

Planning Your Geodatabase for Cartography with ArcGIS 9.2

Transcript

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Hello, and welcome to our ESRI Instructional Series podcast, this one titled: *Planning Your Geodatabase for Cartography with ArcGIS 9.2*. My name is Peter Kasianchuk. I'm an instructor and course author with ESRI Educational Services in Redlands, California. Today I will be discussing geodatabases and feature class design considerations, which support the new cartographic representation functionality available with ArcGIS 9.2. This podcast is intended for cartographic and map production specialists, and geodatabase administrators, or anyone else who needs to manage large spatial data holdings in support of high-quality, high-volume map production.

In this podcast, I'm going to briefly introduce the new cartographic functionality, which will be available with ArcGIS 9.2. Now in order to take full advantage of this new functionality, those of you responsible for maintaining your cartographic data, need to start rethinking how you store that data, and what implications this has on your current geodatabase design, feature symbol definition, and feature class attribute table structure.

Now, you may have heard of cartographic representations. What are they? Well, simply put, cartographic representations allow you to store feature symbol definitions within a feature class. How is this accomplished? When you create a feature class representation, ArcGIS appends two fields to the feature class attribute table. One field stores an integer value, which corresponds to a user-defined symbol category, called a *representation rule*. You might think of this as something a little bit like a subtype, or feature symbol classification rolled into one, but keep in mind that it permanently attaches a specific symbol type for each feature at the feature class level.

The other field stores *blob* information, and it is meant for any exceptions or changes to those representation rules that you might need to make to a specific feature. So, the geodatabase schema changes to a feature class where the representations added are really very simple. However, what you do with them, or, that is to say, what is the nature of your feature symbology, can be quite complex, and will certainly require planning.

So, planning for the implementation of cartographic representations can be divided into two main areas: geodatabase schema design, and feature symbol design. This podcast is focusing on that first topic. A future podcast will discuss the topic of feature symbol design, and this will most likely be after the release of ArcGIS 9.2.

The reason that we are offering this podcast in advance of the release of ArcGIS 9.2, is that it is not too early for you to begin making changes to your current data holdings in order to take advantage of the new functionality.

Now, this planning will require that you evaluate your current cartographic data holdings to determine which feature classes can benefit most from converting their existing symbology into cartographic representations. Now, I should make it very clear that cartographic representations do not make layer files, map documents, or custom styles obsolete. In fact, cartographic representations work seamlessly with all of those existing file-based objects.

In addition, not all of your cartographic feature classes will require symbol conversion to representations. Cartographic representations are intended for use with feature classes that contain multiple feature symbol types, each of which has a complex symbol definition. Contour lines, for example, are probably not a good candidate for cartographic representations, as they are typically limited to a simple line feature, and one, or two, perhaps three, different symbol types per map.

Marker symbols for oil and gas utility maps, on the other hand, may include dozens of different unique and complex symbols per feature class. So, this might be a good candidate feature class for conversion to cartographic representations.

Now, in addition to storing symbol definitions within the geodatabase, cartographic representations can be used with a new group of geoprocessing tools, which will support the automation of some map production tasks. This will also be the subject of an upcoming podcast.

Now that you have the basic idea of how cartographic representations are structured, you really need to think about how your current feature classes, and their cartographic attributes may be stored. For example, do you currently store feature attributes that help ArcMap define how to draw a specific symbol? Do your line feature classes have a field that stores the line width in which each feature should be drawn on a map? Or, do you have point feature classes that contain an attribute field that stores an angle of rotation, at which that point symbol is drawn on a map, perhaps showing wind direction?

These are the types of attributes that I have in mind when I discuss cartographic attributes. For those of you familiar with CAD data, think about the attributes associated with a typical DWG

file. It contains fields, such as thickness, color, line type, or line width, and these are stored at each symbol and each feature. This is the kind of information that cartographic representations are able to take advantage of.

So, do you currently store this kind of information with your feature classes? Are these attributes even available? If not, how might you create them or collect them? Is it possible for you to update your data collection methodologies to start capturing these kinds of attributes?

The purpose of storing this information as feature-specific attributes is that you will be able to define cartographic representation rules to dynamically read the attribute values, and then automatically draw the feature symbol appropriately. That means that attribute values may change, or hold different values for different features, and the map will always be up-to-date at the geodatabase level.

The main point to take away from this podcast is that cartographic representations will allow you to store feature symbol definition parameters as attribute values within a geodatabase feature class. You can start to plan for that now.

In planning your geodatabase to store cartographic representations, you need to consider three main aspects:

- First, identify the feature classes that have the most complex symbology that you will want to convert to cartographic representations.
- Second, define in detail how you define those symbols. You may already have this information stored within a custom style file, and you can easily convert this information into a cartographic representation.
- Third, define which feature attributes you may have, or need to capture to define symbol rendering rules automatically.

Planning and implementation of cartographic representations will require that cartographic experts and database administrators work together, to either modify existing cartographic geodatabases, or create new ones specifically modeled to support cartographic representations in automated map production.

For additional information, look for a series of upcoming live training seminars beginning in late August 2006, which will discuss what's new with ArcGIS 9.2, and there will be a brief discussion on cartographic representations. ESRI Educational Services is currently developing a new virtual classroom course, which will cover this topic in much greater detail, and this is scheduled to be available in mid-November 2006.

Lastly, once ArcGIS 9.2 is released, you will notice a significant revision in the Desktop Help documentation; and this includes a lot of information on cartographic representations, and how to use them appropriately.

I'd like to thank you for tuning in to this session of the ESRI Instructional Series podcast. Please stay tuned for future broadcasts.