Data Area Editor

The Natural data area editor is used to create and modify a data area.

A data area is a Natural object of the type global data area (GDA), local data area (LDA) or parameter data area (PDA). For information on using a data area, see *Data Areas* in the *Programming Guide*.

A data area contains data element definitions, such as user-defined variables, constants and database fields from a data definition module (DDM), which are used by one or more Natural objects. You can also generate Natural objects of the type copycode from a data area. Note that data views from a DDM cannot be defined in PDAs.

A data element in a data area is referred to as a field.

The *Data Area Editor* documentation covers the following topics:

- Invoking the Data Area Editor

- Rows and Columns in the Editor Window

- Editing Data Areas

- Rearranging Columns

- Showing or Hiding Fields

- Navigating between Field Levels

- Saving and Cataloging Data Areas

- Generating Copycode from Data Areas

Related Topics:

- *Editors in the SPoD Environment* in the *Unicode and Code Page Support* documentation

- *Setting the Options* and *Data Area Editor Options* in the *Using Natural Studio* documentation

- *Shortcut Keys* and *Data Area Editor Shortcut Keys* in the *Using Natural Studio* documentation

Invoking the Data Area Editor

You can invoke the data area editor by either using a menu function or the system command EDIT.

▶ **To invoke the editor for a new data area**

- From the **Object** menu, select one of the following: **New** > **Local Data Area**, or **New** > **Global Data Area**, or **New** > **Parameter Data Area**.

Or:

In the command line, enter the following:

```
EDIT object-type
```

where *object-type* is the one-letter code that denotes the type of data area: L for local data area, G for global data area, or A for parameter data area.

An editor window similar to the example below appears:

The title bar displays **Untitled** and the type of data area: local data area, global data area or parameter data area (in the example above, **Local Data Area**). The first row is preset to default values in the cells **Level**, **Name**, **Format** and **Length**.

In addition, a status bar can appear below the title bar depending on whether the corresponding editor option is set: see *Data Area Editor Options* in *Using Natural Studio*.

▶ To invoke the editor for an existing data area

1. In the Logical View, expand a **Local Data Areas** subnode to display the data areas available.

   Select a data area and choose **Open** from the context menu.

   Or:
   In the command line, enter the following:

```
EDIT object-name
```

where *object-name* is the name of the data area you want to edit.

An editor window similar to the example below appears:

	Type	Level	Name	Format	Length	Handle Of	Array
⊟	V	1	EMPLOYEES-VIEW				
		2	PERSONNEL-ID	A	8		
⊟	G	2	FULL-NAME				
		3	FIRST-NAME	A	20		
		3	MIDDLE-I	A	1		
		3	NAME	A	20		
		2	MIDDLE-NAME	A	20		
		2	MAR-STAT	A	1		
		2	SEX	A	1		
		2	BIRTH	D			
	M	2	ADDRESS-LINE	A	20		(1:5)
		2	CITY	A	20		
		2	ZIP	A	10		
		2	POST-CODE	A	10		
		2	COUNTRY	A	3		
⊞	G	2	TELEPHONE				
		2	DEPT	A	6		
		2	JOB-TITLE	A	25		

LDA-TEST [SAGTEST] - Local Data Area

The fields contained in the specified data area are read into the editing area of the editor window. The title bar displays the name of the data area (in the example above, **LDA-TEST**) and the type of data area: local data area, global data area or parameter data area (in the example above, **Local Data Area**).

For further information on EDIT, see the relevant section in the *System Commands* documentation.

Rows and Columns in the Editor Window

The editing area of the editor window is organized in a table where the field definition data is contained in rows and columns. The editor provides a separate row for each field defined for a data area. All attribute definitions that belong to a field are contained in the cells of this row.

The columns and corresponding headings contained in the editor window are described in the following section. The display of the columns depends on whether a column is relevant for the type of data area being edited. For example, the **Parent** column is only displayed for global data areas. For explanations of the field attributes mentioned in this section, see also *Defining Fields* in the *Programming Guide* and DEFINE DATA in the *Statements* documentation. The values used in the DEFINE DATA statement correspond to the values used for the fields contained in a data area.

You can resize, move and hide columns by proceeding as described in *Rearranging Columns*.

Column Heading	Explanation
None	The indicator column is displayed in the leftmost section of the editor window. It can contain the following signs which appear next to the appropriate row:
	⚠ An error sign which indicates incorrect syntax. You are then required to enter a valid value. A tool tip provides error information.
	ℹ An information sign which warns you of potential problems caused by the value entered. A tool tip helps evaluate and eliminate the problem.
	⊟ or ⊞ A toggle key which indicates an expanded or a collapsed block of fields (see also *Showing or Hiding Fields*).

