MetaSolv Solution™ M/5

Structured Formats

Best Practices Guide

M ETA S OLV ®
S O F T W A R E

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Purpose and scope

This guide is written primarily for those individuals responsible for implementing the MetaSolv Solution™ (formerly Telecom Business Solution™). The guide explains how, when, and why you modify, create, and use structured formats. This guide also makes recommendations for working with structured formats by following specific sequences and adhering to established guidelines. These recommendations constitute "best practices." While it is always considered best practice to refer to the online Help for field definitions, this guide also includes detailed, step-by-step instructions for certain tasks to clarify the sequence and values involved.

Using the MetaSolv Solution online Help

MetaSolv Solution includes comprehensive online Help. You access Help from the Start menu (where you installed the software) or from within the software by clicking the Help menu.

MetaSolv Solution online Help contains a main table of contents, a traditional book-like index, and a full-text search index. To access any of these, launch the Help as described above, then click the **Help Topics** button. The Help's contents are on the Contents tab, the index is on the Index tab, and the full-text search index is on the Find tab.

> **Note:** The first time you launch online Help, a message appears while the Help is prepared. The first time you launch a full-text search index, a wizard deploys to prepare the full-text index.

Document conventions

The following conventions are used throughout this document to help you better identify important items:

Convention	Description	Example
Bold text	Items you can click in the software, such as buttons, menu items, and fields	Click the **New** button. Press **F1** to access Help. Select **List>Location** from the main menu.
Italics	Places where you input information or select an item from a drop-down	Enter *your name* in the **Name** field. Select *TX* from the **State** drop-down.
Quotes	Status	The circuit is in "In Progress" status.
Step head	Procedural steps follow this heading	N/A
	Note	N/A
	Warning	N/A
	Cross-reference to a topic in the online Help	N/A

Table 1: Document Conventions

Document Organization

If you want to...	See...
Understand why structured formats are used and how they are constructed	Chapter 2
Modify and create structured formats for address, switch prefix, and telephone number.	Chapter 3
Use structured formats	Chapter 4
Learn how to contact Customer Support for assistance	Appendix A

Table 2: Document Organization

Introducing Structured Formats

This chapter is primarily intended for implementers rather than users. References throughout this document to "you" are addressed to the individuals responsible for implementing the MetaSolv Solution: MetaSolv consultants, MetaSolv partners, and employees of the client who are members of the implementation team. This chapter is secondarily addressed to users (who are referred to as such, rather than as "you") who might also benefit from understanding the implementation issues regarding structured formats. This chapter explains the concepts underlying structured formats, and why best practices should be established and followed during implementation and throughout the ongoing use and maintenance of the software.

This chapter includes the following sections:

- What structured formats are
- When and how structured formats are employed
- The role of geographic areas and MetaSolv software processes
- The base data loaded for structured formats
- The role of components
- Structured format implementation checklist
- Primary list of best practices for structured formats

What structured formats are

Structured formats provide a way to enter, define and store structure and formatting information for addresses, telephone numbers, and switch prefixes. Since these information structures can vary from country to country, structured formats use geographic areas, MetaSolv Software processes, and industry version to provide the flexibility needed for setting up the appropriate structures.

There are currently three types of structured formats loaded during installation of the software: address, telephone number, and switch prefix. For these three types of structured formats, there are several system-defined structured formats loaded as base data at installation. They are customized for different countries and specific standards, such as the National Emergency Number Association (NENA).

It is from these system-defined structured formats that you choose the formats appropriate for a given client's telephone numbers, switch prefixes, and addresses. It is also from these system-defined structured formats that you can create other structured formats for countries and client's whose requirements are new and unique.

Structured formats control how the fields, or components, of an address, telephone number, and switch prefix appear in the windows of the software. For example, the

components of a United States address are items such as street number, street name, state, and ZIP code. When a user enters an address into any area of the software that employs structured formats, the fields the user sees—how they are labeled, the order and position in which they appear on the window—is dictated by the structured format. It is incumbent upon you to implement structured formats appropriately so that users see what the client wants them to see.

For example, in the following figure you see the window in which a network location address is entered. All the field names on that window, the field types (drop-down, editable), and the sequence in which they appear are controlled by the structured format. In this particular window, you can also see which structured format is controlling it: *North American Master Street Address Guide* (MSAG). You also see the country that is associated with the structured format: *United States.*

Note that the structured format's name is MSAG*, but its description is* North American Street Address Guide*. It is the structured format's description that appears in drop-downs.*
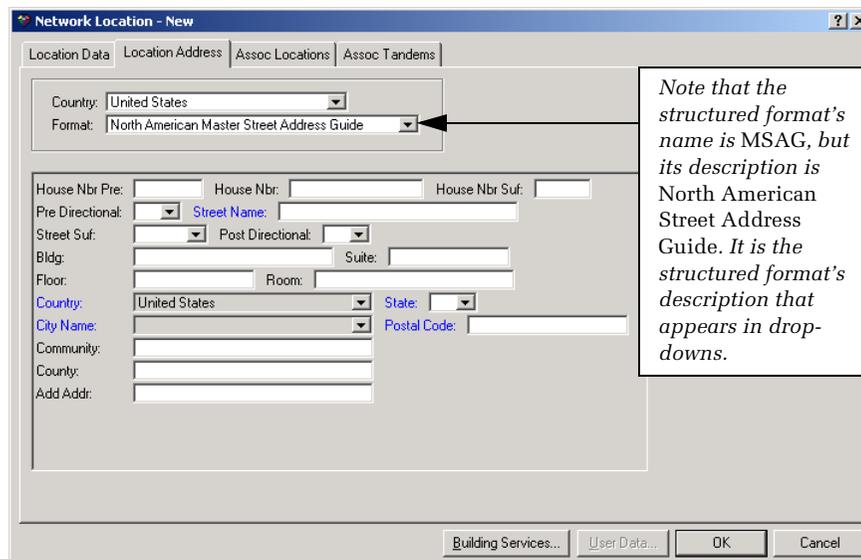
Figure 1: Example of MSAG Structured Format Controlling Address Fields

Prior to the deployment of structured formats, the appearance and content of an address, telephone number or switch prefix was system-defined and could not be customized. If a user needed to add a fourth line of address information, or two more digits to a phone number, it was done through some other means, such as Notes or Remarks. Now that MetaSolv serves a global community, the software accommodates the differing address, telephone number and switch prefix formats employed globally. Our clients can now determine exactly how the software prompts for and displays those values.

When and how the MetaSolv Software employs structured formats

Structured formats govern the appearance (windows) and content (components) of addresses, telephone numbers, and switch prefixes. Understanding when they are used, and how they are used is key to implementing them properly.

Note: Clients who do not inventory telephone numbers do not need to define switch prefix or telephone number structured formats.

When structured formats are employed

Most of the areas that require an address, telephone number or switch prefix employ a structured format to both present and store the values entered by users through data entry windows. (The only addresses and telephone numbers that do not employ structured formats are those used for contacts, and those used in the Trouble Management and LSR modules.)

For example, when a user enters an address into a window, the fields on the window are dictated by the address structured format in use. If you look at Figure 1 on page 6, the fields on that window are being dictated by the structured **Format** *North American Master Street Address Guide*, and the **Country** *United States*. If you look at Figure 2 below, the fields on that window are dictated by the structured **Format** *Address Format for Brazil* and the **Country** *Brazil*.
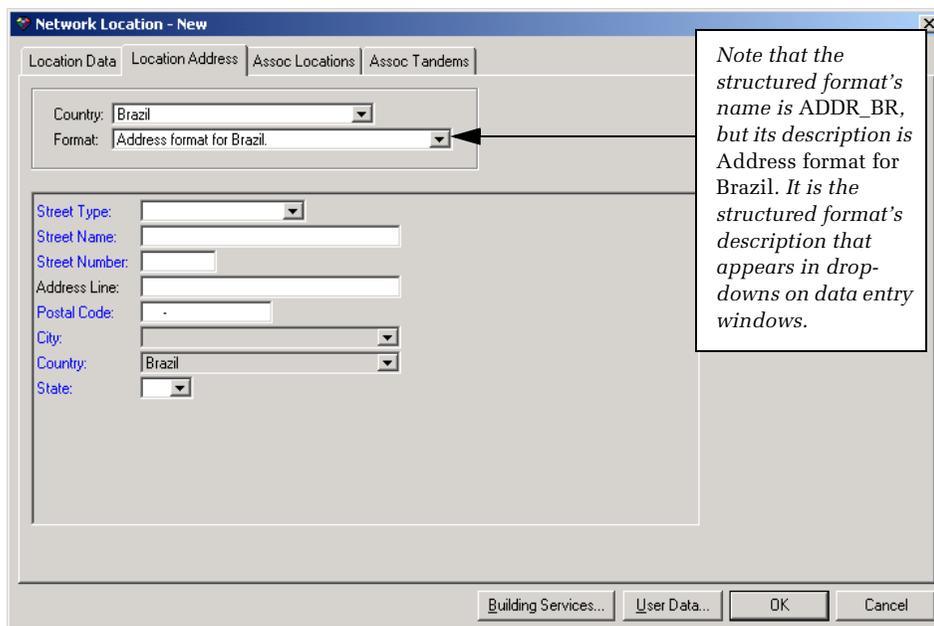
Figure 2: Example of a ADDR_BR Structured Format Controlling Address Fields

Notice that the selection of *Address Format for Brazil* dictates different fields from those dictated by the *North American Master Street Address Guide* format shown in Figure 1.

Some of the field names, and the sequence and layout in which they are presented, are different.

In the two preceding examples, the structured formats were system-defined, including their association with **Country**. When the user of a Brazil or United States implementation opens a window that requires a structured format, one is available by default; the implementation team does not have to set up those structured formats or the relationships between geographic area types for those countries. However, if the implementation is in Canada, or England, or France, or any country other than the United States or Brazil, the user would receive an error message. There are several countries with system-defined structured formats, but only Brazil and the United States have system-defined relationships for their geographic area types. (Geographic area types and their role in structured formats are explained on page 17.)

Some countries have system-defined default structured formats established, some do not. Countries without defaults require careful planning, definition, construction, and refinement during implementation. It is important to understand which countries have defaults, and how structured formats are employed by the software before you begin the process of determining whether the client needs any modifications or additions to the default structured formats.

How structured formats are employed

Default structured formats are provided for the following countries when you install the software:

- Belgium
- Brazil
- Canada (with English and French address formats)
- France
- Germany
- Mexico
- Portugal
- United States

While you can modify the structured formats when a client's business practices indicate that you should, you do not need to modify or add anything associated with structured formats in order to use them in the countries listed above. Likewise, you do not need to add or modify anything regarding geographic area types for these countries, though you will need to create geographic hierarchies for all countries except the United States and Brazil. (Geographic area types and geographic hierarchies are explained in the section titled, "Role of geographic area types" on page 17.)

It is also important—critical—to understand that when you must add structured formats and geographic area types for a client, you should do so with thorough planning during implementation, and thorough testing prior to going live.

⚡ **Warning:** You cannot make changes to a geographic area type, geographic area hierarchy, or a structured format after data is entered into the database. There is no automated means of migrating previously entered data to a new structured format, geographic area type, or geographic area hierarchy. A custom conversion would be required to migrate the old data to the new format.

To understand how structured formats are employed, you need to know the hierarchical process the software goes through to determine what structured format to use when a user enters an address, telephone number, or switch prefix. This hierarchical process is:

1. Industry version (relevant only to countries using North American Functionality)

2. Process

3. Preferences

4. Country

The way the software determines what level in the hierarchy to use based on the following four checks:

1. Checks for industry version.

If the call for a structured format comes from the regulated ordering module (ASR or LSR), then the software checks what type of structured format is being called for, and the industry version on the ordering guideline in effect. It then uses the structured format that has relationships to both the regulated ordering process (the ASR process or the LSR process) and the industry version. (ASOG 22 is the only industry version currently supported by structured formats.)

For example, if the user is entering an ASR that requires the Service Address Location Information (SALI) form, the software checks the list of available structured formats for one associated with the ASR process and the industry version of the ASR being entered. Currently, there is one structured format associated with both ASR and industry version: OBF_SRVC_ADDR, described as *OBF Service Address Location Information*. The

following illustration (Figure 3) is of the structured formats window in the MetaSolv
Solutions Utility Application. It shows a partial list of structured formats.
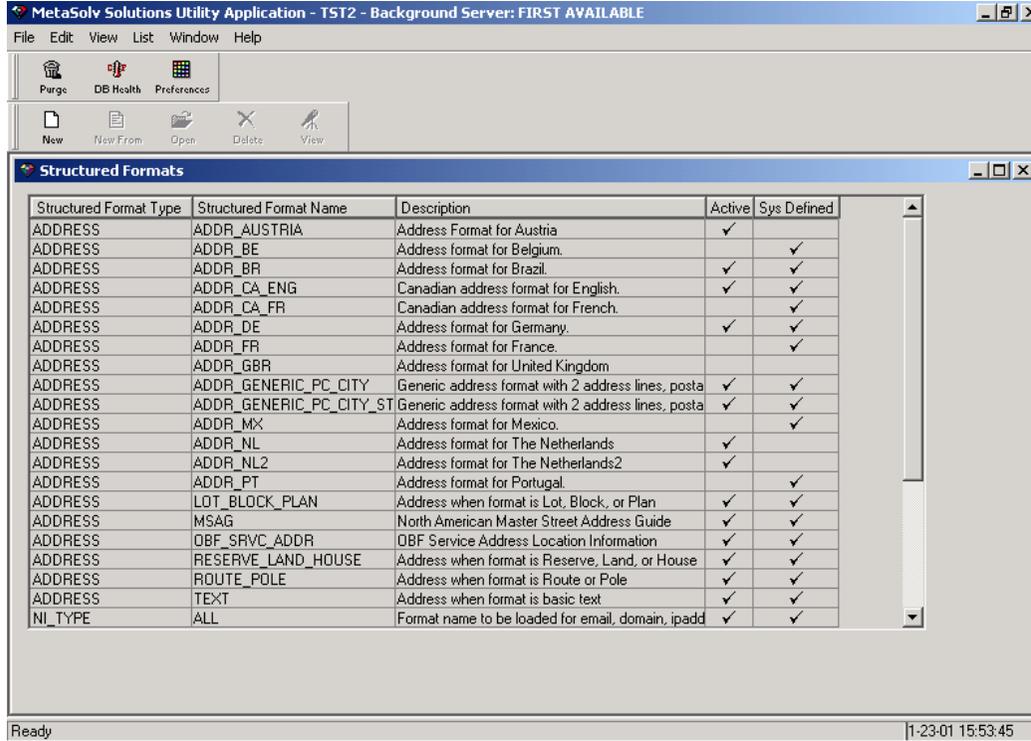
Figure 3: Structured Formats Window in MetaSolv Solution Utility Application

When you open a structured format, you see five tabs. On the MetaSolv Solution Processes
tab, you see the software processes associated with the structured format. On the Industry
Version tab, you see the industry versions associated with the structured format. The

MetaSolv Solution Processes tab and the Industry Versions tab for the OBF_SRVC_ADDR structured format are shown in Figures 4 and 5.
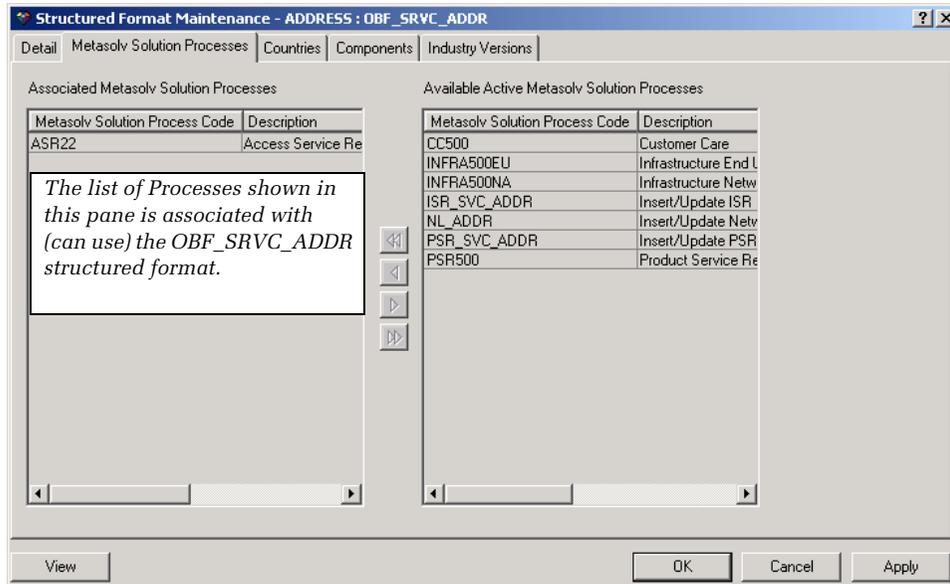
Figure 4: Processes Tab of OBF_SRVC_ADDR Structured Format
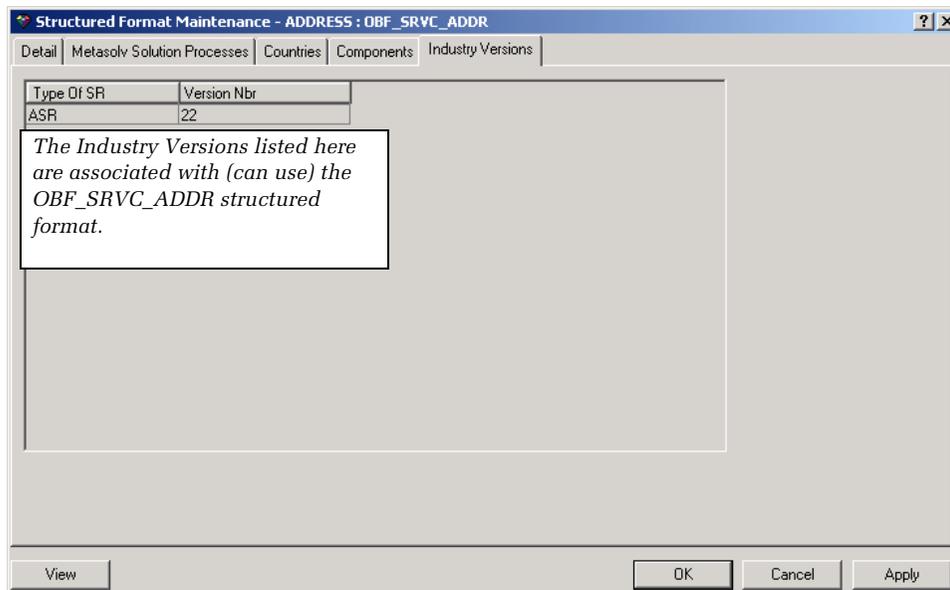
Figure 5: Industry Versions Tab of OBF_SRVC_ADDR Structured Format

2.   Checks the process.

If no industry version is present in the active process, then the software uses the structured format associated with the active process. If there are multiple structured formats

associated with that process (see Table 5 on page 20 for a list of processes), then the software finds the structured format associated with both the process and the user's country. The software always knows the user's country—either from the user selecting country on the data entry window, or from the user's preferences, or from the operating system's country code. If there are multiple structured formats to choose from for that country, then the software looks for the user's preferences. If the relevant preferences are not set, the software uses the structured format with its **Primary Indicator** enabled.

For example, if the user is entering a network location, the software finds all the address structured formats associated with the network location process (all the address structured formats that have NL_ADDR listed on their Processes tab). Because several address structured formats are associated with NL_ADDR, the software must find the structured format that is associated with both NL_ADDR and the user's country. In the case of the network location being entered in the window shown earlier in Figure 2, the address structured format with relationships to both NL_ADDR and Brazil is ADDR_BR. The following illustration (Figure 6) shows the Countries tab of the ADDR_BR structured format, with Brazil as the only related country.
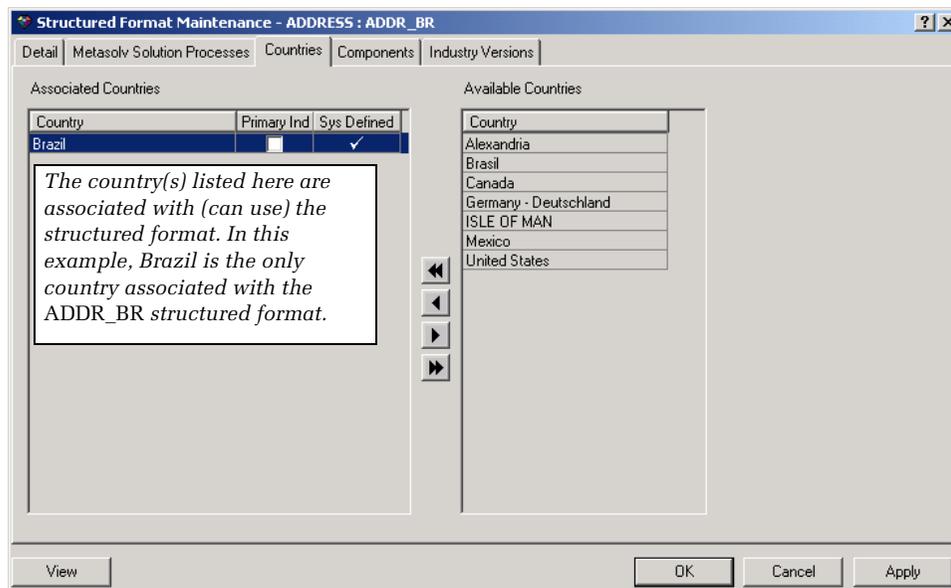
Figure 6: Countries Tab of ADDR_MX Structured Format

3. Checks preferences.

If the software is unable to determine the correct structured format after checking industry version and process, then it checks the structured formats specified in preferences. (Note that when specifying preferences, you must specify the Country preference before the structured format preferences.) If the structured format preferences are specified, then the software uses those structured formats for the activity requesting them.

For example, in the following illustration (Figure 7) you see the preferences for **Address**, **Switch Prefixes** and **Telephone Numbers** set to *Mexico.*
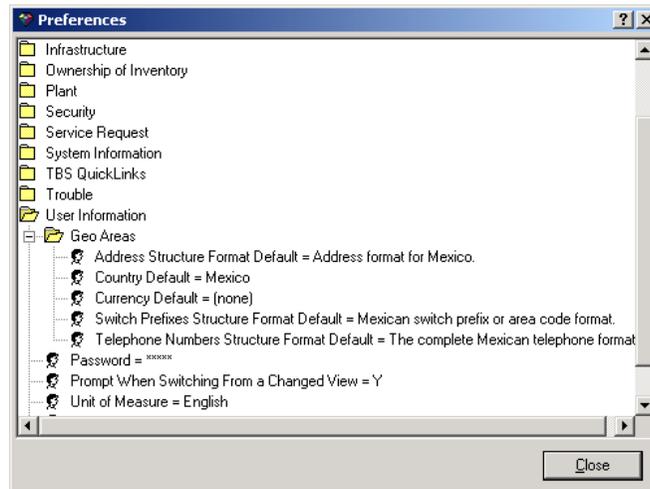
Figure 7: Structured Format Defaults in Preferences

4. Checks the default structured format for the country.

If the industry version, process, and preferences have failed to produce a structured format for the given situation, then the software uses the default structured formats for the user's country. This is determined by finding the structured format associated with the user's country, where the structured format is checkmarked as **Primary** for that country. The user's country can always be ascertained, even if the preference for Country is not set because the software can get the country code from the operating system of the user's machine.

