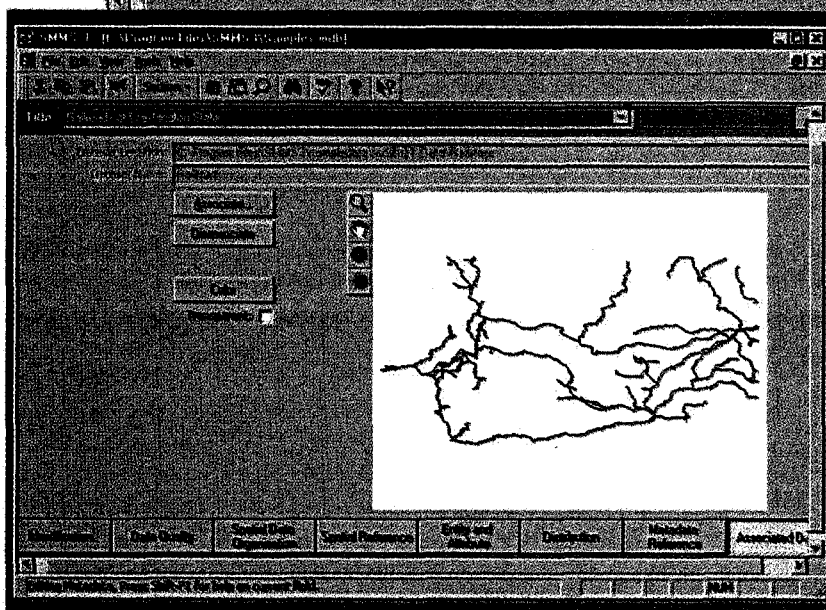
The basic functions of SMMS support the creation of metadata records using standard forms interfaces and features that will be familiar and intuitive to Windows users. Figure 1 shows a typical screen — the identification information for one of the sample data sets distributed with the software.

The software allows a metadata record to be linked to the data set it describes as long as the data set follows a standard format that includes ESRI shapefiles and coverages (though not yet the ArcInfo 8.0 geodatabase) and Intergraph's GeoMedia and provided it is accessible through the file system. This function offers several important advantages. It enables users to display the data to help in metadata

**FIGURE 1** This typical SMMS screen shows part of the identification metadata for one of the sample data sets distributed with the package.



**FIGURE 2** SMMS allows data sets to be associated with metadata records, which can be helpful during metadata creation and editing.



major benefit of MetaGate lies in its search capabilities. Metadata can be searched by looking for key words in the identification sections of records, by searching for specific attributes, by searching for data related to specific time periods, or by searching for data geographically by interacting with a simple world map. MetaGate provides the basic functions of a local geolibrary and will be very useful to an agency that finds

creation, to automatically generate a simple generalized browse graphic of the data set contents, and to automate the capture of the data set's bounding coordinates and attributes. Figure 2 shows the data set associated with the metadata in Figure 1.

The publication feature of SMMS allows a completed record to be converted into an attractively formatted HTML page. RTSe (USA) is committed in the long term to developing solutions for metadata management problems that scale all the way from the current desktop product to software for server-side functions, including clearinghouse management.

## Data catalogs

A click on a prominent icon in SMMS launches MetaGate, a tool for managing large amounts of metadata. This feature is valuable to any GIS project with a data management problem.

The titles of data sets in a metadata database are displayed in a simple tree view that will be familiar to users of Microsoft products. Detailed metadata become visible once a title is selected. If a metadata record is linked to its data set, then a simple map view can also be displayed.

Besides providing a summary of metadata that is easy-to-comprehend, the

itself overwhelmed by hundreds of geospatial data sets in a single local file system. SMMS supports multiuser access that will be needed in large organizations.

## Data management and use

Metadata standards are most often promoted as facilitators of improved data sharing, and the FGDC program "Don't Duck Metadata," which provided funding to stimulate greater data documentation, was aimed squarely at this objective. These standards are the means by which a data custodian publishes information to potential users. They also help a data consumer determine what data exist and

whether they are fit for the consumer's need. Metadata are the *lingua franca* of the spatial data infrastructure.

But metadata also have valuable functions during data use. New data sets created by GIS operations need metadata. For example, when a new data set is created by buffering objects in an existing data set, it is good management to incorporate appropriate descriptive information. Much of this can be obtained automatically from metadata associated with the input data set because properties such as scale will be the same. Other metadata elements can be generated automatically by the system. For instance, the title of the data set created by buffering X might be assigned the title "Result of Buffering X with a Buffer Width of Y."

Information about quality can be propagated from inputs to outputs. Extensive research has been done on the best ways to determine output data quality parameters given the nature of the operation. In addition, metadata can inform users when a GIS operation makes no logical sense (when an operation attempts to combine apples and oranges by trying to average attributes with different units of measurement, for example).

Metadata can also provide users with access to extensive documentation during interactive analysis, by providing more extensive information about attributes than is normally available in cryptic variable names. It is in this area that SMMS differs sharply from the metadata tools available in such GIS products as Idrisi or in the ArcCatalog of ArcInfo 8.0. By building metadata tools directly into a GIS, the designer is able to access metadata during GIS processing to support many of the functions just outlined. But that is clearly not possible when metadata are managed through a separate and independent product, unless GIS designers can be persuaded to support that product's specific formats.

**Is SMMS for you?**

SMMS is an ideal product for creating, managing, and publishing metadata to improve overall management of large data archives as well as to make data sharing efforts more successful. In other words, SMMS can help users to meet the objectives of the FGDC and the National

[www.geoinfosystems.com](http://www.geoinfosystems.com)

Spatial Data Infrastructure.

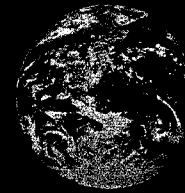
If, on the other hand, your metadata needs involve facilitating GIS processing, it would be better to make use of the increasingly sophisticated metadata features of the major GIS products. If you want to meet both objectives, you should explore whether SMMS's metadata import and export functions are compatible with those of your existing GIS. ♦



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On Your Desktop,**



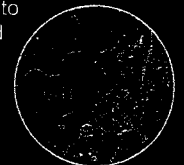
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