Column Heading	Explanation
Type	The type of field. Possible types are:

	blank	Elementary field. This type of field can hold data and does not contain any other nested fields.
	B	Data block. A data block is a collection of variables. Data blocks only apply to global data areas. For details, see *Data Blocks* in the *Programming Guide* and *Defining Global Data* in the *Statements* documentation.
	C	A variable that is defined as a named constant (see also CONSTANT in *Variable Definition* in the *Statements* documentation) or a counter field (C* variable). A counter field is used to retrieve the number of occurrences of a multiple-value field or a period group from an Adabas database. See also *Referencing the Internal Count for a Database Array C* Notation)* in the *Programming Guide*.
	G	Group. A group is a number of fields defined under one common group name within a view. This allows you to reference several fields collectively by using the group name instead of the names of all the individual fields. Such fields cannot hold any data, but are only containers for other fields.
	H	Handle of dialog element. A handle identifies a dialog element and is stored in a handle variable. See also *Handle Definition* in the *Statements* documentation and *Defining Object Handles* in the *Programming Guide*.
	M	Multiple-value field. This type of field can have more than one value within a record. See also *Multiple-Value Fields* in the *Programming Guide*.
	O	Handle of object.
	P	Periodic group. A group of fields that can have more than one value within a record. See also *Periodic Groups* in the *Programming Guide*.
	R	Redefinition. For information on redefining fields, see *Redefining Fields* in the *Statements* documentation.
	S	Data Structure. A structure is a number of fields defined under one common name. This allows you to reference several fields collectively by using the structure name instead of the names of all the individual fields. Such fields cannot hold any data, but are only containers for other fields. See also *Qualifying Data Structures* in the *Programming Guide*.
	U	Globally Unique Identifier (GUID). A GUID is a constant that is guaranteed to be unique worldwide in the COM/DCOM model. See also *Globally Unique Identifiers - GUIDs* in the *Programming Guide*.
	V	Not applicable to PDAs. View from a DDM. See also the *View Definition* in the *Statements* documentation.
	*	A commentary field. For instructions on commenting out fields by using **Type**, see *Specifying Comments*.

Column Heading	Explanation
Level	The level of the field.
	Levels are used to indicate the structure and grouping of fields. This is relevant to fields of the type view, group, structure and redefinition.
	Valid level numbers are 1 - 99.
	Level numbers must be specified in consecutive ascending order. A level number can only be one level higher than the previous level.
	See also the following sections in the *Programming Guide*: *Level Numbers in View Definitions*, *Level Numbers in Redefinitions* and *Level Numbers in Group Fields*.
Name	The name of the field.
	This name corresponds to the field name used in another Natural object (for example, a program) that references this field.
	For valid names, see the naming conventions for *User-Defined Variables* and *User-Defined Constants* in the *Programming Guide*.
	Redefine Function:
	Instead of specifying a variable name, the filler option (*n*X) can be used. With the filler option, *n* filler bytes can be denoted within a field or variable being redefined, where *n* can be up to 10 digits (1 GB). The definition of trailing filler bytes is optional.
	Note: In a remote mainframe environment, you can preserve mixed-case field names by setting the **Support mixed-case field names on mainframes** editor option described in *Data Area Editor Options* in the *Using Natural Studio* documentation.
Format	The Natural data format of an elementary field such as A (alphanumeric), P (packed numeric) or L (logical).
	For valid Natural data formats, see *Format and Length of User-Defined Variables* and *Special Formats* in the *Programming Guide*.
	For a counter field (C* variable), you can specify the Natural data format/length I2 or I4 (the default setting is N3 for no format/length).
	To modify the format of a field, see also the explanations in *Modifying Fields*.
Length	The length of the field.
	For valid Natural length specifications, see *Format and Length of User-Defined Variables* and *Special Formats* in the *Programming Guide*.
	Depending on the Natural data format selected from the **Format** drop-down list box, **Length** is preset to one of the following default values:
	10　　　　　　for formats A, B and U 4　　　　　　for formats F and I 7　　　　　　for formats N and P
	No length is permitted for the Natural data formats C, D, L and T. For alphanumeric and binary fields, you can define dynamic variables by specifying DYNAMIC in the **Length** column or setting the **Dynamic** option in the dialog box.
	For a counter field (C* variable), you can specify the Natural data format/length I2 or I4 (the default setting is N3 for no format/length).
Handle Of	The type of handle such as a list box.
Array	The array indices.
	As an alternative to entering values in the table cell, you can define or modify an array in the **Array Definition** dialog box as described in *Defining Arrays*.
	For further information on how to define an array, see *Arrays* and *Database Arrays* in the *Programming Guide*, and *Array Dimension Definition* in the *Statements* documentation.
Edit Mask	Not applicable to parameter data areas.
	The edit mask to be used when the field is displayed with an I/O statement.
	The syntax that applies to specifying an edit mask corresponds to the syntax of the session parameter EM or EMU (for a Unicode edit mask) described in the *Parameter Reference* documentation.