For example, in Figure 8 on page 14, you see that the MSAG structured format is the default address structured format for the United States and Brazil because the **Primary Indicator** checkbox is checked for both countries on that structured format's Countries tab. Note that for a given country, only one address structured format can be primary. For a given country, there can be only one telephone number and one switch prefix structured format, and that one is, by default, primary.

For example, the United States can be associated with the MSAG, OBF_SRVC_ADDR, and TEXT address structured formats, but the **Primary Indicator** checkbox for the United States can be checkmarked on only one of those address structured formats.
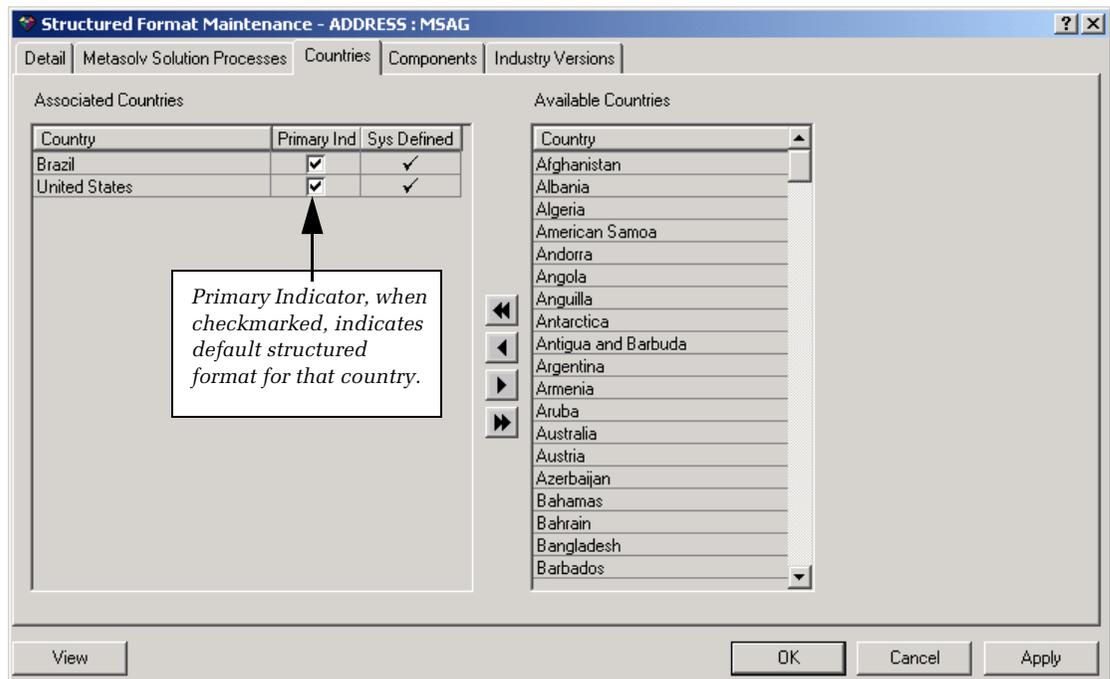
Figure 8: Default Address Structured Format Determined by Primary Indicator for Country

The countries with system-defined structured formats are listed below in Table 3. An asterisk (*) denotes whether the structured format is primary for that country.

It is important to note that the primary address structured format is the default, but it is not the only structured format users can select from if there are multiple address formats for the country. Users can still select from all of the structured formats associated with the country, but the default (or their preference) is what appears in data entry window drop-downs.

It is also important to note that if the system-defined default is not what the client wants, the default can be changed. The process for changing it is explained in the next chapter.

Country	Address structured format	Telephone Number structured format	Switch Prefix structured format
Belgium	ADDR_BE	TN-BE*	SWITCH-BE*
Brazil	ADDR_BR	TN-BR*	SWITCH-BR*
Canada	ADDR_CA_ENG ADDR_CA_FR	TN-US*	SWITCH-US*
France	ADDR_FR	not defined	not defined
Germany	ADDR_DE*	TN-DE*	SWITCH-DE*
Mexico	ADDR_MX*	TN-MX*	SWITCH-MX*
Portugal	ADDR_PT	not defined	not defined
United States	MSAG*	TN-US*	SWITCH-US*

Table 3: Default Structured Formats by Country

If you are implementing the MetaSolv Solution in a country other than those listed above, you and the client must determine which structured format to use for address, telephone number, and switch prefix. If the system-defined structured formats do not suit the client's needs, you must either modify the existing structured formats, or create new ones. The system-defined structured formats are designed to accommodate the address, telephone number, and switch prefix formats of the above-listed countries in a generic way; for clients who do not fit the generic model (such as Canadian clients who want to use MSAG, or United States clients who do not) you must carefully analyze and define appropriate structured formats.

Note: Clients that do not use the telephone number inventory do not need to define switch prefix or telephone number structured formats.

If your analysis of the client's requirements indicates a need to create new structured formats, it is recommended that you use New-From functionality to create them. Creating a new structured format from an existing one preserves the relationship of processes to the structured format, the table and column assignments for the database, and the relationships between components. Once you create the new structured format using New-From, you can add and delete components, and change the names and sequence of fields on the inherited components fairly easily. However, if you create a completely original structured format using New instead of New-From, accurately building the relationships and database assignments can be challenging. Furthermore, if the relationships and database assignments are done incorrectly, the corrective action could be costly.

It is also recommended that you use only one address structured format per country. The software prevents you from using more than one switch prefix and one telephone number

structured format per country, but you can have multiple address structured formats per country. There are clients who will want to use more than one address structured format, and their reasons for doing so should be analyzed carefully. It is possible to do so, and it is warranted for some business processes, but it should not be done unless the business reasons are well thought out, and both the benefits and consequences are fully understood.

For example, there could be a client in Canada who has 28 PSR order entry people in Montreal, and 36 PSR order people in Vancouver. The client wants the western addresses to be in the Canadian-English format (ADDR_CA_ENG), and the Eastern addresses to be in the Canadian-French (ADDR_CA_FR) format. This requires you to relate the PSR processes and the country Canada to both the ADDR_CA_FR and ADDR_CA_ENG address structured formats. It also requires you to set the users' address structured format preference appropriately. For the 36 Vancouver users, you would click **Preferences>User Preferences>Geo Areas>Address Structured Format**=ADDR_CA_ENG, and for the 28 users in Montreal you would set it to ADDR_CA_FR.

If you do not set these users' preferences, they can still select the appropriate address structured format from the address drop-down on the relevant window; however, the address format that appears by default might not be the correct one for them. Remember that only one address structured format can have the **Primary Indicator** enabled for a given country.

In the Canadian example, if the users' preferences are left unspecified (**Address Structured Format**=none), the software defaults to the structured format where the **Primary Indicator** for Canada is checkmarked, which might not be the right address format for the given user. If ADDR_CA_ENG is the address format with the **Primary Indicator** enabled for Canada, then that is the format that appears by default in all users' windows in the absence of individual user preferences settings for address structured format. (Remember the hierarchy the software goes through to determine which structured format to employ: 1. Industry Version, 2. Process, 3. Preferences, 4. Country.)

Thus, in implementations using multiple address structured formats per country, when preferences are not set, the users must be diligent in checking that the correct address format is in use for the data they are entering. In the Canadian example, unless they set their individual user preferences for address structured formats, the Montreal users would not be seeing the right format by default. They would have to select the ADDR_CA_FR format from the drop-down because the default would be ADDR_CA_ENG. For this reason, it is strongly recommended that you set the user preferences appropriately for all users during implementation. Leaving this activity to the users' responsibility post-implementation is not recommended.

While this example presents a legitimate use of two address formats for one country, it presents the possibility of a potentially serious performance impact when querying for an address. A query will be slower when multiple formats are involved. The possibility of failing to specify the query correctly is also much greater when multiple structured formats are involved because the user must know which structured format applies to the data they are querying, and they must know the components of each structured format.

In situations where a client believes they require multiple address formats, it might be better to define a structured format that is less granular in its component definitions so

that one structured format can accommodate all the different types of addresses the client needs.

There are two very generic system-defined address structured formats that are designed specifically to fill this need. They are named ADDR_GENERIC_PC_CITY_ST, and ADDR_GENERIC_PC_CITY. ADDR_GENERIC_PC_CITY_ST includes three address lines, city, state, postal code and country. ADDR_GENERIC_PC_CITY includes three address lines, city, postal code and country. These two generic address formats might accommodate several international and data clients' needs because of their simplicity and non-granularity.

If the generic nor the other system-defined address formats meet the client's needs, then a new address format should be created. There are a total of 27 columns in which to store address components. This quantity of components should be more than adequate to accommodate any type of address structured format any client requires.

Role of geographic area types

As described earlier, the process the software goes through to select the appropriate structured format for a given situation relies in part on the relationship of structured formats to geographic areas. COUNTRY is the highest level geographic area type (GAT) used in structured formats at this time. If you are implementing the software in a country other than those listed in Table 3, you and the client must determine what to use for the GATs subordinate to COUNTRY, and you must define the relationships that exist between those GATs. Defining the relationships between GATs is also referred to as building the GAT hierarchy. The only countries for which you do not have to build a GAT hierarchy are the United States and Brazil.

The base data loaded at installation includes six system-defined GATs. COUNTRY is an example of a GAT, and *Belgium* is an example of an instance of that GAT. Likewise, STATE is an example of a GAT, and *Texas* is an example of an instance of STATE. (With the exception of instances of countries, the instances of GATs must always be added through Infrastructure as part of the implementation process—instances of GATs lower than country are never included as base data.) If the base data GATs do not suit the client's needs, you must create new ones. For all countries other than the United States and Brazil, you must define the hierarchy that relates each GAT within the country, whether that GAT is new, or system-defined. The system-defined GATs loaded as base data are listed alphabetically in the following table, along with brief descriptions of their possible hierarchical relationships to each other.

GAT	Description and Relationships
CITY	CITY is a system-defined GAT that is often related as a child to STATE and COUNTRY. For the United States and Brazil, CITY has a system-defined relationship as a child to parent GAT STATE.
COLONIA	COLONIA is a system-defined GAT that is often related as a child to TOWN for Mexico and other Spanish-speaking countries.
COUNTRY	COUNTRY is the highest level system-defined GAT currently used in GAT hierarchies. COUNTRY is often related as the parent to STATE, PROVINCE, and CITY. For the United States and Brazil, COUNTRY has a system-defined relationship as the parent to GAT STATE.
PROVINCE	PROVINCE is a system-defined GAT that is often related as a child to COUNTRY.
STATE	STATE is a system-defined GAT that is often related as a child to COUNTRY. For the United States and Brazil, STATE has a system-defined relationship as child to COUNTRY, and as parent to CITY.
TOWN	TOWN is a system-defined GAT that is often related as a child to COUNTRY.

Table 4: System-defined GATs Loaded as Base Data

If the system-defined GATs do not accommodate your client's country, and you need to create new GATs, you do so using New functionality. The software provides a pre-defined relationship to the COUNTRY GAT for the majority of countries. When you need to create a new GAT it is most often a GAT that is subordinate to COUNTRY.

For example, Japan has a GAT called *prefecture*, but prefecture is not one of the system-defined GATs. If you were implementing a client in Japan, you would need to create a GAT called PREFECTURE and relate it as a child to the COUNTRY *Japan*. Though the situation is unlikely, if you need to relate a new country to the COUNTRY GAT, you can. Creating a new country is a slightly different procedure than creating a new GAT that is subordinate to COUNTRY. The procedures and nuances of creating new GATs, including creating new countries, are explained in the next chapter.

Processes that can be associated with structured formats

Just as multiple countries can be associated with one structured format, multiple processes can be associated with one structured format. Processes, as the term is used within structured formats, are specific areas of functionality with the MetaSolv Solution.

For example, the PSR500 process is all the functionality within the PSR module that uses structured formats and geographical areas, except the parts of PSR that employ service

addresses. The PSR functionality that uses service addresses is a separate process named PSR_SVC_ADDR.

Looking at processes from the perspective of the structured formats that use them, consider the following example. The only process in which switch prefixes are used is the Infrastructure for Network Areas process (INFRA500NA). When you open the switch prefix structured format named SWITCH-MX, you see on the Processes tab that those are the two processes that are associated with the SWITCH-MX structured format.
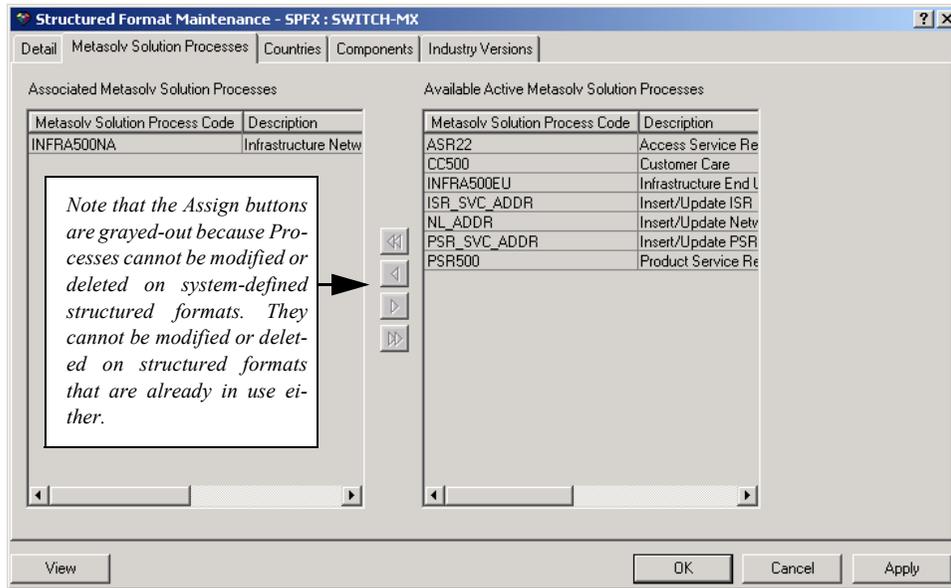
Figure 9: Example of Processes Related to a Structured Format

Processes are system-defined and loaded as base data. You cannot create, delete, or modify processes. You cannot modify the relationships of processes to system-defined structured formats. You cannot modify the relationships of processes to structured formats that are already in use (data has been stored using them.) You can modify the relationships of processes to structured formats in the structured formats you create, but you must be careful to relate them appropriately. The following table (Table 5) lists the system-defined processes that can be associated with a new structured format.

Process Code	Description
ASR22	Process for end-user service address location information (SALI) within ASR. This process should never be associated with new structured formats.
CC500	Process for querying for service requests within the Customer Care module. For an address structured format to be available in a Customer Care query, this process must be associated with that structured format.
INFRA500EU	Process for end-user location window in Infrastructure. For an address structured format to be available from the End User Location window in Infrastructure, this process must be associated with that structured format.
INFRA500NA	Process for Network Areas, Number Inventories, and Prefix in Infrastructure. This is the only process that should be associated with a switch prefix structured format.
PSR500	Process for telephone number processing and telephone number assignment in PSR. For a telephone number structured format to be available to assign telephone numbers in PSR, this process must be associated with that telephone number structured format.
ISR_SVC_ADDR	Process for end-user service addresses in ISR. For an address structured format to be available in ISR for end user locations, this process must be associated with that structured format.
NL_ADDR	Process for entering network location addresses on the Network Location window in Infrastructure. For an address structured format to be available in the Network Location window in Infrastructure, this process must be associated with that structured format. The addresses for network locations are sometimes simpler (due to CLLI codes and Coded Locations) than end-user and service addresses. For that reason, network location addresses are grouped into this process, and end-user and service location addresses for Infrastructure are grouped into the INFRA500EU process.
PSR_SVC_ADDR	Process for end-user addresses in PSR. For an address structured format to be available in PSR for end user service locations, this process must be associated with that structured format.

Table 5: Processes that Can Be Related to Structured Formats

System-defined structured formats

As already mentioned, the software provides several system-defined structured formats with the base data loaded during installation. The following tables list the 26 system-defined structured formats, sorted by type, along with a brief description and a list of the components that comprise them. (Components are explained in the next section and in Chapter 3.)

Structured Format Name	Description
ADDR_BE	Format for Belgium. Components: Address Line, City, Country, Postal Code, Street Name, Street Number, Street Type.
ADDR_BR	Format for Brazil. Components: Address Line, City, Country, Postal Code, State, Street Name, Street Number, Street Type.
ADDR_CA_ENG	Format for Canada for English language. Components: Address Line, City, Country, Postal Code, Province, Street Name, Street Number, Street Type.
ADDR_CA_FR	Format for Canada for French language. Components: Address Line, City, Country, Postal Code, Province, Street Name, Street Number, Street Type.
ADDR_DE	Format for Germany (Deutschland). Components: Address Line, City, Country, Postal Code, Street Name, Street Number, Street Type.
ADDR_FR	Format for France. Components: Address Line, City, Country, Postal Code, Province, Street Name, Street Number, Street Type.
ADDR_GENERIC_PC_CITY	Generic three-line format without State. Components: Address Line 1, Address Line 2, Address Line 3, City, Country, Postal Code.
ADDR_GENERIC_PC_CITY_ST	Generic three-line format with State. Components: Address Line 1, Address Line 2, Address Line 3, City, State, Country, Postal Code.
ADDR_MX	Format for Mexico. Components: Address Line, Colonia, Country, Postal Code, State, Street Name, Street Number, Town.

Structured Format Name	Description
ADDR_PT	Format for Portugal. Components: Address Line, City, Country, Postal Code, Street Name, Street Number, Street Type.
LOT_BLOCK_PLAN	Format for residential areas under construction. Components: Block, Lot Plan
MSAG	Format for North American Master Street Address Guide used for NENA validation. Components: Additional Address, Building, City Name, Community, Country Code, County, Floor, House Number Prefix, House Number, House Number Suffix, Post Directional, Pre Directional, Room, State Code, Street Name, Street Suffix, Suite, Zip Code.
OBF_SRVC_ADDRESS	Format currently used forOBF ASOG 22 Service Address Location Information form. Components: Address Format Type, Address Number, Address Number Prefix, Address Number Suffix, City, Country, Location Designator #1, Location Designator #2, Location Designator #3, Location Value #1, Location Value #2, Location Value #3, State/Province, Street Directional Prefix, Street Direction Suffix, Street Name, Street Type, ZIP/Postal Code.
RESERVE_LAND_HOUSE	Format for rural areas. Components: House, Land, Reserve.
ROUTE_POLE	Format for rural, undeveloped areas. Components: Pole, Route.
TEXT	Format for areas requiring minimal or highly variable descriptions. Components: City, Country, Postal Code, State, Text.

Table 6: Address Structured Formats Loaded as Base Data

Structured Format Name	Description
TN-BE	Telephone number format for Belgium. Components: Area Code, Subscriber Line.
TN-BR	Telephone number format for Brazil. Components: Area Code, Prefixo, Numero.
TN-DE	Telephone number format for Germany. Components: Area Code, Subscriber Line.
TN-MX	Telephone number format for Mexico. Components: Area Code, Subscriber Line.
TN-US	Telephone number format for the United States. Components: Line, NPA, NXX.

Table 7: Telephone Number Structured Formats Loaded as Base Data

Structured Format Name	Description
SWITCH-BE	Switch prefix format for Belgium. Component: Area Code.
SWITCH-BR	Switch prefix format for Brazil. Components: Area Code, Prefixo.
SWITCH-DE	Switch prefix format for Germany (Deutschland). Component: Area Code.
SWITCH-MX	Switch prefix format for Mexico. Component: Area Code.
SWITCH-US	Switch prefix format for the United States. Components: NPA, NXX.

Table 8: Switch Prefix Structured Formats Loaded as Base Data

Role of components

Components are the building blocks of structured formats. When you look at the MetaSolv Software through the windows of its user interface, the individual components of a structured format are seen as fields. Fields have a label, a type, a length, and other properties, as do components.

For example, when a user looks at the data entry window (shown in Figure 10) for entering a new network location address into Infrastructure, they see two panes: one for selecting the country and address format, and one for entering the actual fields of the address. In the first pane they see that the country is *United States* and the address structured format is *North American Master Street Address Guide.* In the address information pane, they see 18 fields, each with a label identifying the field. Some of the fields are drop-downs, some are editable. Each field is a component on the MSAG address structured format. The component defines where the field appears on the data window, what the field is called, how long it is, what type it is (drop-down or editable), and the order the cursor follows when the user presses the tab key to move from field to field

Figure 10: Network Location Data Entry Window

To see a list of the components driving the fields you see on the Network Location data entry window, you would open the Components tab of the *MSAG* structured format, as shown in Figure 11.
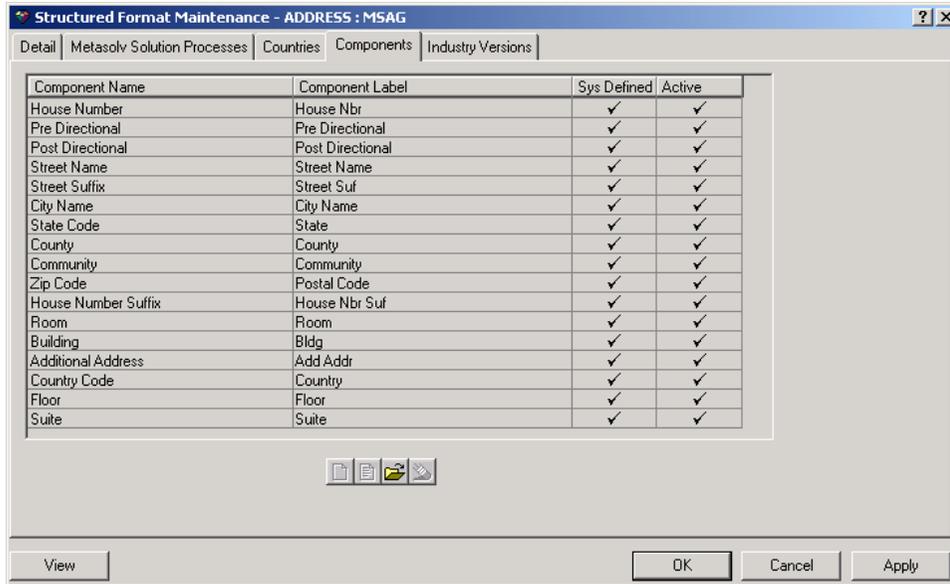

Figure 11: Components of the MSAG Structured Format

To see the properties that comprise an individual component, you would open a component from the Components tab. The *Street Suffix* component is opened in Figure 12. (You learn about component properties in detail in the next chapter.)
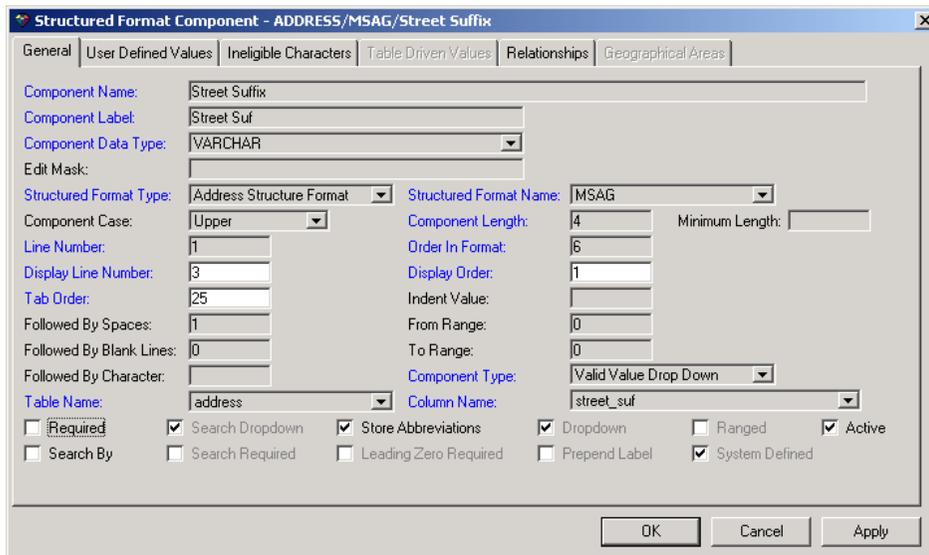
Figure 12: General Properties of a Component

To understand components at a high level, remember that when a user views a window that employs a structured format, the fields he sees on the window are defined by the components of that structured format. Every structured format has at least one component, and every component includes the following:

- Properties. A component's properties include all aspects of its content, appearance, and function. The fields you see on the General tab in Figure 12 combine to define what the component is, what it is called, what values are entered into it, where it appears on a data entry window, what it looks like when built, and where it is stored in the database.

- Component Type. A component can be one of four types. The types have implications for where a component's data comes from when it is displayed in a drop-down field. Knowledge of the MetaSolv Software data model, as it relates to structured format types, is essential for properly creating components. The four component types are:

  ⇒ Table Driven Drop Down drop-down. This component type is used for telephone number and switch prefix structured formats only, and it identifies the component as a drop-down. You must define the table and column in which a table-driven component is stored, and the table and column from which it is retrieved for presentation in the drop-down. The tables are not necessarily the same. For example, an NPA_NXX component is retrieved from a table called NPA_NXX , but stored in a table called TEL_NUM_INVENTORY.

  ⇒ Geographical area. This component type is used for address structured formats only, and it identifies the component as a drop-down. You must define the column in which geographical area components are stored, and the table and column from which they are retrieved for presentation in the component's drop-down. For example, the component called City is stored in the column called GA_INSTANCE_CITY, in the table called ADDRESS. However, it is retrieved from the column called GA_INSTANCE_ID in the table called GA_INSTANCE.

  ⇒ Valid Value drop-down. This component type is currently used for address structured formats only. You must define the column in which a valid value component is stored, however you do not have to define the table and column from which valid values are retrieved for presentation in the component's drop-down. Currently, the standard United States postal codes for street pre-direction and post-direction (compass points such as *N*, *E*, *W*, *NE*, and so forth), and street suffixes (also known as thoroughfare abbreviations, such as *St.*, *Blvd.*, *Ave.*) are the only system-defined valid values supplied as base data. You can create, delete and deactivate valid values, and you can select specific valid values for an address structured format.

  Furthermore, on regulated orders only, valid values can be associated with a specific provider using the provider's Interexchange Customer Service Center (ICSC) code. For example, if a client sends ASRs to a provider who only accepts three-character street suffixes on service location addresses (they accept *AVE* but reject *AV*) then that provider's ICSC can be associated with the three-character street suffixes only.

⇒ Not applicable. This component type identifies the component as one used for straight data entry. It is stored in the table and column you designate when you define it.

▪ Relationship to other components. If a component's values are dependent on another component's values, that relationship has to be defined. There are three types of relationships that can exist between components:

1. Component hierarchy

2. Geo Area hierarchy

3. Switches-to-telephone numbers

A Component Hierarchy relationship is used when the values one component presents are dependent on another component. For example, on a switch prefix structured format that uses North American Functionality, the values presented in an **NXX** drop-down are dependent on what is entered into the **NPA** drop-down. Therefore, the *NPA* component must be related as a parent to the *NXX* component through a Component Hierarchy relationship.

A Switches-to-Telephone Number relationship is used to relate a switch prefix structured format to a telephone number format. For example, the NPA component on the SWITCH-US structured format is associated with the NPA component on the TN-US structured format. An illustration of the Component Hierarchy relationship and the Switches-to-Telephone Number hierarchy relationship is shown in Figure 13.
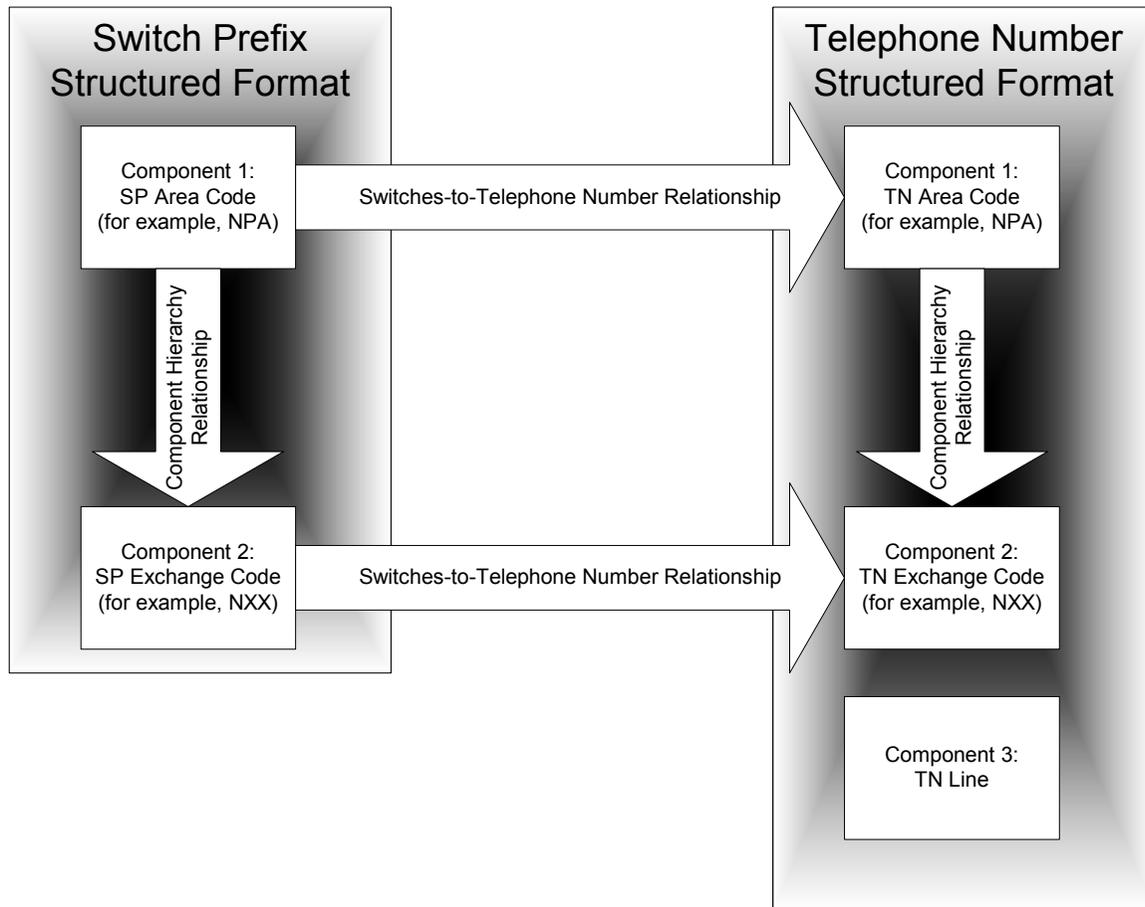
Figure 13: Component Hierarchy and Switches-to-Telephone Number Relationships

A Geo Area relationship is used when one Geographic Area type component is dependent on another Geographic Area type component for filtering its values. For example, the City component is typically dependent on the State component to filter its values. Just as GATs define the hierarchy for a country through their relationships to one another, a Geo Area relationship define the dependency of one Geographic Area type component to another.

If the client is upgrading

For existing customers upgrading to M/5, all address data affected by structured formats will be converted to the MSAG address format. Because of this conversion, the MSAG structured format cannot be altered in any way by clients who upgrade. If the client chooses to modify the MSAG format, you will need to do a New-From on the existing format, name it differently ("MSAG2" or "MSAG-NEW") and make modifications to the new format.

Structured formats implementation checklist

Based on the information about structured formats introduced in this chapter, consider the following checklist as a high-level outline of what you should evaluate and define during implementation in regard to structured formats.

1. List the countries in which the client conducts business on a regular basis.

2. Research and thoroughly define the geographical areas that comprise those countries.

3. Relate the geographical areas hierarchically to one another. Consider that not all geographical areas are necessarily relevant to the client's business, and that they might be relevant in some situations but not in others. For example, the United States has counties as geographical areas, but they are not used in postal address formats; they are, however, used in the MSAG. Or, as another example, like the United States, Germany has states, however they do not use states in addresses. Compare the client's geographical hierarchy to the pre-loaded countries and GATs in the software and determine whether any changes or additions are required. Get a list of instances of each type of GAT so that you can enter them into Infrastructure (you will need some instances to be able to fully test the address structured formats).

4. Research thoroughly and define in detail the official postal address formats of the countries in which the client conducts business. Consider that the amount of detail needed for some types of addresses (such as service address locations) might differ from the amount of detail needed for other types of address (such as equipment locations). You must determine if there are business processes that require detailed address components. For example, NENA (E911) processing in the United States requires the components of the MSAG address format.

5. Define the technically correct format for switch prefix within the technically correct format for telephone number.

6. Examine the system-defined structured formats to determine if any of them fully accommodate the address, switch prefix, and telephone number formats the client requires. This step requires you to compare, component by component, the client's requirements to the system-defined structured formats.

   Note: Clients that do not use the telephone number inventory do not need to define switch prefix or telephone number structured formats.

7. Define in detail what the components will be for any structured formats that need to be modified or created. This includes defining the following:

   ⇒ Which components are mandatory fields on the data entry window.
   ⇒ Which components are drop-down fields on the data entry window.
   ⇒ Which components can be used in queries, and whether they are required.
   ⇒ How the components should be arranged on the data entry window as fields.
   ⇒ How the components should appear when they are displayed in a window as a built structure.

8. Write an implementation plan for structured formats based on the discoveries of this checklist.

Primary list of best practices for structured formats

The following list is preliminary and high-level. As you read the next chapters on how to modify, create and use structured formats, there are more detailed best practices to be considered.

- When existing structured formats are not suitable to the client's requirements, endeavor to create new structured formats using New-From functionality. New-From functionality ensures that hierarchies and relationships remain intact and correct. Creating new structured formats using New rather than New-From requires additional, thorough testing of hierarchies and relationships.

- Ensure that there is always one structured format of a given type for a given country with its **Primary Indicator** enabled. The software prevents you from making a country primary on more than one structured format of each type, but it does not prevent you from omitting a **Primary Indicator** for a given structured format type and country. If the **Primary Indicator** is omitted for a given structured format type and country, there is no default structured format value for that country.

- Clients should endeavor to use one structured format type per country throughout their software implementation, and these structured formats should not be fundamentally changed after they have been used. Cosmetic changes to the structured format description, or the components' labels or sequence are not fundamental, and can be done. Changes to the number of components or to their type are fundamental, and should not be done. There is no method of upgrading the data stored with the old structured format after it is fundamentally changed.

- Clients who elect to use multiple address structured formats must understand the potential for slower queries, and for incorrectly specifying a query.

Creating Structured Formats

This chapter is for the individuals responsible for implementing the MetaSolv Solution. As with the preceding chapter, however, advanced users of the software can also benefit from understanding the concepts and procedures presented in this chapter.

This chapter explains how to create GATs and build a GAT hierarchy, and how to modify and create structured formats and their components to suit unique requirements. The chapter presents two types of information: scenarios and procedures. The scenarios present situations that lead to specific procedures. The procedures present how-to information for accomplishing specific tasks related to structured formats. The sequence in which you need to complete procedures varies with each implementation, but at the highest level, structured formats should be implemented in the following sequence:

Implementation Sequence

1. Build the GAT hierarchy

   ✎ Activate country (in extremely rare cases, you might also have to add the country)

   ✎ Add GATs if necessary, then relate GATs (build GAT hierarchy)

   ✎ Add instances of GATs through Infrastructure

   ✎ Set users' preferences

2. Establish address structured format(s)

   ✎ Determine which structured format to use, or to use as origin in New-From

   ✎ Relate country, processes, and components, then activate structured format

3. Establish switch prefix structured format (if client uses telephone number inventory)

   ✎ Determine which structured format to use, or to use as origin in New-From

   ✎ Relate country, processes and components, then activate structured format

4. Establish telephone number structured format (if client uses telephone number inventory)

   ✎ Determine which structured format to use, or to use as origin in New-From

   ✎ Relate country, processes and components, then activate structured format

5. Relate switch prefix components to telephone number components

There are more than five procedures required to complete the above five steps. The high-level outline at the end of the preceding chapter, "Structured formats implementation

checklist" on page 29 can help you determine which procedures you need. Reading through the scenarios that begin on page 2 of this chapter can also help you determine which procedures you need. The list below shows the names and page numbers of all of the procedures included in this chapter. Note that some procedures include sub-procedures; for some clients you might need only the sub-procedures, but for others you might need the entire procedure.

Procedures

Determine GAT hierarchy (page 35)

Build a GAT hierarchy (page 40)

- Add a new GAT (page 37)
- Add a new country (page 37)
- Activate a country (page 38)
- Create instances of a GAT (page 39)
- Define users' preferences (page 39)

Determine the default structured formats for a country (page 41)

Determine structured formats that fit a client's needs (page 41)

Change the default structured format for a country (page 42)

Modify an existing structured format (page 43)

- Change component label (page 44)
- Change component layout and tab sequence (page 44)
- Change other properties of existing components (page 47)

Create a new address structured format (page 48)

Create a new switch prefix structured format (page 52)

Create a new telephone number structured format (page 54)

Create a component (page 58)

- Create a Geographical Area component (page 59)
- Create a Table Driven Drop Down component (page 66)
- Create a Valid Value Drop Down component (page 71)
- Add instances to the valid values table (page 74)

The scenarios

The following scenarios are provided to help you understand the process of implementing structured formats and using the procedures that follow the scenarios. The scenarios also give you some basic data with which to practice implementing structured formats.

The SpeedLink Inc. scenario

SpeedLink Inc. is a service provider in the United States that sells highspeed facilities exclusively to other providers. SpeedLink uses ISR and PSR for all their ordering. The only address information they want their users to be required to fill in on an order is the street address, city, state, and ZIP code. SpeedLink does not provision to end users or assign telephone numbers, so they do not need MSAG information on any address.

Implementation analysis regarding the GAT hierarchies and structured formats reveals the following information about SpeedLink. Based on this information and the referenced procedures, you should be able to set up the needed GATs and structured formats.

- The system-defined GAT hierarchy for country=United States is Country>State>City, which fulfills SpeedLink's needs.
  (For instructions on determining geographic area hierarchy, see "Determine GAT hierarchy" on page 35.)
- The default address structured format for Country=United States is MSAG, which does not meet SpeedLink's needs.
  (For instructions on determining the default structured format for a country, see "Determine the default structured formats for a country" on page 41.)
- The address structured format that fits SpeedLink's needs is TEXT.
  (For instructions on determining structured formats that fit a client's needs, see "Determine structured formats that fit a client's needs" on page 41.)
- Changing the default address structured format from MSAG to TEXT fulfills the needs of SpeedLink Inc.
  (For instructions on changing the default structured format for a country, see the "Change the default structured format for a country" on page 42.)

The ManxComm Ltd. scenario

ManxComm is a data provider in Castletown, Isle of Man. They just purchased the MetaSolv Solution, primarily for its ordering, work management, and circuit design capabilities. As a data provider, they do not need to place any telephone numbers in inventory.

Implementation analysis regarding the GAT hierarchies and structured formats reveals the following information:

- There is no instance of Isle of Man as a country, hence, there is no GAT hierarchy associated with Isle of Man. This is one of the very rare cases in which the country must be added. The Isle of Man lies between England and Ireland, but is not part of the United Kingdom. The system-defined GATs are suitable to Isle of Man's hierarchy, but the country needs to be added and the GATs need to be related to each other. Isle of

Man's hierarchy is simply COUNTRY as parent to CITY. (See "Add a new GAT" on page 37, and "Build a GAT hierarchy" on page 40 for instructions.)

- There are no system-defined address structured formats for Isle of Man. (ManxComm does not need switch prefix or telephone number structured formats because they do not inventory telephone numbers.) The implementation team must research the system-defined address structured formats to determine which one to use, or create a new address structured format. (See "Determine structured formats that fit a client's needs" on page 41, and "Create a new address structured format" on page 48 for instructions.)

- The address format that ManxComm wants to use is shown in the table below. The implementation consultant determines that the ADDR_GENERIC_PC_CITY format is a close match to the address structure ManxComm needs. The consultant can use New-From on the ADDR_GENERIC_PC_CITY format to create a new address format, then modify the components: one address line component needs to be deleted, and the postal code component needs to be modified. (See "Create a new address structured format" on page 48 and "Create a component" on page 58.)

Address Format components	Example
<Building> <Plot> <Thoroughfare> <Town> <Postcode> <Country>	Douglas House 32 Ramsey Road Castletown IM 5EE ISLE OF MAN

- Rules regarding the postcode:
- Write the postcode in block capital letters and never join the characters.
- Do not use punctuation marks anywhere in the code.
- Leave a clear space, equivalent to two characters, between the two parts of the code.
- Never underline the postcode.
- The postcode should always be the last item in the address, on a line by itself.
- Never write anything below or to the right of the postcode.

The Mapleleaf Tel scenario

Mapleleaf Tel is a Canadian provider that just purchased the MetaSolv Solution. They use all the ordering modules, including ASR and LSR. They also support North American Emergency Number Association (NENA) service and number portability.

Implementation analysis regarding GATs and structured formats reveals the following information:

- Appropriate GATs exist, but the hierarchy relating them needs to be built. For Canada, COUNTRY is parent to PROVINCE, and PROVINCE is parent to CITY. (See "Build a GAT hierarchy" on page 40 for instructions.)

- Because Canada uses NENA, number portability, and PICs (primary interexchange carriers) the **North American Functionality** checkbox must be enabled for the country. (See "Activate a country" on page 38 for instructions.)

- Mapleleaf Tel wants MSAG to be their default address structured format to accommodate their NENA compatibility. This means the following changes must be made:

  - Create a new address structured format using New-From on the system-defined MSAG format.

  - Remove the existing associated countries, and add Canada as an associated country, making it **Primary** so that this address format is the default for Canada. (See "Create a new address structured format" on page 48 and "Change the default structured format for a country" on page 42 for instructions.)

  - Change the STATE component in the following ways:

    ⇒ On the component's General tab, change **Component Name** and **Component Label** to PROVINCE.

    ⇒ On the component's Geographic Areas tab, remove the existing associated countries and click **APPLY** to update the database. Select PROVINCE in the **Geographical Area Type** drop-down, then select Canada from the Available Countries list and associate it by clicking the **Assign** button. (See "Create a Geographical Area component" on page 59 for instructions.)

  - Change the CITY and COUNTRY components in the following ways:

    ⇒ On both components' Geographic Areas tab, remove the existing associated countries and click **APPLY** to update the database. Select Canada from the Available Countries list and associate it by clicking the **Assign** button. (See "Create a Geographical Area component" on page 59 for instructions.)

Determine GAT hierarchy

To determine whether there is an existing GAT hierarchy for a country, do the following:

1. Start MetaSolv Solutions Utility Application.

2. Click **Options** and select **Geographical Area Types**.

3. Double-click **COUNTRY** to open it.

4. Click the GAT Relationships tab to open it. Look at the bottom pane. If the country appears in the Parent column of that pane, then a GAT hierarchy has been built for it, and you should continue to step 5. If the country does not appear in that pane, then the country is without a GAT hierarchy and you need to create a GAT hierarchy for it. (See "Build a GAT hierarchy" on page 40.)

5. Select the **Country** for which you are determining GAT hierarchy. For example, select the **United States** in the **Parent** column of the bottom window pane, then click the **View** button at the bottom of the window.