Column Heading	Explanation
Header	Not applicable to parameter data areas.
	The header to be produced for each field specified in a DISPLAY statement.
	The syntax that applies to specifying a header corresponds to the syntax of the session parameter HD described in the *Parameter Reference* documentation.
Init	Not applicable to parameter data areas.
	The initial value assigned to a field.
	For detailed instructions on how to assign initial values, see *Defining Initial Values*.
	For basic information on how to assign initial values, see the sections *Initial Values (and the RESET Statement)* and *Initial Values for Arrays* in the *Programming Guide*.
Comment	A comment which applies to the field.
	See also *Specifying Comments*.
Parent	Not applicable to parameter data areas.
	In a global data area:
	The name of the parent (master) block. If you use a parent block, it must be defined in the current data area. Otherwise, a syntax error occurs.
	In a local data area:
	The name of the DDM from which the field derives.
Properties	Only applies to parameter data areas.
	Determines the way in which the value of a variable or field specified as a parameter in a CALLNAT statement is passed from a program to an invoked object (for example, a subprogram).
	Possible entries are:
	By Reference (default)
	By Reference Optional
	By Value
	By Value Optional
	By Value Result
	By Value Result Optional
	For detailed information, see the corresponding options BY VALUE, BY VALUE RESULT and OPTIONAL described for the DEFINE DATA statement in *Parameter Data Definition*, and *operand2* described for the CALLNAT statement in the *Statements* documentation.
Print Mode	Not applicable to parameter data areas.
	The print mode to be used for the field.
	You can select I (inverse print direction) or N (no hardcopy). For details, see the PM session parameter, which corresponds to this field.
	The print mode is not selected by default indicating that the standard character set is used for printing.

Editing Data Areas

You can add a new field to a data area, insert a field, or modify the attributes of a field by using any of the following methods:

- Enter each attribute definition into the respective cell of a field row or replace existing definitions.

- Enter or replace all attributes in a **Definition** dialog box by using the appropriate insert function.

- Copy fields within a data area, from another data area or from a different type of Natural object by using copy and paste functionality or the import function.

This section below covers the following topics:

- Selecting Fields or Field Attributes

- Inserting Fields

- Modifying Fields

- Copying, Cutting and Pasting Fields

- Inserting Data Fields

- Inserting Data Blocks

- Inserting Constants

- Inserting Handles

- Inserting Data Structures

- Inserting Globally Unique Identifiers

- Defining Arrays

- Defining Initial Values

- Defining Counter Fields

- Importing Fields

- Specifying Comments

- Finding and Replacing Text

- Redefining Fields

- Deleting Fields

Selecting Fields or Field Attributes

Before you perform an editor function, you select (highlight) the row or row cell where you want to create, modify or delete a field.

▶ To select a field attribute

1. If a field row is selected:

   Press F2.

   The leftmost cell of the field row is selected.

   Or:

First, click on the row that contains the cell you want to select and then click on the cell where you want to add or modify an attribute.

The specified cell is selected.

2. If a single cell is selected:

Click on the row cell where you want to add or modify an attribute.

Or:

Navigate to the row cell where you want to add or modify an attribute by pressing TAB, SHIFT+TAB, UP-ARROW, DOWN-ARROW, LEFT-ARROW, RIGHT-ARROW, HOME or END.

3. The specified cell is selected.

▶ To select a field

1. If a single cell is selected:

Press SHIFT+SPACEBAR.

The field row of the cell is selected.

Or:

Click on the leftmost column of the field row you want to select.

The specified field row is selected.

2. If a row is selected:

Click on the field row you want to select.

Or:

Navigate to the field row you want to select by pressing UP-ARROW, DOWN-ARROW, HOME or END.

The specified field row is selected.

▶ To select a range of fields

1. If a single cell is selected:

Press SHIFT+SPACEBAR.

The field row of the cell is selected.

Or:

Click on the leftmost column of the first field row in the range.

The specified field row is selected.

2. If a field row is selected:

   Click on the leftmost column of the first field row in the range.

   Or:

   Navigate to the first field row in the range by pressing UP-ARROW, DOWN-ARROW, HOME or
   END.

   The first field row in the range is selected.

3. Hold down SHIFT while you select the row of the last field in the range.

   The rows of the specified field range are selected.

▶ **To select all fields**

● From the **Edit** menu, choose **Select All**.

   Or:
   Choose the ▤ **Select All** toolbar button.

   Or:
   Press CTRL+A.

   All fields rows contained in the current data area are selected.

Inserting Fields

This section provides instructions for inserting fields into a data area.

Note that you cannot insert a field within a view definition.

▶ **To insert a field**

1. Select the row where you want to place the new field.

   The insert position (before or after the selected field) depends on the current setting of:

   ● the **Insert After On/Off** toolbar button.

   ● the **Insert before/Insert after** editor option which is described in *Data Area Editor Options* in
     the *Using Natural Studio* documentation.

2. Copy single or multiple fields into the data area by using copy and paste functionality (see *Copying,
   Cutting and Pasting Fields*) or the import function (see *Importing Fields*).

   Or:
   Invoke the **Definition** dialog box by using the insert function that corresponds to the type of field you
   want to define. The type of field is indicated in the label of the dialog box (for example, **Periodic
   Group Definition**).

For explanations of the values to be entered in the **Definition** dialog box, see *Rows and Columns in the Editor Window*.

When you insert a field of the type redefinition, group, periodic group or structure, the level of each subsequent field is automatically incremented properly.