6. Double-click the **globe icon** to expand the hierarchy for the country.

7. If the subordinate level appears with a plus-sign, click the plus-sign to expand to the next level. Continue clicking plus-signs until you reach the level without a plus-sign. When the hierarchy is fully expanded (there are no more plus-signs to click), you can see how many levels are in it, and what each level is called. For example, as shown in Figure 14, there are a total of three levels for the United States: COUNTRY is first, STATE is second, and CITY is third.
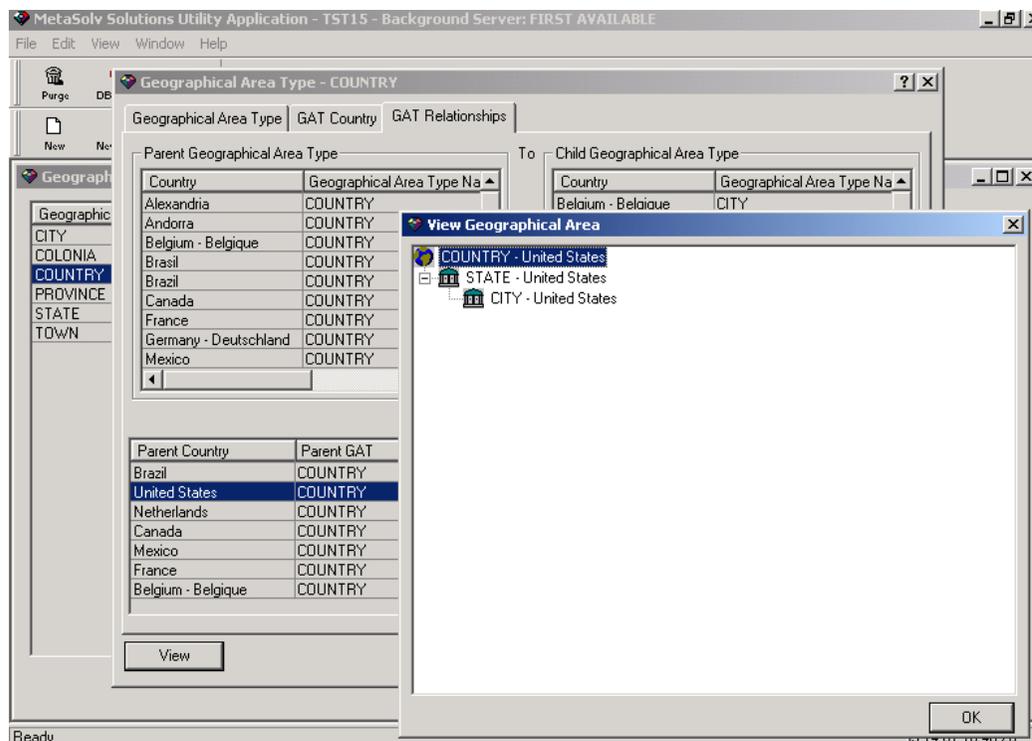
Figure 14: GAT Hierarchy Fully Expanded

Add a new GAT

If a country has a geographic area type that is not accommodated by the six system-defined GATs, you can add a new GAT.

1. Start MetaSolv Solutions Utility Application.

2. Click **Options** and select **Geographical Area Types**.

3. Click **New**.

4. Enter a GAT name and description and click **Apply**.

5. Click the GAT Country tab and move the country for which you are creating the new GAT to the Associated Countries list by selecting it and clicking the **Assign button**. Note that if the country you want to relate does not appear in the Available Countries list, click the **Show Inactive Countries** checkbox. If the country then appears, then you do not need to add it, but you do need to activate it. To activate the country, see "Activate a country" on page 38.

6. Click **OK** to complete addition of the new GAT.

Add a new country

If a country does not appear in the list on the Country tab of the Geographic Area Type window, then you must add it as a new country. For example, in the scenario above for ManxComm, it was determined that the Isle of Man needed to be added as a new country. The procedure for adding a new country is explained below.

1. Start MetaSolv Solutions Utility Application.

2. Click **Options** and select **Geographical Area Types**.

3. Double-click **COUNTRY** to open it.

4. Click the GAT Country tab to open it.

5. Click the **New** button. The following window appears:

Figure 15: Country - New Window for Adding a New Country

6. Complete all fields on the Country—New window. While the **Numeric Country Code, Three Character Country Code** and the **North American Functionality** fields are not

required fields, they are extremely important fields. The **Numeric Country Code** is sometimes used for billing purposes, and it must be a unique identifier for the country. The **Three Ch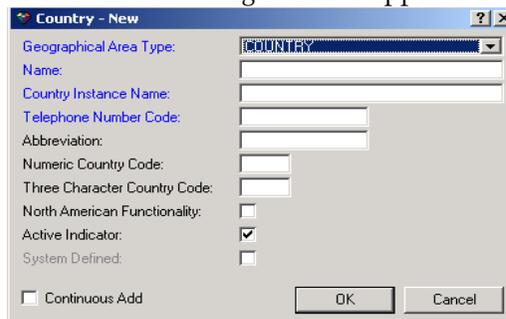aracter Country Code** should always be filled in, and the code should be based on ISO standard country codes. **North American Functionality** has implications across the software, some of which are:

- Controls display of fields and tabs relevant to north American functionality such as: E911, PIC, CNAM, LIDB, LNP
- Use of working telephone number (WTN) to determine local serving office (LSO) on a circuit design
- Control over the structures that are needed for PSR API
- PSR validations

7. The value you enter in the **Country Instance Name** field is the name that appears in Infrastructure for the country. You can use this field to localize the country name to the native language. For example, Spain would have a **Country Instance Name** of España.

8. Click **OK** to save the values and close the window.

Activate a country

If you need to check (or change) a country's settings regarding its **Telephone Number Code**, **North American Functionality**, **Country Instance Name**, or **Active Indicator**, do the following:

1. Start MetaSolv Solutions Utility Application.

2. Click **Options** and select **Geographical Area Types**.

3. Double-click **COUNTRY** to open it.

4. Click the GAT Country tab to open it.

5. Select the country you want to activate from the Associated Countries pane. If the country does not appear, click the **Show Inactive Countries** checkbox.

6. Click **Open**. The Country window appears. It is identical to the Country- New window shown above in Figure 15.

7. If the name of the country shown in the **Country Instance Name** field is not translated to the local language, you change it. The name that appears in this field is the name of the country that appears in Infrastructure. For example, you could enter a **Country Instance Name** of España for Spain.

8. If the **Active Indicator** is not checkmarked, click it to enable it.

9. If the **Three Character Code** is blank, fill it in with the correct ISO code.

10. If the country employs **North American Functionality**, mark that checkbox. (See step 6 in the preceding procedure for *Add a new GAT* to understand the implications of checkmarking **North American Functionality**.)

11. If you want to check whether a hierarchy was created for the country (perhaps you are activating a country that had had a hierarchy built previously) you can click the **View** button on the GAT Country tab.

12. Click **OK** to save and close the window.

Create instances of a GAT

You should always add a few instances of each GAT after you build the GAT hierarchy so that you can fully test address structured formats. This is done through Infrastructure in the core product rather than through utilities. To add instances of each GAT in the hierarchy, do the following:

1. Start the MetaSolv Solution Software.

2. Click **Infrastructure** on the main menu.

3. Click **List>Geo Areas.**

4. Expand Geo Areas.

5. Expand the country for which you are creating instances.

6. Right-click and select **Add** or **Add New Child**. The window shown in Figure 16 appears. Add at least two instances of each GAT in the country's hierarchy.
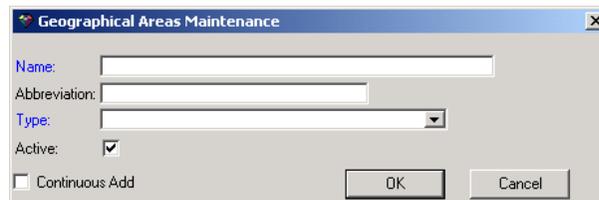

Figure 16: Geographical Areas Maintenance Window in Infrastructure

Define users' preferences

There are four preferences related to structured formats that should be defined for every user during implementation. Preferences determine structured format defaults in

accordance with the default hierarchy described in "How structured formats are employed" on page 8 of Chapter 2. The four preferences are shown in Figure 17.
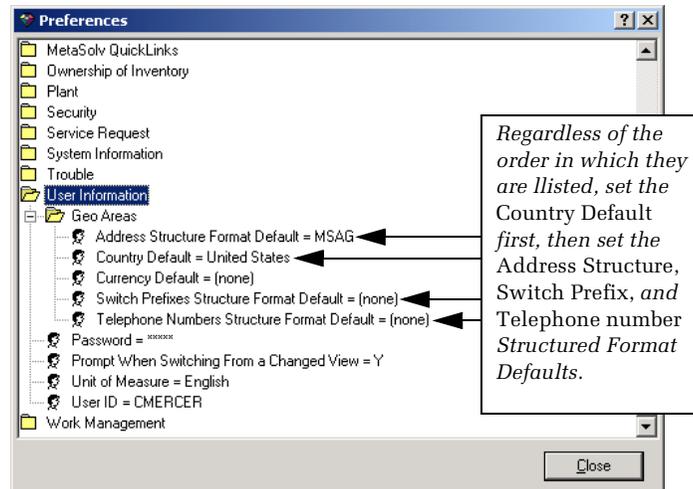
Figure 17: User Preferences Settings Related to Structured Formats

Build a GAT hierarchy

Use the following procedure to create a hierarchy that relates the different GATs within a country. Note that relationships are always built from the top down; from the parent to the child.

1. Start the MetaSolv Solution Utility Application.

2. Select **Options>Geographical Area Types** from the main menu.

3. Open a GAT that is subordinate to the country level. For example, if you were building a hierarchy for the United States, you could open STATE or CITY.

4. Click the GAT Country tab. Look for the country for which you are building the hierarchy in the Available Countries list. If the country does not appear, click the **Show Inactive Countries** checkbox.

5. Select the country whose hierarchy you are building in the Available Countries pane and click the Assign button (left-arrow) to move it to the Associated Countries pane.

6. Repeat steps 1-5 for each GAT the country requires in its hierarchy. This process associates the GATs with the client's country, which must be done before the GATs can be related to each other hierarchically. (Remember, Brazil and the United States are the only countries that have their GAT hierarchies pre-built, so you must complete this procedure for any country other than Brazil or the United States.)

7. After associating each GAT to the country, open the GAT that is the first level down from COUNTRY for the client's country. For example, if you were building the hierarchy for the United States, you would open STATE.

8. Click the GAT Relationships tab.

   ■ Select the client's country in the Parent Geographical Area Type pane.
   ■ Select the subordinate GAT for the country in the Child Geographical Area Type pane.
   ■ Click the **Assign** button to build the parent-child relationship.

9. Repeat step 8 for each subordinate GAT level that needs to be related. You can only build the relationship from the top down; from the parent GAT to the child.

10. If the client prefers it, you can deactivate the countries they do not need. Deactivating countries simplifies what appears in the Infrastructure Geo Areas list. To deactivate a country, open the Countries tab, then open each country the client does not need and uncheck its Active checkbox.

11. Add instances of each GAT for the country. This is done through Infrastructure in the core product rather than through utilities. You must have a few instances of each GAT to be able to test address structured formats that employ drop-downs based on GATs. To add instances of GATs, see the preceding procedure titled "Create instances of a GAT" on page 39.

Best practices regarding GATs

■ Always make sure you understand the GAT hierarchy for any country for which you are implementing structured formats. You must build the hierarchy for any country other than the United States and Brazil—those are the only two countries that are installed with system-defined GAT hierarchies. To build a GAT hierarchy, you must relate parent GATs to child GATs.

■ Confirm that the country's activation settings (**Telephone Number Code**, **North American Functionality**, **Three Character Country Code**, and **Active Indicator**) are absolutely correct. With the exception of the **Active Indicator**, you cannot change these settings after entering data without inactivating the country, then creating a new country, and any data entered under the old country cannot be migrated to the new country.

Determine the default structured formats for a country

To determine the default structured formats for a given country, refer to: Table 6 on page 22, Table 7 on page 23, and Table 8 on page 23. If the country you are working with is not listed in those tables, then it does not have any default structured formats defined for it yet. See "Change the default structured format for a country" on page 42 for instructions on setting up default structured formats for a country.

Determine structured formats that fit a client's needs

To determine which structured formats fit a client's needs, you must examine in detail the components of the ones you think might be right. This procedure assumes you have already completed a thorough analysis of the client's needs, and that you have already

defined the components of their addresses, phone numbers, and switch prefixes. The components of the system-defined structured formats are listed in Table 6 on page 22.

However, you should examine the exact properties of the components, as explained in the following procedure, to ensure that they fulfill the client's requirements. If none of the system-defined structured formats fulfill the client's needs, see "Create a new address structured format" on page 48, "Create a new switch prefix structured format" on page 52, and "Create a new telephone number structured format" on page 54.

1. Start the MetaSolv Solution Utility Application.

2. Select **Options** from the main menu, then select **Structured Formats**>**Structured Formats**.

3. Double-click the structured format you want to examine.

4. Click the **View** button to see a preview of how the structured format looks in a data entry window, a query window, and as a built format in a display window.

   - You must enter sample data in the Data Entry Display tab to see how the components work as fields. Note whether the drop-down fields display appropriate values. Entering sample data also allows you to check the sequence in which tabbing occurs from field to field.
   - Click the Query Display tab to see which components of the structured format are presented in a query.
   - Click the Built Structure Format tab to see how the components of the structured format look in a display window, and how they will be stored in the database.

5. Click the Components tab, and double-click the first component to open it. Examine each of the tabs that are highlighted and all the fields on each tab to determine if the component meets the client's needs per your analysis of their requirements. See "Create a component" on page 58 for an explanation of each field on each tab of the Structured Format Components window.

6. Close the Structured Formats Components window to return to the Structured Formats Maintenance window.

7. Repeat steps 1-5 until all you have examined and understand the role and relationships of all components in the structured format.

Change the default structured format for a country

Use the following procedure when analysis of a client's needs reveals that the default structured format (the **Primary Indicator**) for the country should be changed.

1. Start the MetaSolv Solution Utility Application.

2. Select **Options** from the main menu, then select **Structured Formats**>**Structured Formats**.

3. Double-click the structured format that you want to assign as the new default format for the country.

4. Click the Countries tab.

5. Check the **Primary Indicator** for the client's country. When you do this, you receive a message telling you that the **Primary Indicator** is already set for that country on a different structured format. Make note of which structured format is stated in the message.

6. Close the Structured Format Maintenance window to return to the Structured Formats window.

7. Double-click the structured format that was stated in the message.

8. Click the Countries tab, and uncheck the **Primary Indicator** checkbox for the client's country, then close the Structured Format Maintenance window.

9. Re-open the structured format you want to change the default to and click the Countries tab, then check the **Primary Indicator** checkbox for the country. The structured formats with the **Primary Indicator** checkmarked for a given country become the default structured formats for that country. Note, however, that the process the software goes through to determine which structured format to use at a given point is determined by the hierarchy defined in "How structured formats are employed" on page 8 of Chapter 2.

Best practices regarding changing structured format defaults

- When changing the **Primary Indicator** for a country, you must disable it on the existing structured format before you can enable it on a different structured format.
- If you are creating a new structured format, and it is the only one the customer will use for that type of format, be sure to enable the **Primary Indicator**.
- Always make sure that the **Primary Indicator** is enabled for the relevant country on the default structured format, for each structured format type and country that the client uses. For example, if the client uses different address structured formats for France, Netherlands, and Germany, make sure that France, Netherlands, and Germany are checkmarked as **Primary** on each country's default address format. Never omit the Primary Indicator for a country that actively employs structured formats!

Modify an existing structured format

How much of an existing structured format you can modify varies with three factors:

- Whether it is a system-defined structured format
- Whether it is active
- Whether it is in use (data has been stored using the format)

There are several restrictions on how the components of the format can be changed once it is active and in use. However, prior to those two events, some changes can be made to how components appear and whether they can be used in a query. Modifying an existing structured format is the easiest customization you can do to accommodate a client's

requirements, so it is worth investigating modifications prior to resorting to creating new structured formats.

If an existing structured format (either system-defined or custom-defined, but prior to use) has all the components the client needs, but the components do not appear in the linear or horizontal layout on the data entry window that the client wants, you can change that. You can also change the sequence in which tabbing occurs on a data entry window, and the labels of the components. You can change certain other properties of a component, such as whether it is a required field, whether it can be used as a search parameter, and whether it is stored by its abbreviation. Use the following procedures to affect the needed change.

Change component label

1. Open the structured format.

2. Open the component whose label you want to change.

3. Type the new label in the **Component Label** field. Note that when you change this, the label by which this field is identified in online help will no longer match the label you have just given the field (component).

4. Click **OK** to save and close the Structured Format Component window.

5. Click **View** to check the change.

6. Click **OK** to close the Preview Structured Format window.

7. Click **OK** again to close the Structured Format Maintenance window.

Change component layout and tab sequence

1. Open the structured format.

2. Click **View** and print a copy of the Preview Structured Format window, then click **OK** to close the preview. If you cannot print the window, sketch a quick picture of it so that you can write important layout and tab sequence numbers on the picture. For

example, if you printed the preview of the ADDR_GENERIC_PC_CITY address format, it would look like this:
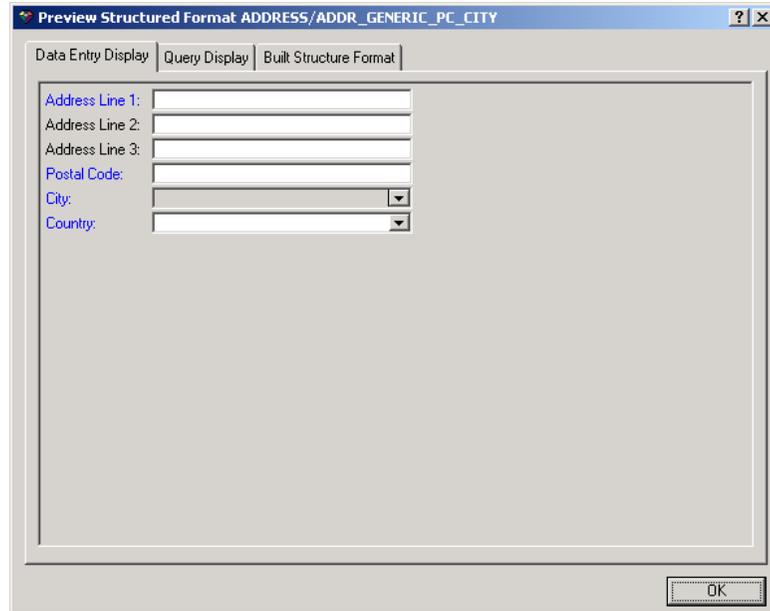
Figure 18: Preview of ADDR_GENERIC_PC_CITY Address Structured Format

3. Close the preview, then open each component and write the **Display Line Number**, **Display Order** value, and the **Tab Order** value next to the component as it appears on the preview window that you printed or sketched in step 2. Writing the display numbers and the tab sequence is the quickest way of figuring out how to change the layout. Refer to Figure 19 before proceeding to step 4.
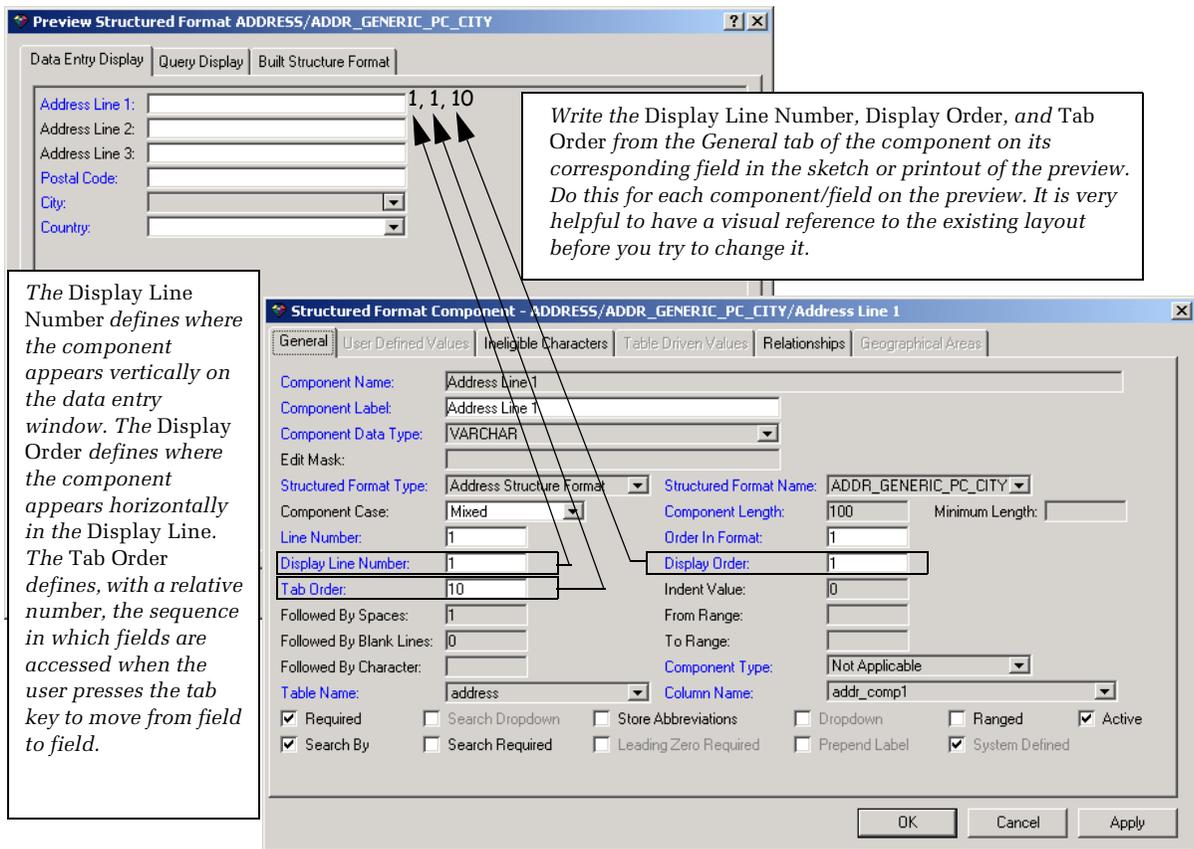
Figure 19: How to Modify Component Layout

4. Change the **Display Line Number** to move the component up and down the window; change the **Display Order** value to move the component horizontally across the display line; change the **Tab Order** to change the sequence in which the tab key travels through the components on a data entry window. (Note that it will be much easier to change tab order if the components were originally created with several spaces between their **Tab Order** values. For more information about **Tab Order**, **Display Line Number** and **Display Order**, see "Create a component" on page 58.)

5. Click **OK** to save component changes.

6. Click **View** to check your changes. Enter sample data in the fields on the Data Entry Display tab so that you can test the tab order. You need sample data to see how the structured format looks on a display window, which is what you see on the Built Structure Format tab. Note that the built structure is based on the **Line Number**, **Order In Format**, **Indent Value**, **Followed By Spaces**, **Followed By Blank Lines** and **Followed By Character** fields of the component. The **Display Line Number** and **Display Order** have no effect on the built structure whatsoever; they control the data

entry display only. (Note: If geographical area-based drop-downs are empty, it is because no instances of geographical areas were entered into Infrastructure. See "Create instances of a GAT" on page 39 for instructions on adding instances of GATs.)

Change other properties of existing components

There are checkboxes at the bottom of the General tab on the Structured Format Component window, some of which can be changed for an existing structured format. The ones you can change are listed below, along with a description of their role.

- **Required**. When enabled, the component becomes a required field on data entry windows, and its label appears in blue to signify that it is required. This property cannot be changed after the structured format is in use.