Modifying Fields

This section provides instructions for modifying fields within a data area.

Caution:
When changing the field type, all field attribute definitions may be reset to their default values. This happens, for example, when you convert a data field to a data structure. You can keep original attribute definitions by commenting out a field as described in *Specifying Comments*.

▶ **To modify a field**

- Select the row cell that contains the field attribute definition you want to change and either overwrite the existing value or choose a value from a selection box.

   Or:
   Open the **Definition** dialog box choosing any of the following methods:

   ○ Double-click on the row that contains the field attribute definition you want to change.

   ○ Select the field row that contains the attribute you want to change and choose the **Field/Control Attributes** toolbar button.

   ○ Select the field row that contains the attribute you want to change and, from the **Field** menu, choose **Modify**.

   In the **Definition** dialog box, edit the text boxes and/or select values from the drop-down list boxes as described for the insert function that corresponds to the type of field you want to modify.

   For explanations of the values to be entered in a row cell or in the **Definition** dialog box, see *Rows and Columns in the Editor Window*.

When you modify the level of a field of the type redefinition, group, periodic group or structure, the level of each subsequent field is automatically incremented or decremented properly, depending on the new level value.

When you modify the Natural data format of a field, the current length is kept if it is also valid for the new data format. Otherwise, the current length specification is automatically replaced by a valid default length (see also the description of the **Length** column).

When you modify the length of a field that belongs to a redefinition, consider the following: If the total length of all fields that belong to the redefinition exceeds the length of the redefined field, the information sign 🛈 or an appropriate warning message appears.

Copying, Cutting and Pasting Fields

The copy/cut and paste functions of the data area editor are used to copy, move or delete fields within a single data area or between multiple data areas. In addition, you can copy field definitions from a data area into a Natural object that is handled by the program editor (for example, a program). If you want to copy field definitions from another Natural object such as a map and a DDM, use the **Import** function described in *Importing Fields*.

▶ **To copy or cut and paste fields**

1. In a data area, select the field(s) you want to copy.

2. From the **Edit** or context menu, choose **Copy** or **Cut**.

   Or:
   Choose the **Copy** or **Cut** toolbar button.

   Or:
   Press CTRL+C (to copy) or CTRL+X (to cut).

   The definitions of the selected fields are placed on the clipboard and can now be pasted into the data area contained in the active editor window.

3. If you want to paste the fields into another data area, open the respective object.

4. Select the field before or after which (see also insert position) you want to paste the fields.

5. From the **Edit** or context menu, choose **Paste**.

   Or:
   Choose the **Paste** toolbar button.

   Or:
   Press CTRL+V.

   The copied or cut fields are pasted at the specified position in the data area contained in the active editor window.

6. To paste the same fields again, repeat Steps 3 through 5.

When you cut or paste a field of the type redefinition, group, periodic group or structure, the level of each subsequent field is automatically adjusted properly.

Inserting Data Fields

This function is used to insert elementary fields that contain scalable definitions.

For explanations of the values to be entered in the dialog box described in the following instructions, see *Rows and Columns in the Editor Window*.

▶ **To insert a data field**

1. Select the row where you want to insert the field (see also insert position).

2. From the **Insert** menu, choose **Data Field** or press SHIFT+D.

   Or:
   Choose the **Insert Data Field** toolbar button.

   The **Data Field Definition** dialog box appears.

3. In the **Data Field Definition** dialog box, specify the following:

   In the **Level** text box, enter a valid level number.

   In the **Name** text box, enter a valid field name.

   From the **Format** drop-down list box, select the required Natural data format.

   Select the **Dynamic** check box if you want the field length to be set dynamically. In this case, the length text box will be deactivated.

   In the **Length** text box, enter the field length.

   In the **Edit mask** text box, specify an edit mask if you want to use one. This definition does not apply to parameter data areas.

   In the **Header** text box, enter a header if you want to specify one. This definition does not apply to parameter data areas.

   In the **Comment** text box, enter a commentary text if you want to document the field: see *Specifying Comments*.

   For parameter data areas:

   > From the **Value clause** drop-down list box, select any of the following input/output characteristics for the field: By Reference (this is the default setting), By Value or By Value Result.

   > Select the **Optional parameter** check box if you want to specify the data field as Optional.

   > For further information, see **Properties** in *Rows and Columns in the Editor Window*.

   From the **Print Mode** text box, select the required print mode. This definition does not apply to parameter data areas.

   Choose **Array Definition** if you want to invoke the **Array Definition** dialog box where you can define an array: see *Defining Arrays*.

   Choose **Initialize** if you want to invoke the **Field Initialization** dialog box where you can define an initial value for the field: see *Defining Initial Values*. This definition does not apply to parameter data areas.

4. Choose **Add**.

The field is inserted into the specified position of the data area. The **Data Field Definition** dialog box is cleared and remains open.

5. Choose either of the following options:

    Repeat Steps 3 and 4 if you want to define additional fields and insert them into the data area.

    Or:
    Choose **Quit** when you are finished.