- **Search By**. When enabled, the component is available as a field on query windows that include the structured format as a query field. For example, the components **House Nbr** and **Street Name** have their **Search By** checkbox enabled on the *North American Master Street Address Guide* structured format, therefore they appear as fields on query windows, as shown in the sample window below.
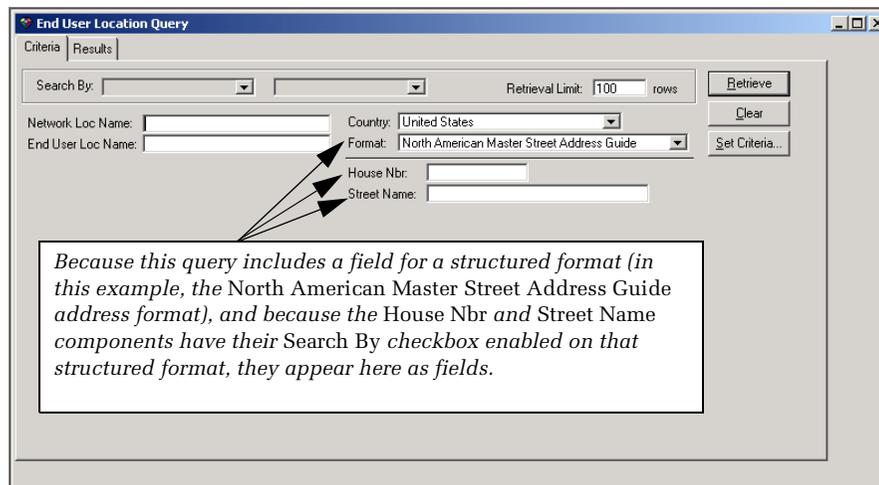
Figure 20: Effect of Enabling Search By Checkbox on a Component

- **Search Dropdown**. When enabled, the component is included as a drop-down box on query windows that include the structured format as a query field. This checkbox is available for components derived from tables—components with a **Component Type** of *Valid Value Drop Down*, *Table Driven Drop Down*, or *Geographical Area.* For example, the fields **City**, **Text**, **State**, **Postal Code**, and **Country** in the window sample in Figure 21 appear as drop-downs because those components have their **Search Dropdown** checkbox enabled on the address structured format named TEXT. Note that the description for the TEXT structured format is *Address when format is basic text* and that the description, rather than the name, is what appears in the drop-down.
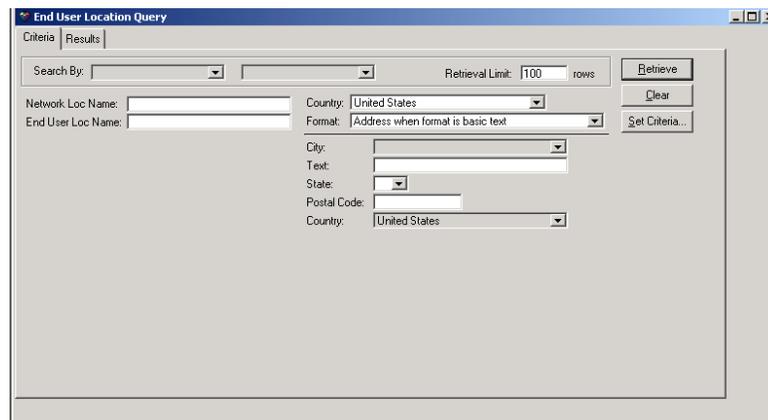
Figure 21: Effect of Enabling Search Dropdown Checkbox on a Component

- **Search Required**. When enabled, a value for the component must be specified in queries where its structured format is included.
- **Store Abbreviations**. When enabled, a component that derives its value from a table, and that includes an abbreviation, will have its abbreviation stored in its built structure.

Create a new address structured format

There are two ways to create a new address structured format: New, or New-From. Deciding whether to use New or New-From depends on how similar the origin is to the structure your client requires. The following procedure explains how to create a new address structured format using either New or New-From:

1. Start the MetaSolv Solution Utility Application.

2. Select **Options** from the main menu, then select **Structured Formats**>**Structured Formats**.

3. Either select a system-defined address format and click **New-From**, or simply click **New**.

4. Select the **Type**, and enter a **Name** and a **Description** for the new format. The **Description** is what shows up in drop-downs, not the **Name**. You will activate (by enabling the **Active** checkbox) the new structured format after you add components.

   ⚠ **Note:** The **Description** for a structured format, even on a system-defined structured format, can always be changed. This allows clients to control what appears in data entry windows where structured format drop-downs appear. For example, a Brazilian client might want to translate the system-defined address structured format from the English description of *Address Format for Brazil* to a Portuguese description.

5. Click **Apply**.

6. Click the MetaSolv Solution Processes tab, an example of which is shown below.
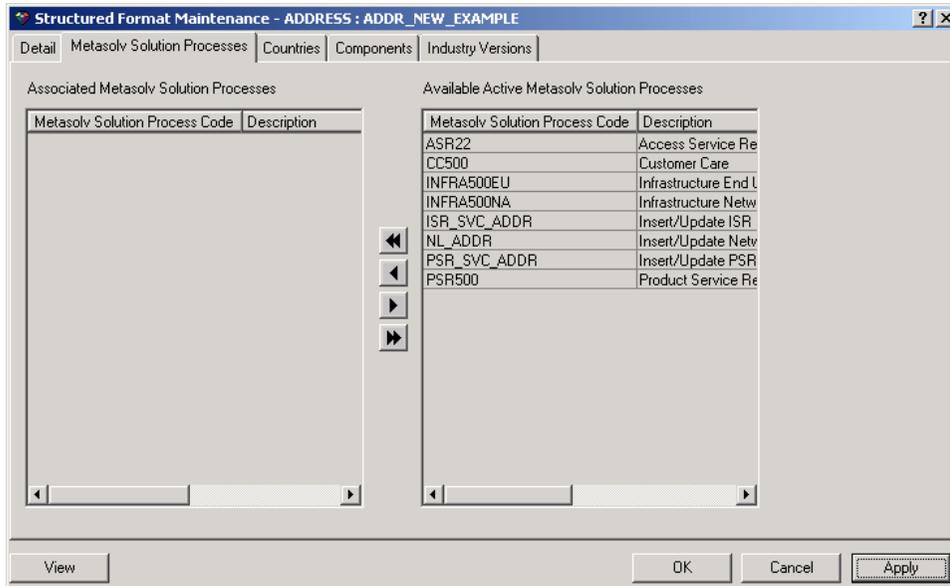
Figure 22: MetaSolv Solution Processes Tab on a New Address Structured Format

7. Select the appropriate processes from the Available Active MetaSolv Solution Processes pane and click the **Assign** button to move them to the Associated processes pane. (If you used New-From, you inherit the associated processes from the original structured format.) To understand which processes should be related, please carefully consider the description of processes found in "Processes that can be associated with structured formats" on page 18. It is generally a good practice to use one address structured format for all processes that use address structures whenever possible. If there is a well-founded reason to relate certain processes but not others, then choose the processes carefully.

8. Click the Countries tab, an example of which is shown below.
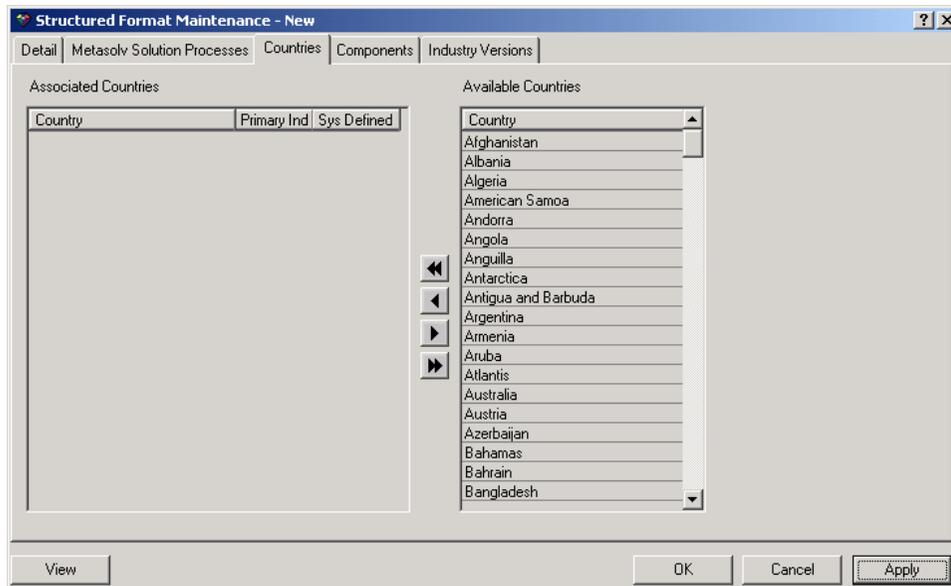
Figure 23: Countries Tab on a New Address Structured Format

9. Disassociate any countries inherited in a New-From that the client does not need by moving them from the Associated pane to the Available pane.

10. Relate the client's country to the new address format by selecting it and moving it from Available Countries to Associated Countries. If the country you want to relate does not appear in the Available Countries list, it is probably because it is inactive. To activate the country, see "Activate a country" on page 38.

11. Click the Components tab.

- Delete any components that were inherited in a New-From that are not relevant to the client's address format. If a component has relationships to other components, you must do deletions from the lowest to the highest component in the relationship.

- Open each component that was inherited in a New-From and make any necessary changes. See the section titled, "Create a component" on page 58 for an understanding of how to work with components.

- Add new components by clicking the **New** button. See the section titled, "Create a component" on page 58 for instructions on creating new components.

12. Use the **View** button from the Structured Format Maintenance window to check that the components look and act the way you want them to in the structured format. You must enter sample data in the Data Entry Display tab to be able to view it in the Built Structure Format tab. If you need to make changes to the data entry layout or the built structure, it is helpful to print the previews. Make notes on the printed preview of the

data entry view regarding the **Display Line**, **Display Order** and **Tab Order**—these are the fields that define the data entry view. Make notes on the printed preview of the built structure regarding the **Line Number**, **Order In Format**, **Indent Value**, **Followed By Spaces**, **Followed By Blank Lines** and **Followed By Character**—these are the fields that define the built structure. You need to know what these are before you try to change them.

13. You can review the Industry Versions tab, but there is no action required for defining industry version on structured formats—everything related to industry version is system-defined.

14. Return to the Detail tab and enable the **Active** checkbox to activate the structured format.

15. Enable the **Primary Indicator** if this is the structured format that should be used as the default for the country. If the country is already checkmarked as **Primary** on another address structured format, you must disable it there before you can enable it here. A structured format can be primary for several countries, but a country can only have one primary structured format per structured format type—one for address structured format, one for telephone number structured format, and one for switch prefix structured format.

16. Click **OK** to save the new format.

Best practices regarding address structured formats

- There are circumstances in which a client might need to employ multiple structured formats to accommodate multiple address formats. If the client elects to employ multiple structured formats, advise them of the complexities and possible performance degradation that kind of implementation might impose on querying activities. For clients who deal with multiple countries, the recommended approach to resolving the differing address formats is to define one structured format that is flexible and open enough to accommodate all the required countries' address formats. However, the software does support different formats for different countries.

- Make every effort to define address formats that can endure through all foreseeable business needs, such as expanding business to new countries. It is not feasible to change to a new address structured format after data has been entered using the old structured format. There is no means of connecting the old data to the new data without a custom conversion effort.

- Remember to enable the **Primary Indicator** for the country on the structured format that should be the default for the country.

- Once structured formats are used in the software and data is stored in the database according to those formats, they cannot be deleted. They can be deactivated, but they cannot be deleted. All data based on a deactivated structured format is preserved, but it cannot be migrated to a new format without a custom conversion effort. A deactivated structured format no longer appears as an option in a structured format drop-down, but it is still present within the software for the purpose of reviewing historical data that was stored using it.

Create a new switch prefix structured format

The procedure for creating a switch prefix structured format is explained below. Although the procedures in this chapter are not organized in a mandatory sequential order, in the case of switch prefix structured formats and telephone number structured formats, you must always create the switch prefix format before the telephone number format.

Note: You do not need a switch prefix structured format if the client does not inventory telephone numbers.

There are two ways to create a new switch prefix structured format: New, or New-From. Deciding whether to use New or New-From depends on how similar the origin is to the structure your client requires. The following procedure explains how to create a new switch prefix structured format using either New or New-From:

1. Start the MetaSolv Solution Utility Application.

2. Select **Options** from the main menu, then select **Structured Formats**>**Structured Formats**.

3. Either select a system-defined switch prefix structured format and click **New-From**, or simply click **New**.

4. Select the **Type**, and enter a **Name** and a **Description** for the new format. You will activate (by enabling the **Active** checkbox) the new structured format after you add components.

Note: The **Description** for a structured format, even on a system-defined structured format, can always be changed. This allows clients to control what appears in data entry windows where structured format drop-downs appear.

5. Click **Apply**.

6. Click the MetaSolv Solution Processes tab, an example of which is shown below.
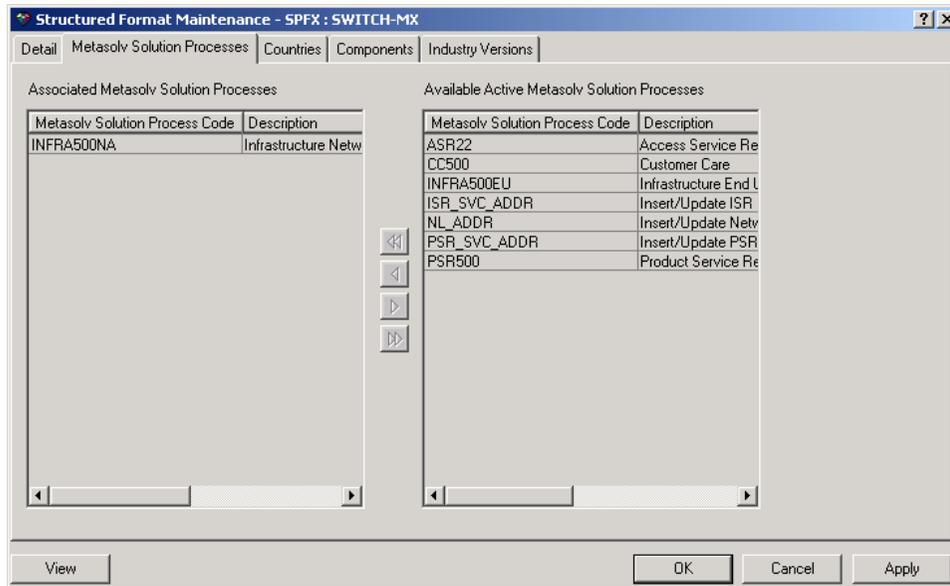

Figure 24: MetaSolv Solution Processes Tab on a Switch Prefix Structured Format

7. Select the INFRA500NA process from the Available Active MetaSolv Solution Processes pane and click the **Assign** button to move it to the Associated processes pane. (If you used New-From, you inherit the associated processes from the original structured format.) The INFRA500NA process is the only process that uses a switch prefix structured format.

8. Click the Countries tab and disassociate any countries inherited in a New-From that the client does not need by moving them from the Associated pane to the Available pane.

9. Associate the client's country by selecting it and moving it from Available Countries to Associated Countries using the **Assign button**.

10. Enable the **Primary Indicator**. If the country is already serving as the default on another structured format, you must disable it there before you can enable it here. A structured format can be primary for several countries, but a country can only have one primary structured format per structured format type—one for address structured format, one for telephone number structured format, and one for switch prefix structured format.

11. Click the Components tab and ensure that the inherited component(s) are correct, or create a new component(s). Typically, a non-North American switch prefix structured format has one or two components, and they are a **Component Type** of *Table Driven Drop Down*, with a *Switches-to-Telephone Numbers* relationship. Switch prefix

formats that employ typical North American functionality have two components and use the NPA-NXX tables. The critical aspects of a switch prefix component are:

- Its **Component Type** (*Table Driven Drop Down*).
- Its **Table Name** and **Column Name** on the General tab.
- Its **Table Name** and **Column Name** on the Table Driven Values tab.
- Its relationship to telephone number components.

If you are unsure of how to define any of these critical items, refer to "Create a Table Driven Drop Down component" on page 66.

12. If there are characters that users should be prevented from entering into a switch prefix, enter those numbers on the Ineligible Characters tab of the affected component.

13. Use the **View** button from the Structured Format Maintenance window to check that the components look and act the way you want them to in the structured format. You must enter sample data in the Data Entry Display tab to view it in the Built Structure Format tab.

14. Return to the Detail tab and enable the **Active** checkbox to activate the structured format.

15. Click **OK** to save the new format.

Note: When you complete the telephone number structured format, you must return to the switch prefix structured format to create the switches-to-telephone numbers relationship. That relationship must be created in the switch prefix structured format, but it cannot be done until after the telephone number structured format is completed.

Create a new telephone number structured format

The procedure for creating a telephone number structured format is explained below. Although the procedures in this chapter are not organized in mandatory sequential order, in the case of switch prefix structured formats and telephone number structured formats, you must always create the switch prefix format before the telephone number format.

Note: You do not need a telephone number structured format if the client does not inventory telephone numbers.

There are two ways to create a new telephone number structured format: New, or New-From. Deciding whether to use New or New-From depends on how similar the origin is to the structure your client requires. The following procedure explains how to create a new telephone number structured format using either New or New-From:

1. Start the MetaSolv Solution Utility Application.

2. Select **Options** from the main menu, then select **Structured Formats**>**Structured Formats**.

3. Either select a system-defined telephone number structured format and click **New-From**, or simply click **New**.

4. Select the type of structured format from the **Type** field, then enter a name and a description in the **Name** and **Description** fields. You will activate (by enabling the **Active** checkbox) the new structured format after you add components.

🚫 **Note:** The text in the **Description** field for a structured format, even on a system-defined structured format, can always be changed. This allows you to control what appears in data entry windows where structured format drop-downs appear.

5. Click **Apply**.

6. Click the MetaSolv Solution Processes tab and select the INFRA500NA and the PSR500 processes from the Available Active MetaSolv Solution Processes pane and click the **Assign** button to move the selections to the Associated processes pane. (If you used New-From, you inherit the associated processes from the original structured format.) The INFRA500NA and PSR500 processes are the only process that use a telephone number structured format.

7. Click the Countries tab and disassociate any countries inherited in a New-From that the client does not need by moving them from the Associated pane to the Available pane.

8. Associate the client's country by selecting it and moving it from Available Countries to Associated Countries. If the country you want to relate does not appear in the Available Countries list, it is probably because it is inactive. To activate the country, see "Activate a country" on page 38.

9. Click the Components tab and ensure that the inherited component(s) are correct, or create a new component(s). Typically, a non-North American telephone number structured format has two components: one component for the switch prefix portion of the telephone number, and a second component for the line number portion of the telephone number. The critical aspects of a telephone number component are:

   ▪ Its type (*Table Driven Drop Down* for the switch prefix component, and *Not Applicable* for the line number component).

   ▪ Its **Table Name** and **Column Name** on the General tab.

   ▪ Its **Table Name** and **Column Name** on the Table Driven Values tab.

   ▪ Its relationship to switch prefixes.

   If you are unsure of how to define any of these critical items, refer to "Create a Table Driven Drop Down component" on page 66 and "Add instances to the valid values table" on page 74.

10. Use the **View** button from the Structured Format Maintenance window to check that the components look and act the way you want them to in the structured format. You

must enter sample data in the Data Entry Display tab to be able to view it in the Built Structure Format tab.

11. If there are characters that users should be prevented from entering into a telephone number, enter those numbers on the Ineligible Characters tab of the affected component.

12. Return to the Detail tab and enable the **Active** checkbox to activate the structured format.

13. Enable the **Primary Indicator**. If the country is already serving as the default on another address structured format, you must disable it there before you can enable it here. A structured format can be primary for several countries, but a country can only have one primary structured format per structured format type—one for address structured format, one for telephone number structured format, and one for switch prefix structured format.

14. Click **OK** to save the new format.

> **Note:** When you complete the telephone number structured format, you must return to the switch prefix structured format to create the *Switches-to-telephone numbers* relationship. That relationship must be created in the switch prefix format, but it cannot be done until after the telephone number format is completed.

Best practices regarding switch prefix and telephone number structured formats

- There can be only one active switch prefix and one telephone number structured format per country.

- The only process that employs switch prefix structured formats is INFRA500NA, and the only processes that employ telephone number structured formats are INFRA500NA and PSR500.

- If there are numbers or characters that should never be entered into a component of a switch prefix or telephone number, be sure to enter those numbers on the Ineligible Characters tab of the component.

- You must relate processes, country, and components to the structured format before you can enable the **Active** checkbox, and you must enable the Active checkbox before you can enable the **Primary Indicator** for the country.

- You must create the switch prefix structured format first, then the telephone number structured format, then return to the switch prefix structured format to relate the switch prefix to the switch prefix component of the telephone number via the Switches-to-Telephone Numbers type of relationship. This relationship is required.