    The **Data Field Definition** dialog box is closed.

Inserting Data Blocks

This function only applies to global data areas.

For explanations of the values to be entered in the dialog box described in the following instructions, see *Rows and Columns in the Editor Window*.

▶ **To insert a data block**

1. Select the row where you want to insert the data block (see also insert position).

2. From the **Insert** menu, choose **Block** or press SHIFT+B.

    Or:
    Choose the **Insert Block** toolbar button.

    The **Block Definition** dialog box appears.

3. In the **Block Definition** dialog box, specify the following:

    In the **Name** text box, enter a valid name for the data block.

    In the **Parent** text box, enter the name of the parent (master) block. If you use a parent block, it must be defined in the current data area. Otherwise, a syntax error occurs.

    In the **Comment** text box, you can enter a comment that documents the data block: see *Specifying Comments*.

4. Choose **OK**.

    The parent block is inserted into the specified position of the data area where the **Type** column indicates B (for Block), and the **Data Field Definition** dialog box appears.

5. Define the subordinate block(s) that belong to the parent block as described in *Inserting Data Fields*.

Inserting Constants

This functions does not apply to parameter data areas.

For explanations of the values to be entered in the dialog box described in the following instructions, see *Rows and Columns in the Editor Window*.

▶ **To insert a constant**

1. Select the row where you want to insert the field (see also insert position).

2. From the **Insert** menu, choose **Constant** or press SHIFT+C.

   Or:
   Choose the **Insert Constant** toolbar button.

   The **Constant Definition** dialog box appears.

3. In the **Constant Definition** dialog box, specify the following:

   In the **Name** text box, enter a valid field name.

   From the **Format** drop-down list box, select the required Natural data format.

   In the **Length** text box, enter a field length.

   In the **Edit mask** text box, specify an edit mask if you want to use one. This definition does not apply to parameter data areas.

   In the **Header** text box, enter a header if you want to specify one. This definition does not apply to parameter data areas.

   In the **Comment** text box, enter a commentary text if you want to document the field: see *Specifying Comments*.

   From the **Print Mode** text box, select the required print mode. This definition does not apply to parameter data areas.

   Choose **Array Definition** if you want to define an array: see *Defining Arrays*.

   Choose **Initialize** to invoke the **Field Initialization** dialog box where you can define an initial value for the field: see *Defining Initial Values*. This definition does not apply to parameter data areas.

4. Choose **Add**.

   The field is inserted into the specified position of the data area where the **Type** column indicates C (for Constant) and the **Property** column indicates I (for Initialize). The **Constant Definition** dialog box is cleared and remains open.

5. Choose either of the following options:

   Repeat Steps 3 and 4 if you want to define additional fields and insert them into the data area.

   Or:
   Choose **Quit** when you are finished.

   The **Constant Definition** dialog box is closed.

Inserting Handles

For a handle, you can define the type dialog element or object.

For explanations of the values to be entered in the dialog box described in the following instructions, see *Rows and Columns in the Editor Window*.

▶ **To insert a handle**

1. Select the row where you want to insert the field (see also insert position).

2. From the **Insert** menu, choose **Handle** or press SHIFT+H.

   Or:
   Choose the **Insert Handle** toolbar button.

   The **Handle Definition** dialog box appears.

3. In the **Handle Definition** dialog box, specify the following:

   In the **Level** text box, enter a valid level number.

   In the **Name** text box, enter a valid field name.

   In the **Type** field, choose either of the following options:

   - Select the **Dialog Element** option button for a handle of the type dialog element.

     Then from the drop-down list box, select the required dialog element.

   - Or:

     Select the **Object** option button for a handle of the type object.

     The drop-down list box then displays OBJECT.

   In the **Comment** text box, enter a commentary text if you want to document the field: see *Specifying Comments*.

   For parameter data areas:

   From the **Value clause** drop-down list box, select any of the following input/output characteristics for the field: By Reference (this is the default setting), By Value or By Value Result.

   Select the **Optional parameter** check box if you want to specify the data field as Optional.

   For further information, see **Properties** in *Rows and Columns in the Editor Window*.

   Choose **Array Definition** if you want to invoke the **Array Definition** dialog box where you can define an array: see *Defining Arrays*.

Choose **Initialize** if you want to invoke the **Field Initialization** dialog box where you can define an initial value for the field: see *Defining Initial Values*. This definition does not apply to parameter data areas.

4. Choose **Add**.

    The field is inserted into the specified position of the data area where the **Type** column indicates H (for Handle). The **Data Field Definition** dialog box is cleared and remains open.

5. Choose either of the following options:

    Repeat Steps 3 and 4 if you want to define additional fields and insert them into the data area.

    Or:
    Choose **Quit** when you are finished.

    The **Data Field Definition** dialog box is closed.

Inserting Data Structures

A data structure consists of fields and nested structures.

For explanations of the values to be entered in the dialog box described in the following instructions, see *Rows and Columns in the Editor Window*.

▶ **To insert a data structure**

1. Select the row where you want to insert the data structure (see also insert position).

2. From the **Insert** menu, choose **Structure** or press SHIFT+S.

    Or:
    Choose the **Insert Structure** toolbar button.