- If the switch prefix component of the telephone number structured format should be used to filter another component of the telephone number (such as NPAs filter NXXs for United States telephone numbers), then a Component Relationship must be built on the telephone number structured format. The illustration in Figure 25 shows the relationship that can exist between a switch prefix structured format and a telephone number structured format, and the relationship that can exist between the components

of a telephone number structured format. The graphic is based on a two-component type of switch prefix, such as NPA-NXX, and a three component telephone number format such as NPA-NXX-Line.
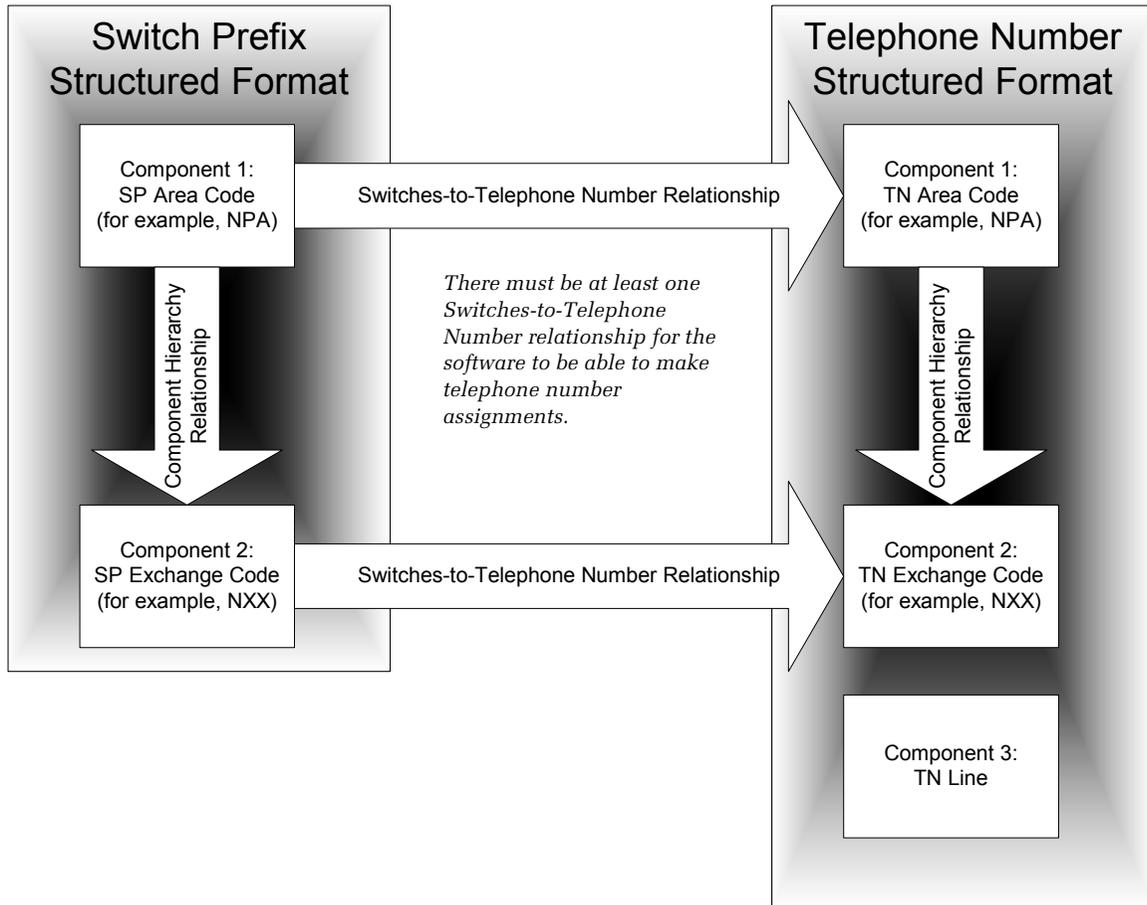

Figure 25: Switch Prefix and Telephone Number Structured Format Relationships

Create a component

There are many properties that define a component, and they vary depending on the component type. The four types of components:

- Geographical Area
- Table Driven Drop Down
- Valid Value Drop Down
- Not Applicable

Geographical Area and Valid Value components are only used in address structured formats. Table Driven Drop Down components are only used in switch prefix and telephone number structured formats. *Not Applicable* type components can be used in any type of structured format. A separate procedure for creating each type of component follows.

Viewing the structured format as you create components

As you create components, remember to use the **View** button on the Structured Format Maintenance window frequently to check that the component looks and acts the way it should. The **View** button opens the Preview Structured Format window, on which there are three tabs, as shown in Figure 26.
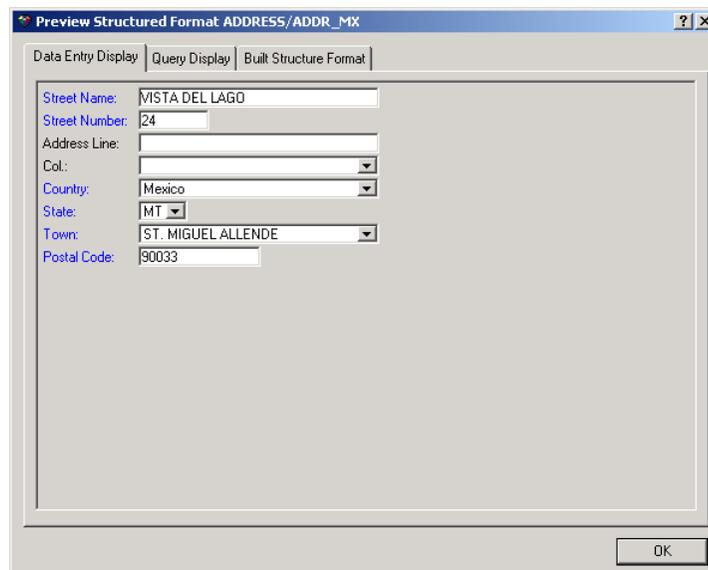
Figure 26: Preview Structured Format Window

If you fill in the fields of the Data Entry Display tab, you can see exactly how each component of the structured format appears in a data entry window, whether drop-downs are properly populated, and the tab sequence from field to field. On the Query Display tab, you can see which components of the structured format are included in a query, whether they are required, and whether they are drop-downs. On the Built Structure Format tab,

you see how the components of the structured format appear when built for display, including any indentation, spaces/characters following, and blank lines following.

Create a Geographical Area component

If the component you are creating is for an address structured format, and if it is the type of component you want to appear as a drop-down on a data entry display window with instances of a GAT populating the drop-down, then the component must have a **Component Type** of *Geographical Area*. Address structured formats are the only structured formats that use *Geographical Area* type components. Use the following procedure to create a *Geographic Area* type component.

To complete the General tab:

1. Open the structured format for which you are adding the new component. (You must create the structured format and assign a country to it before you can create components for it. See the section titled, "Create a new address structured format" on page 48 for instructions on creating a new structured format.)

2. Click the Components tab.

3. Click **New**. The General tab of the Structured Format Component window opens, a sample of which is shown in Figure 27.

This is the default for a new component. You will change it to Geographical Area as you define the component.
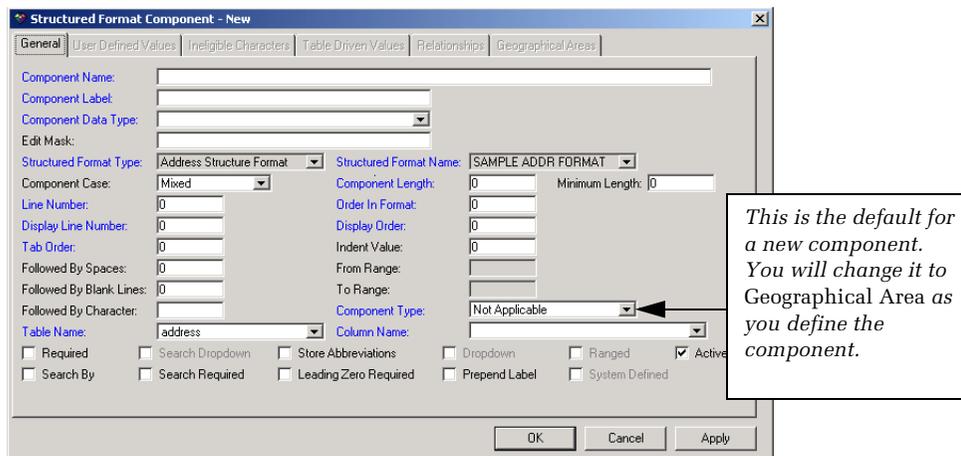
Figure 27: General Tab of a New Address Structured Format Component

4. Enter the **Component Name**. The **Component Name** is what appears in the list box on the Components tab of the structured format, and in drop-downs on query windows.

5. Enter the **Component Label**. The **Component Label** is what appears as the field name on windows where the component is employed.

6. Select the **Component Data Type**. It can be *VARCHAR* (numbers and letters), *NUMBER* (numbers only), or *CHAR* (letters only).

7. Enter an **Edit Mask** if applicable for the component you are creating. An edit mask allows you to dictate what types of characters and how many go in which positions of the field when a user is entering it. For example, if the first characters of the field must always be two letters and the next four characters must be numbers, you would enter an edit mask of *AA NNNN*. Edit masks are most often used for postal codes in address structured formats.

8. Select the **Component Case**. It can be *Mixed*, *Upper* or *Lower*. It is good practice to select *Upper* case for *VARCHAR* and *CHAR* data type components to simplify search strings.

9. Enter the maximum length that the component can be in the **Component Length** field. The value you enter here dictates the size of the field on data entry windows.

10. If appropriate for the component you are creating, enter a minimum length in the **Minimum Length** field.

11. Enter the values in the fields that control appearance on the data entry display and in the built structure. The fields that control appearance in the data entry display are: **Display Line Number**, **Display Order**, and **Tab Order**. The fields that control appearance in the built structure are: **Line Number**, **Order In Format**, **Indent Value**,

Followed By Spaces, **Followed By Blank Lines**, and **Followed By Character**. Refer to Figures 28 and 29 for a full explanation of how these fields work.

The effects of the values you enter for Display Line Number, Display Order, *and* Tab Order *can be seen on the Data Entry Display tab of the Preview window. To open the Preview window, close the Structured Format Component window and click the* View *button on the Structured Format Maintenance window.*

When Display Order *is* **1**, *the value is left-aligned with the other fields on the data entry display. If the* Display Order *is other than* **1**, *but it is the only component on the display line, it will not be left-aligned.*

The Display Line Number *for the* State *component is 5, meaning the* State *field appears on the fifth line of the display. The* Display Order *is 1, meaning that the* State *field is the first field that appears on the fifth line. If you wanted to put the* Town *field following the* State *field on the same line, the* Town *component would have a* Display Line Number *of 5, and a* Display Order *of 2.*

The Tab Order *number defines tab sequence relative to the other components'* Tab Order *numbers. It is good practice to enter tab order numbers at least ten counts apart so that you can more easily change them if necessary after you have completed creating all the components. For example, suppose* Street Name *was* Tab Order 1, *and* Street Number *was* Tab Order 2, *and* State *was* Tab Order 3. *However, you decide it is actually easier for users to tab to* State *first, then tab to* Street Name, *then* Street Number. *Because you did not leave any relative space between the* Tab Order *numbers, you will have to change all three components'* Tab Order *numbers to make* State *the first field in the tab order. Had you instead made* Street Name's Tab Order 10, *S*treet Number's Tab Order 20, *and* State's Tab Order 30, *you could have simply changed* State's Tab Order *to 5 to make it the first field in the* Tab Order.

Figure 28: Fields that Control Appearance on the Data Entry Display

The effects of the values you enter for Line Number, Order in Format, *and* Indent Value *can be seen on the Built Structure Format tab of the Preview window. To open the Preview window, close the Structured Format Component window and click the* View *button on the Structured Format Maintenance window.*

The effects of the values you enter for Followed By Spaces, Followed By Blank Lines, *and* Followed By Character *can be seen on the Built Structure Format tab of the Preview window, provided you enter sample data in the Data Entry Display tab first. Note that any spaces specified in the* Followed By Spaces *field will fall after any character specified in the* Followed By Character *field. Note also that you cannot specify a negative indent value in the* Indent Value *field.*
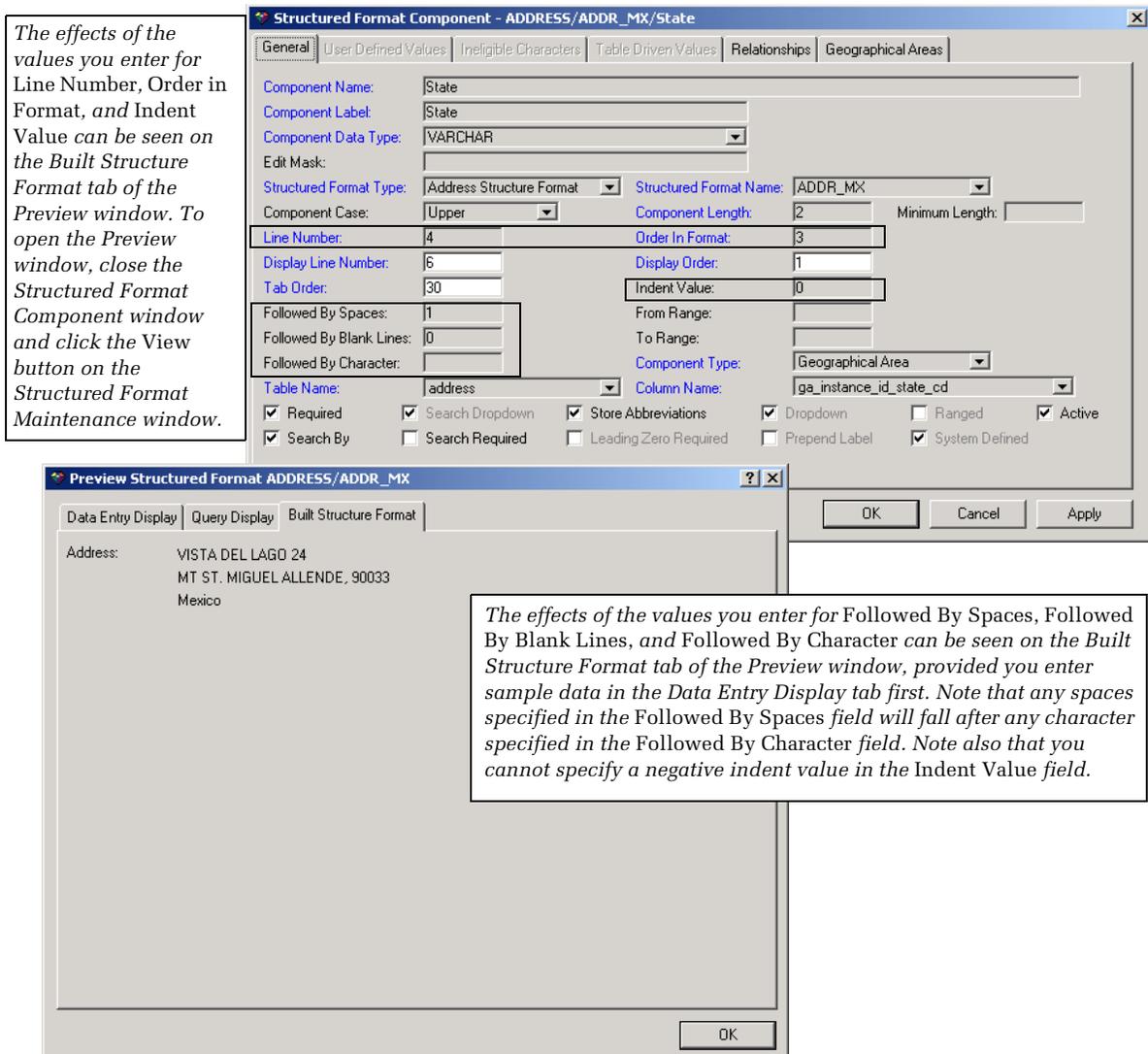
Figure 29: Fields that Control Appearance on the Built Structure

12. Select *Geographical Area* as the **Component Type**. You select this type of component for data entry fields that store their values in the address table. For that reason, the **Table Name** field defaults to *address*.

13. A *Geographical Area* **Component Type** is always a drop-down field, and the drop-down is always populated with the instances of a particular GAT.

14. Select the **Column Name** that identifies where the component should be stored in the *address* table. Select the obvious and appropriate **Column Name** for the component you are creating. For example, if you are creating a component for CITY, choose the *ga_instance_city* column name. However, what is appropriate is not always obvious.

For example, if you are creating a component for PROVINCE, and province is to the country the same as STATE is to the United States, you should chose *ga_instance_state* as the column name. The rule to follow is that if a Geographical Area-type component acts like state or city does in the United States, use the *ga_instance_city* and *ga_instance_state* column names; if the component acts like something new or different, use one of the four *ga_instance_id_addr_gat_comp* column names. There are a total of 27 column names to chose from, as follows:

Column Name	Use For
addr_comp1 *through* comp16	Miscellaneous address line components
ga_instance_id_addr_gat_comp1 *through* comp4	Geographical Area type components other than CITY, COUNTRY, and STATE
addr_format_type	Reserved for use by the regulated ordering module
ga_instance_id_country	Geographical Area type component populated by instances of GAT COUNTRY
ga_instance_id_state	Geographical Area type component populated by instances of GAT STATE or other GATs that are like STATE, such as PROVINCE
ga_instance_id_city	Geographical Area type component populated by instances of GAT CITY or other GATs that are like CITY, such as VILLAGE
street_nbr	Address component for street number
street_nm	Address component for street name
street_suff	Address component for street suffix (thoroughfare)

15. Enable the **Required** checkbox if this component should be a required field (the field label displays in blue text) on data entry windows.

16. Enable the **Search By** checkbox if this component should be included in query windows that include the structured format.

17. Enable the **Search Dropdown** checkbox if this component should be a drop-down on the query window.

18. Enable the **Search Required** checkbox if this component should be a required parameter in a query.

19. Enable the **Store Abbreviations** checkbox if this component should be stored by its abbreviation rather than its full wording. For example, if you want to store abbreviations for the component STATE, then TEXAS would be stored as TX. This assumes that an abbreviation is required when entering instances of the GAT.

20. Enable the **Leading Zero Required** if this component should be front-filled with zeros. For example, if the field is five characters long, and the value the user is entering is *1*, they must enter it as *00001* if this checkbox is enabled.

21. Enable the **Dropdown** checkbox if this component should be a drop-down type of field. This checkbox automatically enables when the value in the **Component Type** field is *Table Driven Drop Down*, *Geographical Area*, or *Valid Value Drop Down*.

22. Enable the **Prepend Label** checkbox if this component should have its label added to the front of its data value in its built format. For example, if the **Component Name** is *Building Number* and the **Component Label** is *Building*, then enabling the **Prepend Label** checkbox prints the word *Building* in front of the value entered for **Building**. Hence, if the user enters *12* in the **Building** field of a data entry window, the built structure displays *Building 12*.

23. Enable the **Active** checkbox if this component is new and is ready for use in the structured format. A component can be deleted from a structured format before it is used ("used" means data has been written to the table and column designated by this component); it cannot be deleted after it is used. However, it can be inactivated. For example, if a component called *Building* was set up for an address structured format, but it was later deemed that capturing building as a separate component was differentiating the address into too much granularity, the *Building* component could be deactivated by removing the checkmark from the **Active** checkbox.

To complete the Geographical Area tab:

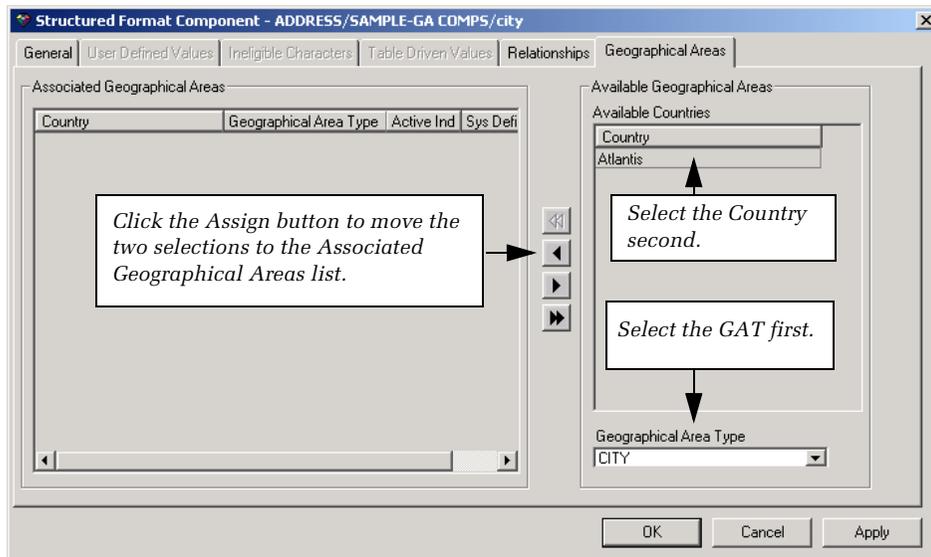1. Click the Geographical Area tab to open it. An example of the tab is shown in Figure 30.

Figure 30: Geographical Area Tab on Structured Format Component Window

2. Select the GAT on which the component is based from the **Geographical Area Type** drop-down.

3. Select the **Country** from the Available Countries list.

4. Click the **Assign** button to move the two selections to the Associated Geographical Areas list.

5. Click **Apply**.

To complete the Relationships tab:

If there is a relationship between two geographical area components, that relationship is defined from the top down on the Relationships tab. For example, if you have a STATE component and a CITY component, STATE has a parent relationship to CITY. That relationship must be defined on the Relationships tab of the STATE component because STATE is the highest (top) level in the relationship. Note that the relationships between geographical area components must be identical in hierarchy to the relationships in the GAT hierarchy.

1. Open the Component that is the top level in the relationship you are creating.

2. Click the Relationships tab to open it. An example of the tab is shown in Figure 31.
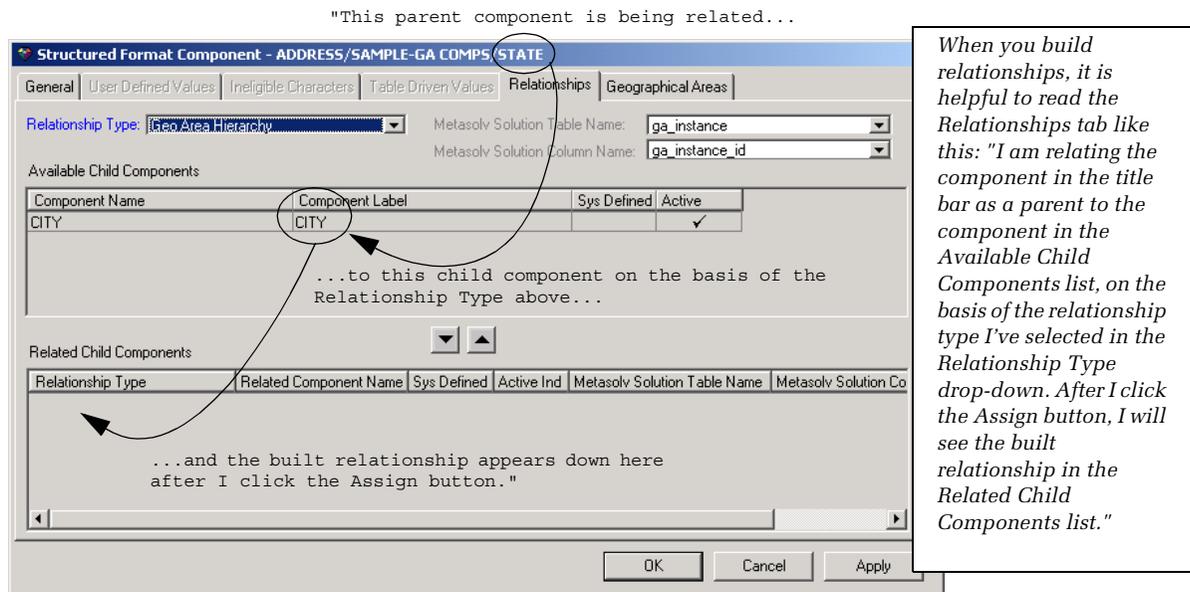
"This parent component is being related...