    The **Structure Definition** dialog box appears.

3. In the **Structure Definition** dialog box, specify the following:

    In the **Level** text box, enter a valid level number.

    In the **Name** text box, enter a valid name for the structure.

    In the **Comment** text box, enter a commentary text if you want to document the data structure: see *Specifying Comments*.

    Choose **Array Definition** if you want to invoke the **Array Definition** dialog box where you can define an array: see *Defining Arrays*.

4. Choose **OK**.

    The data structure is inserted into the specified position of the data area where the **Type** column indicates S (for Structure), and the **Data Field Definition** dialog box appears.

5. Define the subordinate field(s) that belong to the structure as described in *Inserting Data Fields*.

Inserting Globally Unique Identifiers

This function only applies to local data areas and global data areas.

For explanations of the values to be entered in the dialog box described in the following instructions, see *Rows and Columns in the Editor Window*.

▶ **To insert a Globally Unique Identifier**

1. Select the row where you want to insert the field (see also insert position).

2. From the **Insert** menu, choose **Globally Unique ID** or press SHIFT+U.

   Or:
   Choose the **Insert GUID** toolbar button.

   The **Globally Unique ID Definition** dialog box appears.

3. In the **Globally Unique ID Definition** dialog box, specify the following:

   In the **Level** text box, enter a level number.

   In the **Name** text box, enter a valid field name.

   In the **Comment** text box, enter a commentary text if you want to document the field: see *Specifying Comments*.

4. Choose **Add**.

   The field is inserted into the specified position of the data area as a Natural constant with length A36. The **Type** column for the field row indicates U (for Globally Unique Identifier) and the **Init** column displays the contents of the constant (for example, CONST <'2AEB9D1A-EAC2-4E5E-8983-0AF0CCB12098'>). The **Globally Unique ID Definition** dialog box is cleared and remains open.

5. Choose either of the following options:

   Repeat Steps 3 and 4 if you want to define additional fields and insert them into the data area.

   Or:
   Choose **Quit** when you are finished.

   The **Global Unique ID Definition** dialog box is closed.

Defining Arrays

The **Array Definition** dialog box can be used to define multi-dimensional tables for the field name and field type indicated in the box.

For detailed information on how to define an array, see *Arrays* and *Database Arrays* in the *Programming Guide*, and *Array Dimension Definition* in the *Statements* documentation.

> ▶ **To define an array in the Array Definition dialog box**

1. From the **Definition** dialog box, choose **Array Definition**.

    The **Array Definition** dialog box appears for the specified field name and type.

2. In the **Array Definition** dialog box, specify the following:

    From the **Dimensions** drop-down list box, select the number of dimensions for the array: 1, 2, or 3. To delete an array definition, select 0 (zero).

    In the **Lower bound** text box, enter the lower bound for each dimension.

    In the **Upper bound** text box, enter the upper bound for each dimension.

3. Choose **OK**.

    The definitions are saved, the **Array Definition** dialog box is closed and the **Data Field Definition** dialog box appears.

Defining X-Arrays

An X-array (eXtensible array) can be defined by specifying an asterisk (*) for at least one bound of at least one dimension of the array. The asterisk (*) in the bound definition indicates that the corresponding bound is extensible. Only one bound - either upper or lower - may be extensible, but not both. If the lower bound is extensible, the **Upper bound** text box contains the upper bounds of the X-array.

For more information on defining an X-array, see *X-Arrays* in the *Programming Guide* and *Array Dimension Definition* in the *Statements* documentation.

Defining Initial Values

This definition does not apply to parameter data areas.

The **Field Initialization** dialog box is used to assign an initial value to a field. For further information on how to assign initial values, see the sections *Initial Values (and the RESET Statement)* and *Initial Values for Arrays* in the *Programming Guide*.

In the **Field Initialization** dialog box, you can enter the value(s) for a data field in two different ways: single-value mode or free-form mode.

In single-value mode, you enter the values in a structured way. Parentheses, apostrophes or value prefixes (for example, H for Hex, D for Date, or T for Time) are not required.

In free-form mode, you enter the values just as you would in a DEFINE DATA statement; see also *Initial-Value Definition* and *Initial/Constant Values for an Array* in the *Statements* documentation.

> ▶ **To define an initial value in single-value mode**

1. From the **Definition** dialog box, choose **Initialize**.

   Or:
   Select the row cell of the **Init** column which contains the initial value required and choose the
   following button: [.....] This button is only available for a field that has been defined as an array.

   The **Field Initialization** dialog box appears with the tabbed pages **Single-Value Mode** and
   Free-Form Mode. The **Single-Value Mode** page is opened by default. It contains a table similar to
   the example shown below:
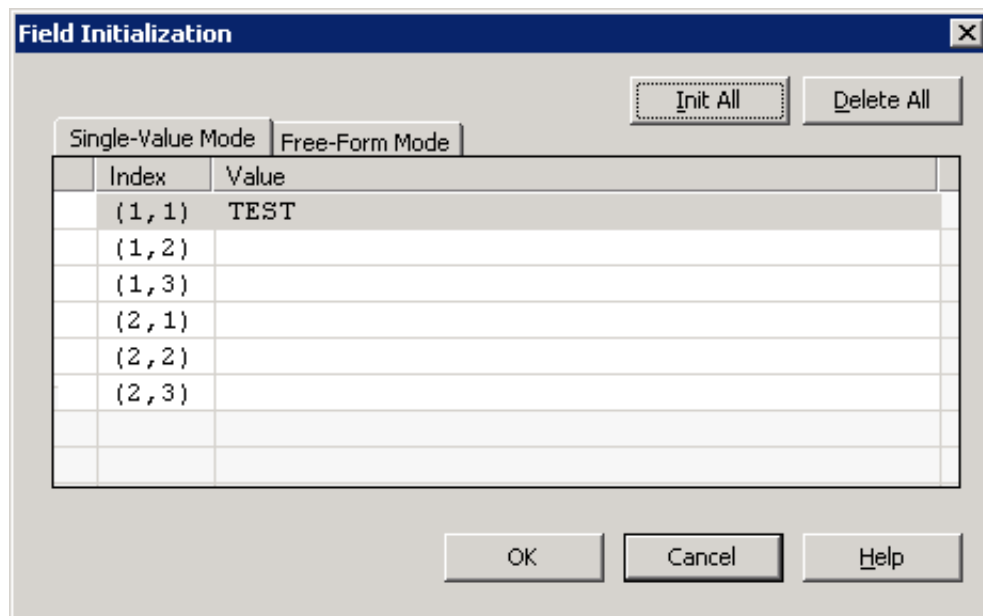
   The indicator column in the leftmost section contains error information if an incorrect value is
   entered in the **Value** column.

   For a field that has been defined as an array, the **Index** column is displayed, which lists all
   occurrences of the array as shown in the example above for an array defined as (1:2,1:3).

   The **Value** column contains the initial value if assigned to the field (scalar) or array occurrence.

   You can use TAB, CR or DOWN ARROW to go down one row in the table, and SHIFT+TAB or UP
   ARROW to go up one row. When you resize a column or select a row, press F2 to deselect the row
   and go to the **Value** column.

2. For a field that has been defined as a scalar, enter an initial value or replace the existing entry in the
   Value column, skip the following step and proceed with Step 4.

   For a field that has been defined as an array, proceed with the following step.

3. In the **Value** column next to the **Index** row cell that contains the required array occurrence, add an
   initial value or replace the existing entry.

   Or:
   To assign an initial value to *all* occurrences, enter the required initial value for one of these
   occurrences, keep the cursor inside this row cell, and choose the **Init All** button. The initial value
   entered is then assigned to all occurrences.

Or:
To remove the initial values assigned to *all* occurrences, choose the **Delete All** button. The initial values entered are then removed from all occurrences.

The initial value is checked when you leave the row cell and continue editing another field definition, or when you choose **OK** in the **Field Initialization** dialog box.

4. Choose **OK**.

The definitions on the **Single-Value Mode** page are checked and saved, and the **Field Initialization** dialog box closes.

▶ **To define an initial value in free-form mode**

1. From the **Definition** dialog box, choose **Initialize**.

Or:
Select the row cell of the **Init** column which contains the initial value required and choose the following button: [. . .] . This button is only available for a field that been defined as an array, or for a value definition that spans multiple lines.

The **Field Initialization** dialog box appears with the tabbed pages **Single-Value Mode** and **Free-Form Mode**.

2. Open the **Free-Form Mode** page.

An edit box appears. If no initial value yet exists, the box is preset to a value such as `INIT (1) <…>` .

3. Enter the initial value definitions according to the common syntax definitions in a `DEFINE DATA` statement (see the *Statements* documentation).

4. Choose **OK**.

The definitions on the **Free-Form Mode** page are saved and the **Field Initialization** dialog box closes. The definitions are validated when you check or stow the data area with the appropriate menu function or system command.

Defining Counter Fields

For explanations of the values to be entered in the dialog box described in the following instructions, see *Rows and Columns in the Editor Window*.

▶ **To define a counter field**

1. Select the multiple field or periodic field you want to define as a counter field (`C*` variable).

2. From the **Field** menu, choose **Counter** or press SHIFT+C.

Or:
Choose the **Counter Field** toolbar button.

A **'C*' Counter Definition** dialog box appears for the specified field.

3. In the **'C*' Counter Definition** dialog box, specify the following:

   In the **Level** text box, change the field level if required.

   From the **Format** drop-down list box, select the required format.

   In the **Length** text box, enter a valid field length.

   In the **Comment** text box, enter a commentary text if you want to document the counter field: see
   Specifying Comments.

4. Choose **OK**.

   The **'C*' Counter Definition** dialog box is closed and the **Type** column now indicates C (for
   counter).

Importing Fields

You can import single or multiple fields into a data area from different Natural object types in any library
or from a Predict server.