When you build relationships, it is helpful to read the Relationships tab like this: "I am relating the component in the title bar as a parent to the component in the Available Child Components list, on the basis of the relationship type I've selected in the Relationship Type drop-down. After I click the Assign button, I will see the built relationship in the Related Child Components list."

...to this child component on the basis of the Relationship Type above...

...and the built relationship appears down here after I click the Assign button."

Figure 31: Relationships Tab on Structured Format Component Window

3. Select the **Relationship Type** as *Geo Area Hierarchy*.

4. Select the child component from the Available Child Components list.

5. Click the **Assign button** to build the relationship. The built relationship is reflected in the Related Child Components list. Whenever you see an item in the Related Child Components list, there is an existing relationship.

6. Click **OK** to save and close the window.

Create a Table Driven Drop Down component

If the component you are creating is for a switch prefix or telephone number structured format, and if you want it to appear as a drop-down on a data entry window with instances of switch prefixes populating the drop-down, then the component must have a **Component Type** of *Table Driven Drop Down*. Use the following procedure to create a *Table Driven Drop Down* component.

To complete the General tab:

1. Open the structured format for which you are adding the new component. (You must create the structured format and assign a country to it before you can create components for it. (See the section titled, "Create a new switch prefix structured format" on page 52 or "Create a new telephone number structured format" on page 54 for instructions on creating a new structured format.)

2. Click the Components tab.

3. Click **New**. The General tab of the Structured Format Component window opens, a sample of which is shown in Figure 32.

Figure 32: General Tab of a New Switch Prefix Structured Format Component

4. Enter the **Component Name**. The **Component Name** is what appears in the list box on the Components tab of the structured format, and in drop-downs on query windows.

5. Enter the **Component Label**. The **Component Label** is what appears as the field name on windows where the component is employed.

6. Select the **Component Data Type**. For a Table Driven Drop Down type of component, the **Component Data Type** is typically *NUMBER*.

7. If applicable, enter an **Edit Mask** for the component you are creating. An edit mask allows you to dictate what types of characters and how many go in which positions of the field when a user is entering it. For example, if the first characters of the field must always be two letters and the next four characters must be numbers, you would enter an edit mask of *AA NNNN*.

8. Enter the maximum length that the component can be in the **Component Length** field. The value you enter here dictates the size of the field on data entry windows.

9. If appropriate for the component you are creating, enter a minimum length in the **Minimum Length** field.

10. Enter the values in the fields that control appearance on the data entry display and the built structure. For assistance with these fields, refer to Figures 28 and 29 in "Create a Geographical Area component" on page 59.

11. Enter values in the **From Range** and **To Range** fields to specify a finite range of numbers that can be entered into this component. These range fields are intended primarily for line range on telephone numbers, although there are other components that might require ranges. Ranges can only be entered when the **Component Data Type** is *NUMBER* or *VARCHAR*.

12. Select *Table Driven Drop Down* as the **Component Type**. You select this type of component for data entry fields that will both store and retrieve their values from tables related to switch prefixes and telephone numbers. When you specify the **Component Type** as *Table Driven Drop Down*, you are also specifying that the component is a drop-down field, and that the drop-down is populated with instances from a particular switch prefix table and column.

13. Select the **Table Name**. If you are creating a component for a structured format that does not retrieve or store its values in the NPA-NXX tables, then select *ni_nbr_itn*. If the component does store values in the NPA-NXX tables, select the *npa_nxx* table.

14. Select the **Column Name** that identifies where you want the component stored in the table. Select the next available column name if the component is being stored in the *ni_nbr_itn* table. Select *npa* or *nxx* if you want the component stored in the *npa_nxx* table.

15. Enable checkboxes at the bottom of the tab appropriately for the component you are creating. For definitions of those checkboxes, see "Create a Geographical Area component" on page 59.

To complete the Table Driven Values tab:

1. Click the Table Driven Values tab to open it. An example of the tab is shown in Figure 33.
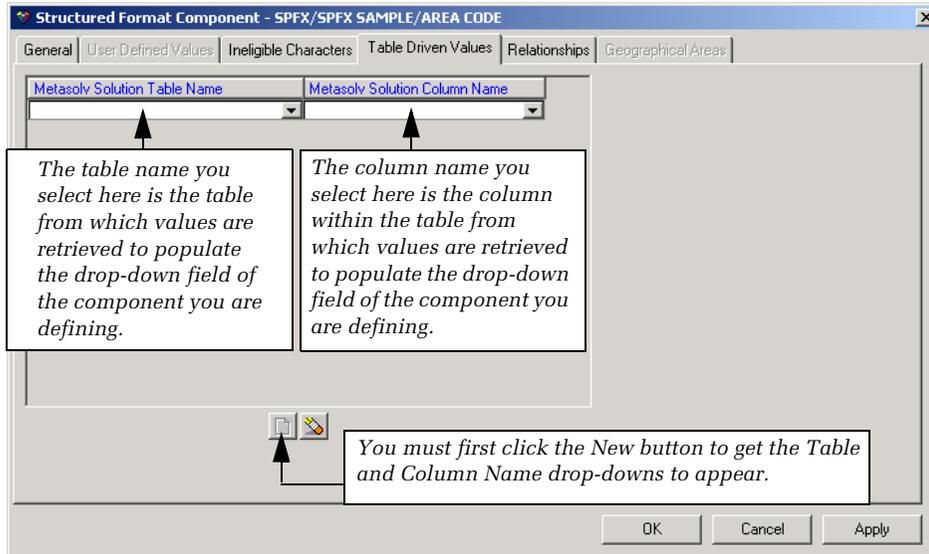
Figure 33: Geographical Area Tab on Structured Format Component Window

2. Click **New** to open the **MetaSolv Solution Table Name** and **MetaSolv Solution Column Name** drop-downs.

3. Select the appropriate **MetaSolv Solution Table Name** and the **MetaSolv Solution Column Name** from the drop-downs. Making the appropriate selections here requires a fundamental understanding of the MetaSolv Solution data model. The selections you make here determine what appears in the component drop-down on the data entry display window.

4. Click the **Apply** button to save your selections.

To complete the Relationships tab:

If there is a *Switches-to-telephone Numbers* or a *Component Hierarchy* relationship between two table driven drop down components, that relationship is defined on the Relationships tab of the highest level component (top-down). For example, if you have an AREA CODE component on a switch prefix structured format that needs to be associated with an AREA CODE component on a telephone number structured format by way of the *Switches-to-Telephone Numbers* relationship type, then that relationship must be defined on the Relationship tab of the switch prefix component.

The switch prefix AREA CODE component is the top (parent) and the telephone number AREA CODE is the child in the *Switches-to-Telephone Numbers* relationship. If an AREA CODE on either a telephone number or switch prefix structured format needs to be associated with an EXCHANGE CODE on the same structured format, that is a *Component Hierarchy* type relationship. That type of relationship is also defined on the Relationships tab of the highest level (parent) component in the relationship.

1. Open the Component that is the top-level in the relationship you are creating.

2. Click the Relationships tab to open it. An example of the tab is shown in Figure 31 "Relationships Tab on Structured Format Component Window" on page 66.
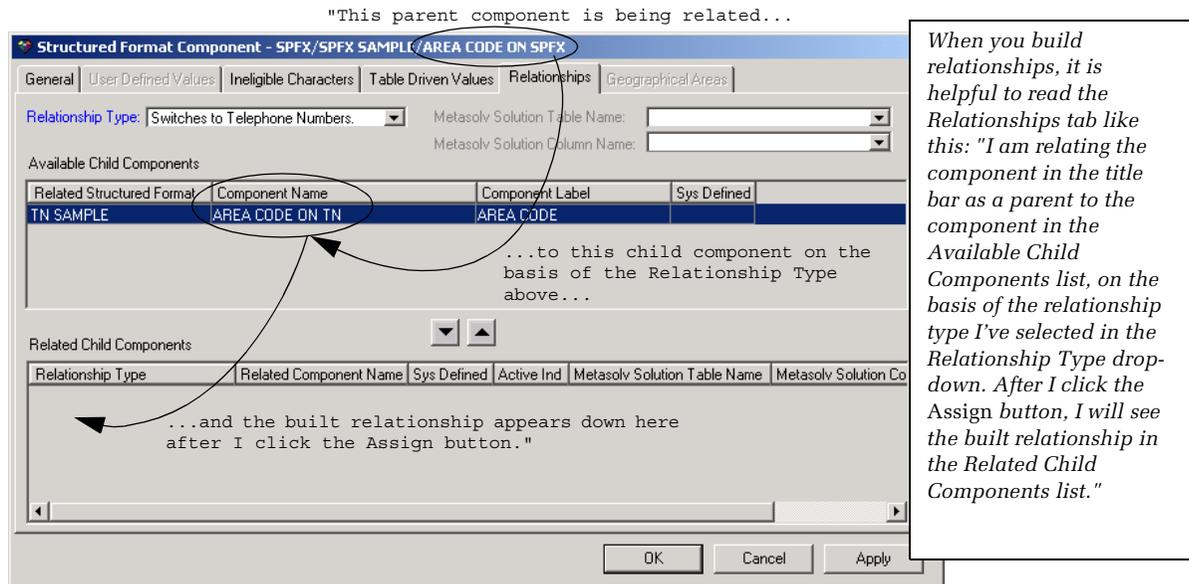

Figure 34: Relationships Tab on Structured Format Component Window

3. Select the **Relationship Type**. Refer to Figure 25 "Switch Prefix and Telephone Number Structured Format Relationships" on page 57 for an understanding of the difference between *Component Hierarchy* and *Switches-to-Telephone Numbers* relationship types.

4. Select the child component from the Available Child Components list. (This list does not populate until you select the **Relationship Type**.)

5. Click the **Assign button** to build the relationship. The built relationship is reflected in the Related Child Components list. Whenever you see an item in the Related Child Components list, there is an existing relationship.

6. Click **Apply** to save the changes.

Create a Valid Value Drop Down component

Valid values are pre-defined for thoroughfares (*Street*, *Avenue*, *Blvd.*, and so forth) and compass points (*N., E., W., S, SW.*, and so forth). Users can also add to the valid values table through both the MetaSolv Utility and the core product. If the component you are creating is for an address structured format, and if you want the component to appear as a drop-down on a data entry display window populated with instances from the valid values table, then the component must have a **Component Type** of *Valid Value Drop Down*. Use the following procedure to create a *Valid Value Drop Down* type component.

To complete the General tab:

1. Open the structured format for which you are adding the new component. (You must create the structured format and assign a country to it before you can create components for it. See the section titled, "Create a new address structured format" on page 48 for instructions on creating a new structured format.)

2. Click the Components tab.

3. Click **New**. The General tab of the Structured Format Component window opens, a sample of which is shown in Figure 35.

Figure 35: General Tab of a New Address Structured Format Component

4. Enter the **Component Name**. The **Component Name** is what appears in the list box on the Components tab of the structured format, and in drop-downs on query windows.

5. Enter the **Component Label**. The **Component Label** is what appears as the field name on windows where the component is employed.

6. Select the **Component Data Type**. For a *Valid Value Drop-Down* type of component, the **Component Data Type** is typically *VARCHAR*.

7. Enter the maximum length that the component can be in the **Component Length** field. The value you enter here dictates the size of the field on data entry windows.

8. If appropriate for the component you are creating, enter a minimum length in the **Minimum Length** field.

9. Enter the values in the fields that control appearance on the data entry display and in the built structure. For assistance with these fields, refer to "Create a Geographical Area component" on page 59.

10. Select *Valid Values Drop Down* as the **Component Type**. You select this type of component for data entry fields that store their values in the address table, and that populate their drop-downs from the valid value table.

11. Select an appropriate **Column Name**. For example, if you are setting up a component for THOROUGHFARE, the appropriate column name would be *street_suf.* If you are setting up a component for compass direction associated with a street number or name, the appropriate column name would be *addr_comp1* (or the next available number, such as *addr_comp2*, or *addr_comp3*).

12. Enable checkboxes at the bottom of the tab appropriately for the component you are creating. For definitions of those checkboxes, see "Create a Geographical Area component" on page 59.

To complete the User Defined Values tab:

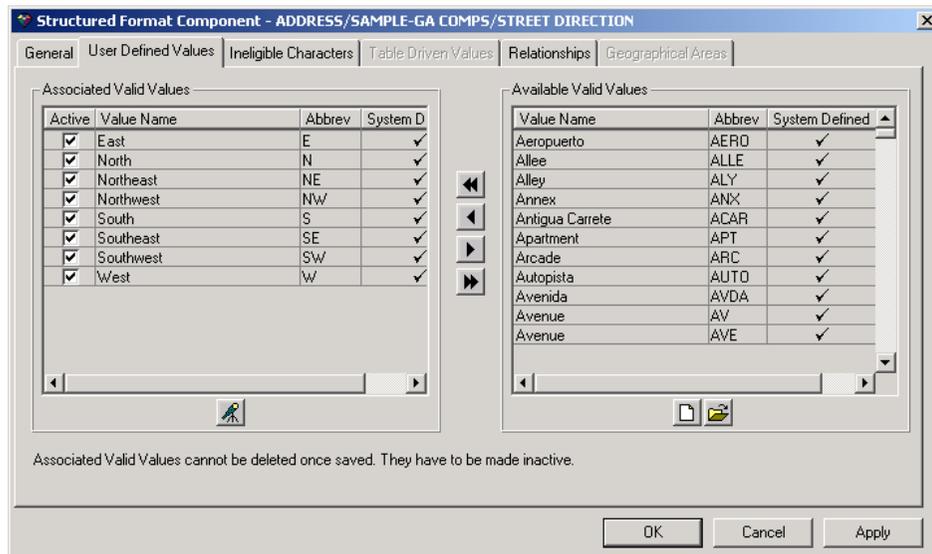1. Click the User Defined Values tab to open it. An example of the tab is shown in Figure 36.

Figure 36: User Defined Values Tab on Structured Format Component Window

2. Select the valid values you want to appear in the component's drop-down from the Available Valid Values list. You can use **Shift+click** and **Ctrl+click** to make contiguous and non-contiguous selections.

3. Click the **Assign** button to move the selections to the Associated Valid Values list.

4. Click the **Apply** button to save your selections.

> **Note:** As indicated on the window, the only way to remove a valid value after it has been associated and saved is to inactivate it. To inactivate, simply remove the checkmark in the valid value's **Active** checkbox.

Relate a valid value to a provider

Valid values can be associated with a specific provider using the provider's Interexchange Customer Service Center (ICSC) code. For example, if a client sends ASRs to a provider who only accepts three-character street suffixes on service location addresses (they accept *AVE* but reject *AV*) then that provider's ICSC can be associated with the three-character street suffixes, thus ensuring ASRs are not entered with values that will be rejected by the provider. You associate the accepted valid values to the ICSC on the User Defined Values tab. This functionality is only relevant to the OBF_SRVC_ADDR structured format.

1. Select the valid values from the Associated Valid Values list that you want to associate with a specific ICSC. You can use **Shift+click** and **Ctrl+click** to make contiguous and non-contiguous selections.

2. Click the **preview** button to open the Associate Providers with Structured Format Component Valid Values window, shown in Figure 37.
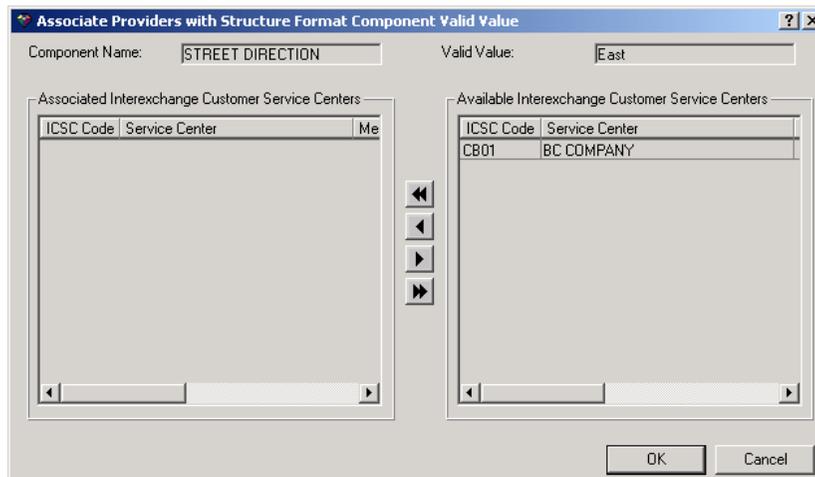

Figure 37: Associate Providers with Structured Format Component Valid Value

3. Click **OK** to close the window and save the associations.

🛈 **Note:** The procedure above can also be done within Infrastructure, once the component is created. To do the procedure from Infrastructure, click **List>Structured Formats>Components**, then search to the component for which you want to relate valid values. Open the component, click the User Defined Values tab, then proceed as described above, starting with step 1.

Add instances to the valid values table

To add instances to the valid values table, you can go through Infrastructure in the core software, or you can use the MetaSolv Utility. To add instances through Infrastructure, select **Infrastructure>List>Structured Formats>Valid Values**, then right-click and select **New**. To add instances through the MetaSolv Utility, select **Options>Structured Formats>Valid Values**, then right-click and select **New**.

Create a Not Applicable (plain) component

If the component you are creating is an editable field rather than a drop-down that retrieves its values from a table, then the component must have a **Component Type** of *Not Applicable.* Address and telephone number structured formats are the only structured formats that use *Not Applicable* type components. Use the following procedure to create a *Not Applicable* type component.

To complete the General tab:

1. Open the structured format for which you are adding the new component. (You must create the structured format and assign a country to it before you can create components for it. See the section titled, "Create a new address structured format" on page 48 for instructions on creating a new structured format.)

2. Click the Components tab.

3. Click **New**. The General tab of the Structured Format Component window opens.
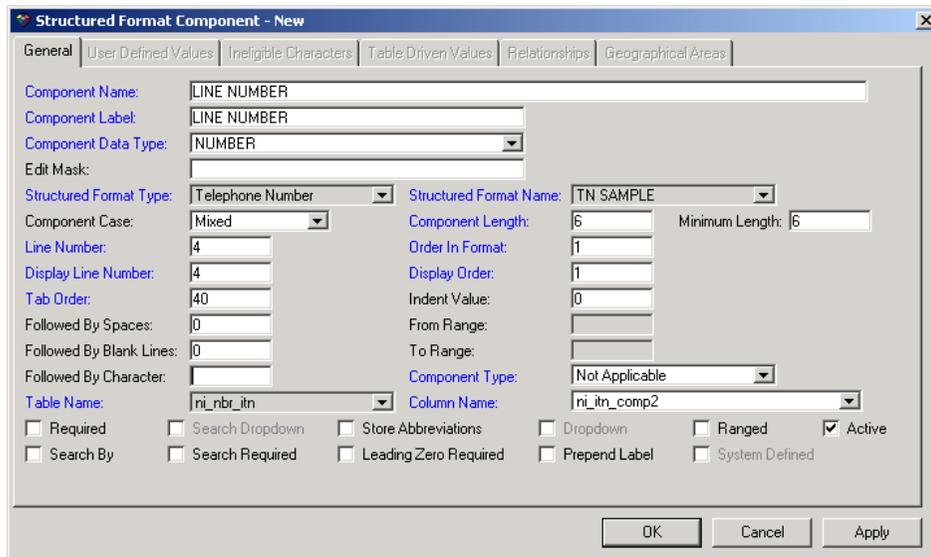
Figure 38: General Tab of a New Address Structured Format Component

4. Enter the **Component Name**. The **Component Name** is what appears in the list box on the Components tab of the structured format, and in drop-downs on query windows.

5. Enter the **Component Label**. The **Component Label** is what appears as the field name on windows where the component is employed.

6. Select the **Component Data Type**. It can be *VARCHAR* (numbers and letters), *NUMBER* (numbers only), or *CHAR* (letters only).

7. Enter an **Edit Mask** if applicable for the component you are creating. An edit mask allows you to define what types of characters and how many go in which positions of the field when the user is entering it. For example, if the first characters of the field must always be two letters and the next four characters must be numbers, you would enter an edit mask of *AA NNNN*.

8. Select the **Component Case**. It can be *Mixed*, *Upper* or *Lower*. It is good practice to select *Upper* case for *VARCHAR* and *CHAR* data type components to simplify search strings.

9. Enter the maximum length that the component can be in the **Component Length** field. The value you enter here dictates the size of the field on data entry windows.

10. If appropriate for the component you are creating, enter a minimum length in the **Minimum Length** field.

11. Enter the values in the fields that control appearance on the data entry display and in the built structure. The fields that control appearance in the data entry display are: **Display Line Number**, **Display Order**, and **Tab Order**. The fields that control appearance in the built structure are: **Line Number**, **Order In Format**, **Indent Value**,

Followed By Spaces, **Followed By Blank Lines**, and **Followed By Character**. Refer to Figures 28 and 29 for a full explanation of how these fields work.

12. Enter values in the **From Range** and **To Range** fields to specify a finite range of numbers that can be entered into this component. These range fields are intended primarily for line range on telephone numbers, although there are other components that might require ranges. Ranges can only be entered when the **Component Data Type** is *NUMBER* or *VARCHAR*.

13. Select the *Not Applicable* **Component Type**. You select this type of component for data entry fields that entered and editable by the user (as opposed to data entry fields that are drop-down populated by table values).

14. Select the appropriate **Table Name**. The **Table Name** identifies where the value the user enters is stored.

15. Select the appropriate **Column Name**. The **Column Name** identifies which column in the table stores the component's value when the user enters it.

16. Enable the **Required** checkbox if this component should be a required field (the field label displays in blue text) on data entry windows.

17. Enable the **Search By** checkbox if this component should be included in query windows that include the structured format.

18. Enable the **Search Dropdown** checkbox if this component should be a drop-down on the query window.

19. Enable the **Search Required** checkbox if this component should be a required parameter in a query.

20. Enable the **Store Abbreviations** checkbox if this component should be stored by its abbreviation rather than its full wording.

21. Enable the **Leading Zero Required** if this component should be front-filled with zeros. For example, if the field is five characters long, and the value the user is entering is *1*, she must enter it as *00001* if this checkbox is enabled.

22. Enable the **Dropdown** checkbox if this component should be drop-down type of field. This checkbox automatically enables for *Table driven*, *Geographical Area*, and *Valid Value Drop Down* **Component Types**.

23. Enable the **Prepend Label** checkbox if this component should have its label added to the front of its data value in its built format. For example, if the **Component Name** was *Building Number* and the **Component Label** was *Building*, enabling the **Prepend Label** checkbox would print the word *Building* in front of the value entered for **Building**. If the user entered *12* in the **Building** field, the built structure would read *Building 12*.

24. Enable the **Ranged** checkbox if this component should be ranged between the numbers specified in the **From Range** and **To Range** values. The component must have a **Component Data Type** of *NUMBER* or *VARCHAR* to be eligible for ranging.

25. Enable the **Active** checkbox if this component is new and is ready for use in the structured format. A component can be deleted from a structured format before it is used ("used" means data has been written to the table and column designated by this component); it cannot be deleted after it is used. However, it can be inactivated. For example, if a component called *Building* was set up for an address structured format, but it was later deemed that capturing building as a separate component was differentiating the address into too much granularity, the *Building* component can be deactivated by removing the checkmark from the **Active** checkbox.

To complete the Ineligible Characters tab:

If there are certain characters that users should be prevented from entering into the field, you identify those characters on the Ineligible Characters tab as follows:

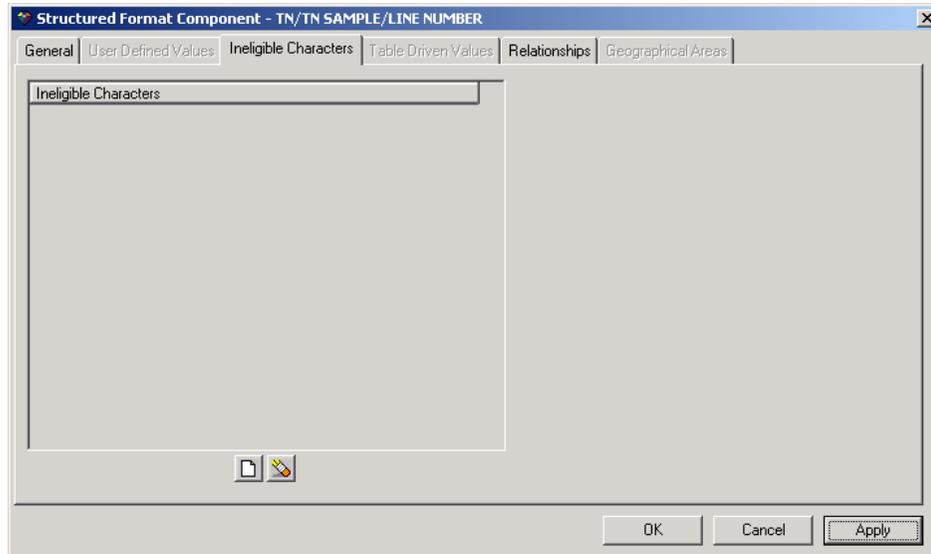1. Click the Ineligible Characters tab to open it. An example of the tab is shown in Figure 39.

Figure 39: Geographical Area Tab on Structured Format Component Window

2. Click **New** and enter the ineligible character. If there are other characters, repeat this step until all those characters are entered.

3. Click **OK** to save the ineligible characters list.

To complete the Relationships tab:

If there is a relationship between this component and another component, you can define that relationship on the Relationships tab.

1. Open the Component that is the top level in the relationship you are creating.

2. Click the Relationships tab to open it.

3. Select the **Relationship Type**.

4. Select the child component from the Available Child Components list.

5. Click the Assign button to build the relationship. The built relationship is reflected in the Related Child Components list.

List of best practices for creating structured formats

Best practices regarding GATs

- Make sure you understand the GAT hierarchy for any country for which you are implementing structured formats. You must build the hierarchy for any country other than the United States and Brazil—those are the only two countries that are installed with system-defined GAT hierarchies. To build a GAT hierarchy, you must relate parent GATs to child GATs.

- Confirm that the country's activation settings (**Telephone Number Code**, **North American Functionality**, **Three Character Country Code**, and **Active Indicator**) are absolutely correct. With the exception of the **Active Indicator**, you cannot change these settings after entering data without inactivating the country, then creating a new country, and any data entered under the old country cannot be migrated to the new country.

Best practices regarding changing structured format defaults

- When changing the **Primary Indicator** for a country, you must disable it on the existing structured format before you can enable it on a different structured format.

- If you are creating a new structured format, and it is the only one the customer will use for that type of format, be sure to enable the **Primary Indicator**.

- Always make sure that the **Primary Indicator** is enabled for the relevant country on the default structured format, for each structured format type and country that the client uses. For example, if the client uses different address structured formats for France, Netherlands, and Germany, make sure that France, Netherlands, and Germany are checkmarked as **Primary** on each country's default address format. Never omit the Primary Indicator for a country that actively employs structured formats!

Best practices regarding address structured formats

- There are circumstances in which a client might need to employ multiple structured formats to accommodate multiple address formats. If the client elects to employ multiple structured formats, advise them of the complexities and possible performance degradation that kind of implementation might impose on querying activities. For clients who deal with multiple countries, the recommended approach to resolving the differing address formats is to define one structured format that is flexible and open enough to accommodate all the required countries' address formats. However, the software does support different formats for different countries.

- Make every effort to define address formats that can endure through all foreseeable business needs, such as expanding business to new countries. It is not feasible to change to a new address structured format after data has been entered using the old structured format. There is no means of connecting the old data to the new data without a custom conversion effort.

- Remember to enable the **Primary Indicator** for the country on the structured format that should be the default for the country.

- Once structured formats are used in the software and data is stored in the database according to those formats, they cannot be deleted. They can be deactivated, but they cannot be deleted. All data based on a deactivated structured format is preserved, but it cannot be migrated to a new format without a custom conversion effort. A deactivated structured format no longer appears as an option in a structured format drop-down, but it is still present within the software for the purpose of reviewing historical data that was stored using it.

Best practices regarding switch prefix and telephone number structured formats

- There can be only one active switch prefix and one telephone number structured format per country.
- The only process that employs switch prefix structured formats is INFRA500NA, and the only processes that employ telephone number structured formats are INFRA500NA and PSR500.
- Once a switch prefix or telephone number structured format is associated with a country that uses North American Functionality, those structured formats cannot be associated with a countries that do not use North American Functionality. Therefore, you should not create a switch prefix or telephone number structured format using New-From and try to associate it to a country that does not have the same North American Functionality setting as the country associated with the structured format used as the origin in the New-From.
- If there are numbers or characters that should never be entered into a component of a switch prefix or telephone number, be sure to enter those numbers on the Ineligible Characters tab of the component.
- You must relate processes, country, and components to the structured format before you can enable the **Active** checkbox, and you must enable the Active checkbox before you can enable the **Primary Indicator** for the country.
- You must create the switch prefix structured format first, then the telephone number structured format, then return to the switch prefix structured format to relate the switch prefix to the switch prefix component of the telephone number via the *Switches-to-Telephone Numbers* type of relationship. This relationship is required.
- If the switch prefix component of the telephone number structured format should be used to filter another component of the telephone number (such as NPAs filter NXXs for United States telephone numbers), then a component relationship must be built on the telephone number structured format. The illustration in Figure 25 on page 57 shows the type of relationship that can exist between a switch prefix structured format and a telephone number structured format, and the relationship that can exist between the components of a telephone number structured format. The graphic is based on a two-component type of switch prefix, such as NPA-NXX, and a three component telephone number format such as NPA-NXX-Line.

Using Structured Formats

This chapter is about using structured formats on a daily basis as data is entered into the software. It is intended primarily for users of the MetaSolv Solution, however implementers can also benefit from reading the information in this chapter. If you fully understand how structured formats are used, you are better able to understand how to set them up correctly during implementation. For example, if you work with the users of the affected windows to learn the order in which they prefer to enter field data, you then know the tab order in which to sequence the components of a structured format.

Using address structured formats

Using address structured formats is simple and straightforward: on the windows where structured formats are employed, users see drop-downs for **Country** and **Format**. Ideally, user preferences have been defined that cause these drop-downs to default to the appropriate selection for the user, thus allowing them to skip having to make a selection. However, if the implementation supports multiple countries and address formats, then the user needs to make appropriate selections from the **Country** and **Format** drop-downs.
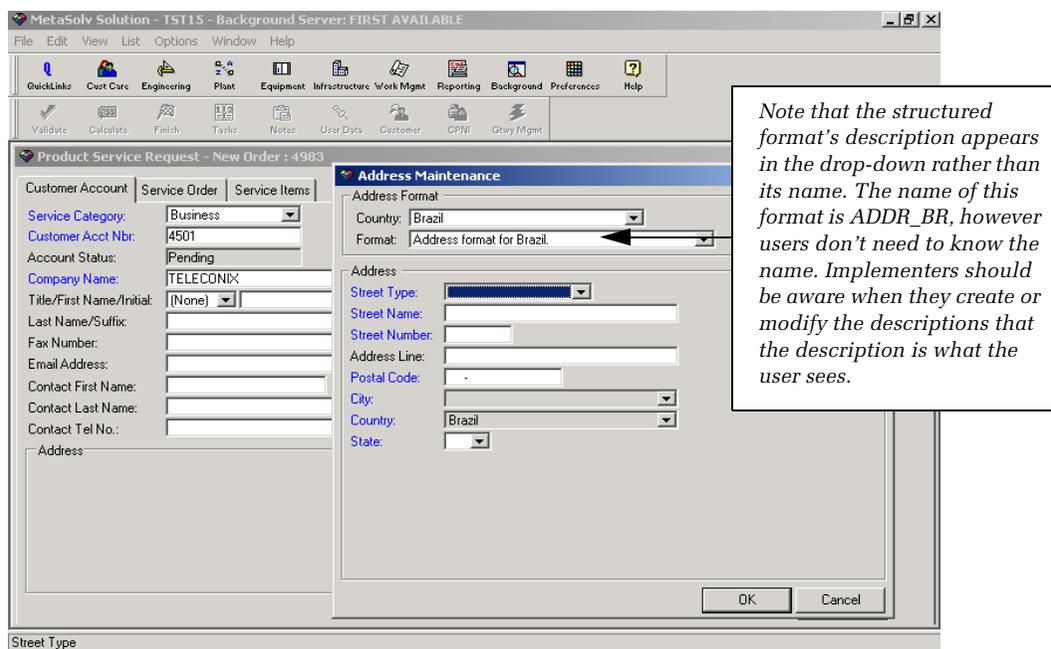

Note that the structured format's description appears in the drop-down rather than its name. The name of this format is ADDR_BR, however users don't need to know the name. Implementers should be aware when they create or modify the descriptions that the description is what the user sees.

Figure 40: Address Structured Format Driving Address Entry in PSR

Information subject to change without notice.

In Figure 40, you see one example of an address structured format being employed in a PSR window. In this example, the **Country** is *Brazil* and the **Format** is *Address format for Brazil.* If preferences were set for the country to default to Brazil and the address structured format to default to ADDR_BR, then *Brazil* and *Address format for Brazil* would have automatically appeared in the two fields when the user opened the Address Maintenance window from the PSR order. If the preferences were not set, then the user would have to select the **Country**, then select the **Format**. The countries from which the user could select depends on the countries that are activated for the implmentation, and the formats the user could select depend on the address structured formats that are associated with the selected country.
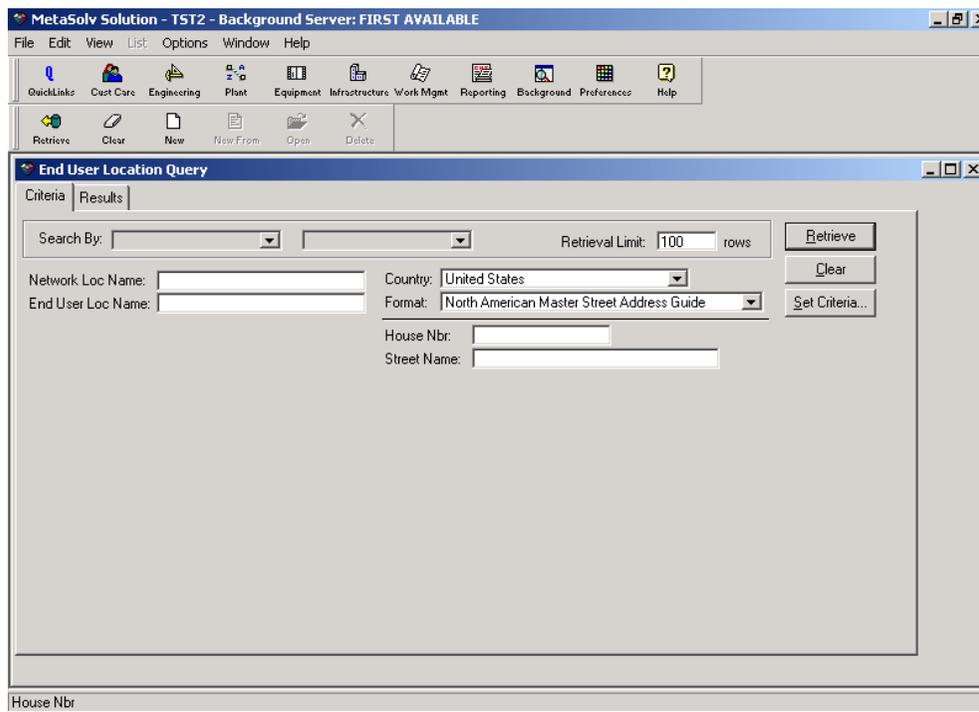

Figure 41: Address Structured Format Driving Query for End User Location

In Figure 41, you see an example of an address structured format being employed in a query window. As explained above, if preferences are set, the **Country** and **Format** fields would default. The other fields of the address format that appear on the query window depend on how the components of the structured format were defined.

There are many more windows that employ address structured formats, and the examples in Figures 40 and 41 are exemplary of how all of them work. Understanding how users see and complete structured formats in a data entry window should factor heavily into how you define them during implementation. Understanding when and how users query for data that includes the fields of a structured format also helps you determine how to define the required and query properties of the components in a structured format.

Using switch prefix structured formats

Using switch prefix structured formats is as straightforward as using address formats. On the windows where switch prefixes are employed, users simply select the appropriate values from the **Format** and **Country** drop-downs. Ideally, user preferences for country and switch prefix structured formats are defined so that these drop-downs default to the appropriate selections for the user. However, if the client supports multiple countries, users will need to make appropriate selections from the **Country** and **Format** drop-downs. The following windows are a few examples of windows in which users encounter **Country** and **Format** fields:
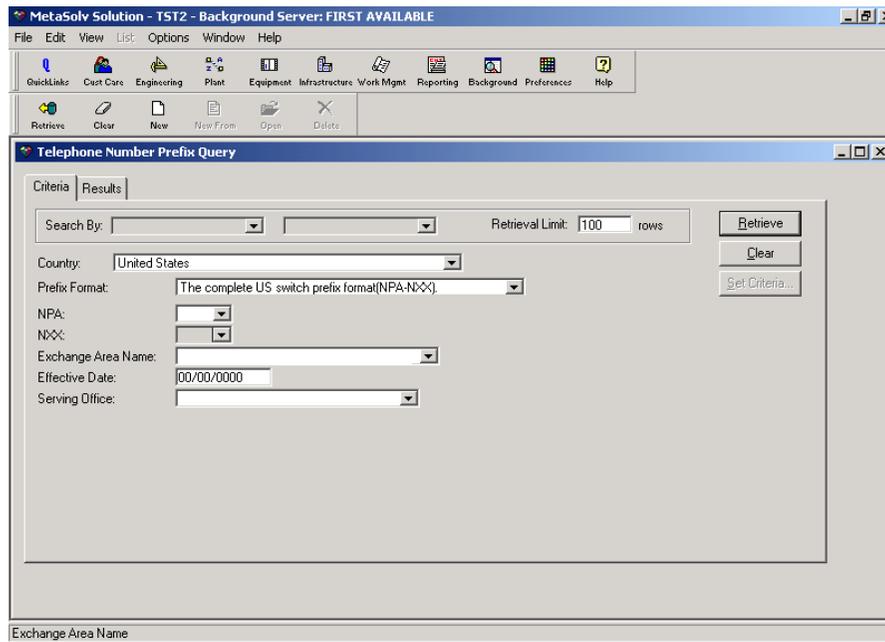

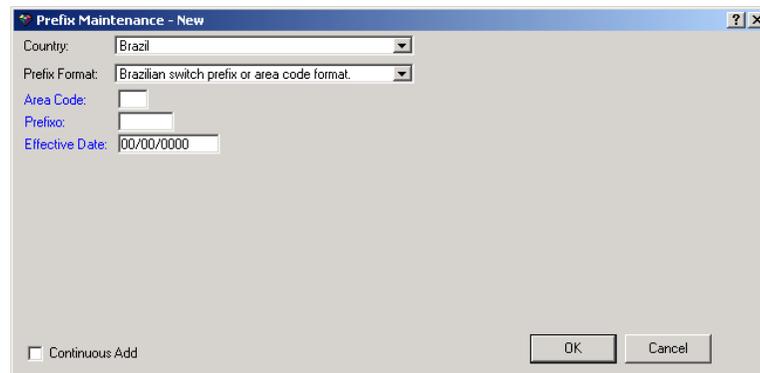**Figure 42: Switch Prefix Structured Format Driving a Query in Infrastructure**

Figure 43: Switch Prefix Structured Format Driving Switch Prefix Entry in Infrastructure

Using telephone number structured formats

Using telephone number structured formats is as straightforward as using switch prefix formats. On the windows where telephone numbers are employed, users simply select the appropriate value from the **Country** drop-down. Ideally, user preferences are defined so that this drop-down defaults to the appropriate country. However, if the client supports multiple countries, users will need to make an appropriate selection from the **Country** drop-down. Note that the value that appears in the **Telephone Number Format** drop-down field defaults based on the value entered (or defaulted) in the **Country** field. Because it is dependent on country, and because there can be only one active telephone number structured format for a country, the **Telephone Number Format** field is grayed-out. The following window is one example of a window in which users might need to select **Country**:
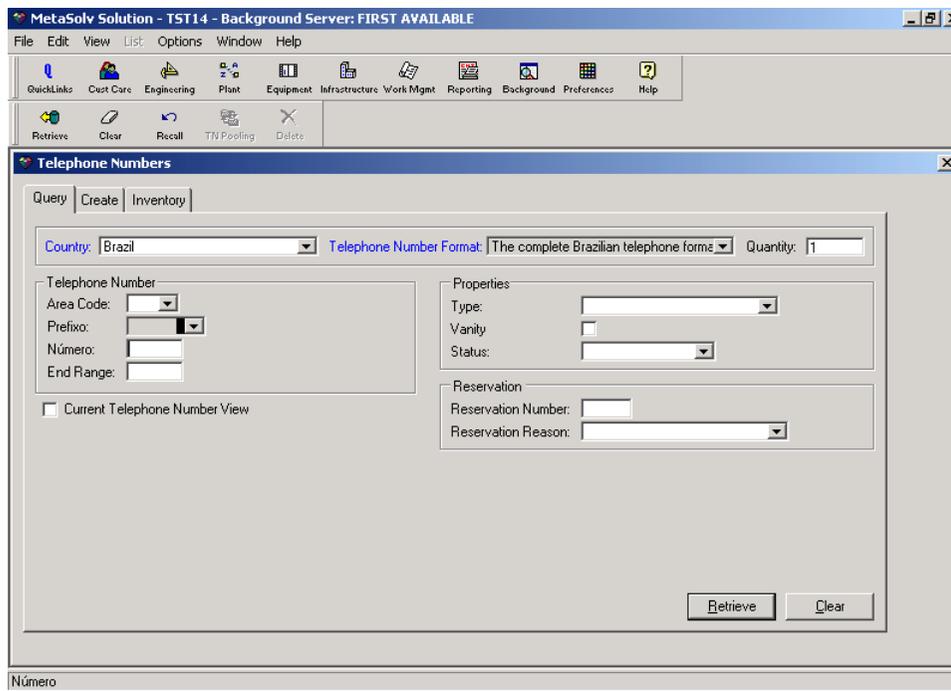

Figure 44: Telephone Number Structured Format Driving Telephone Number Query

Best practices for using structured formats

- Make certain user preferences for structured formats are defined.
- If the client supports multiple countries, and multiple address structured formats, make certain users select the correct country and format for the data they are entering.
- If the order in which users tab to fields on a data entry window driven by a structured format is cumbersome, they should bring the problem to the attention of their MetaSolv Software implementation team.

Appendix A: Contacting Customer Support

MetaSolv Customer Support helps report, track, and resolve issues relating to the MetaSolv Solution product line. The following table details the various ways you can contact Customer Support:

Method	Number/Address	Special Notes/Procedures
E-mail	techsupport@metasolv.com	The customer must be a known MetaSolv software end-user whose e-mail address has been entered into the Customer Support system.
		When a customer sends an e-mail to the system, an automated e-mail response, with a service request number, is automatically sent to the customer.
		See "Guidelines for e-mailing Customer Support" on page 86.
		See "What information will Customer Support need?" on page 86.
Telephone Hotline	Toll Free: 888-884-7686 Voice: 972-403-8400	Toll-free hotline staffed Monday through Friday, 7 A.M.to 6 P.M. CT.
		All **severity 1** requests must be reported via the telephone hotline.
		A voice response system provides instructions for reporting requests.
		See "Guidelines for e-mailing Customer Support" on page 86.
		See "What information will Customer Support need?" on page 86.
Fax	972-403-8333	

Method	Number/Address	Special Notes/Procedures
Mail	MetaSolv Software, Inc. Customer Support 5560 Tennyson Parkway Plano, TX 75024	
Internet	support.metasolv.com	1. Click **Click here to continue**. 2. Enter user ID and password. 3. Click **Submit new customer support ticket**. Fill out information as required. 4. Click **Submit this information as a service request**.

Guidelines for e-mailing Customer Support

When you submit a request via e-mail, specify in the subject line one of the following product types in the subject line followed by a colon, space, and the subject of your request:

⚡ **Warning:** If you do not follow the exact spelling and format in the subject line, your e-mail cannot be processed by the automatic system and it will be sent back to you.

- Background Processor
- DB/UPGD/Install
- Engineering
- Gateway
- Ordering
- Security
- Tools
- Trouble
- Work Mgmt

For example, to submit a problem for a gateway-related problem about the network provisioning indicator, your subject line will be *Gateway: Network provisioning indicator is not working properly*.

What information will Customer Support need?

Please be at your computer with the following information when you call:

- The product version number, which is found by choosing **Help>About MetaSolv Solution** from the main menu in the MetaSolv software product family.
- A printout of the system properties. To obtain the printout:

1. Select **Help>About MetaSolv Solution** from the main menu.

2. Click the **System Properties** button.

3. In the System Properties window, click all the pluses to expand the hierarchy.

4. Click the **Print** button.

- Exact wording of any messages that appear on your screen.
- The window name where the problem occurred. Press **Ctrl+W** to determine the window name, which you can find in the lower, left corner of your screen on the status bar. The window name starts with w_.
- What you were doing when the problem occurred.
- How you tried to solve the problem.
- Whether the problem is reproducible.