▶ To import fields from another type of Natural object

1. Select the row where you want to insert the fields (see also insert position).

2. From the **Insert** menu, choose **Import** or press SHIFT+O.

   Or:
   Choose the **Import Data Field** toolbar button.

   The **Import Data Field** dialog box appears. The name of the current library is displayed in the
   Library list box.

3. In the **Import Data Field** dialog box, specify the following:

   From the **Library** list box, select another library if the object that contains the fields you want to
   import is located in a different library.

   The list contains all libraries that reside in the current FNAT and FUSER system file, which are
   displayed as nodes in the Natural Studio tree view (the display can be limited by using the Display
   Filter function of Natural Studio). In addition, the list contains all libraries from inactive system files
   as specified in the steplib table.

   From the **Type** group frame, select the option button that corresponds to the type of Natural object
   from which you want to import fields.

   Or:

   Depending on the type of Natural object required, use one of the following shortcut keys:

ALT+P for program	ALT+M for map
ALT+N for subprogram	ALT+L for local data area
ALT+7 for function	ALT+G for global data area
ALT+S for subroutine	ALT+A for parameter data area
ALT+H for helproutine	ALT+V for DDM

The **Object List** list box appears with a list of all Natural objects of the specified object type available in the selected library.

The list contains all objects, which are displayed in the library nodes of the Natural Studio tree view (the display can be limited by using the Display Filter function of Natural Studio).

For DDMs and data areas, the list only contains objects for which both a source object and a cataloged object exist.

From the **Object List** list box, select the object that contains the fields you want to import.

The fields contained in the selected object appear in the **Importable Data Fields** list box.

From the **Importable Data Fields** list box, select one or more fields that you want to import.

4. Choose **Import** or double-click on a field.

    ● For fields from a DDM, the **View Definition** dialog box appears where the name of the DDM is displayed in the **Name of DDM** text box.

       In the **Name of View** text box, enter the name to be used for the view in the data area.

       In the **Comment** text box, enter a commentary text if you want to document the view: see *Specifying Comments*.

       Choose **OK** when you are finished.

    ● If you import a multiple-value field from a DDM, the **Array Definition** dialog box appears.

       In the **Lower bound** and **Upper bound** text boxes change the values if required.

       The **Array Definition** dialog box does not appear if you import a multiple-value field from a view definition in a local or a global data area. The number of occurrences is then automatically copied from the selected field into the array definition.

       Choose **OK** when you are finished.

    ● If you import one or more fields that belong to a periodic group, the **Periodic Group Definition** dialog box appears.

       Select either of the following option buttons: **PE group** or **Each field in PE group** (this is the default setting).

If you select **PE group**, the **Lower bound** and **Upper bound** text boxes appear where you can change the values if required.

The **Periodic Group Definition** dialog does not appear if you import fields of a periodic group from a view definition in a local or a global data area. The number of occurrences is then automatically copied from the selected fields into the array definition.

Choose **OK** when you are finished.

The fields are copied into the current data area and the **Import Data Field** dialog box remains open.

5. Repeat Steps 3 and 4 if you want to import additional fields.

6. Choose **Quit** when you are finished.

The **Import Data Field** dialog box is closed.

Specifying Comments

You can exclude fields from the syntax check by marking or unmarking the corresponding rows. In addition, you can insert commentary rows or add commentary text to an existing field. You can also add a comment and insert a commentary row with the **Redefine** function described in *Redefining Fields*.

▶ **To convert single or multiple fields to commentary rows**

1. Select the required field row or the range of field rows.

2. Choose one of the following methods:

   ● From the **Edit** menu, choose either **Advanced** > **Add Comment Mark(s)** or **Advanced** > **Remove Comment Mark(s)**.

   ● Or:

     Press CTRL+M to comment out the field or CTRL+SHIFT+M to remove the comment mark.

   ● Or:

     From the drop-down list box in the **Type** cell of the required field row, select ***** to comment out the field, or select the appropriate field type value if you want to remove the comment mark, and choose ENTER.

A comment mark (*) in the **Type** cell of the selected field row indicates that the field has been converted to a commentary row. All field attribute definitions in the row cells are retained.

An empty **Type** cell or another field type value other than * indicates that the comment mark has been removed from the selected field row.

▶ **To convert a field to an empty commentary row**

● From the drop-down list box in the **Type** cell of the field row to be marked, select **/*** and choose ENTER.

A comment mark (`*`) appears in the **Type** cell of the field row and all row cells are cleared.

▶ To insert a commentary row

1. Select the field row above or below which (see also insert position) you want to insert the commentary row.

2. From the **Insert** menu, choose **Comment** or press SHIFT+M.

   Or:
   Choose the **Insert Comment** toolbar button.

   The **Comment Line Definition** dialog box appears.

3. In the **Comment** text box, enter any text.

4. Choose **Add**.

   The commentary row is inserted into the specified position of the data area and the **Comment** text box is cleared and remains open.

5. Choose either of the following options:

   Repeat Steps 3 and 4 if you want to insert additional commentary rows into the data area.

   Or:
   Choose **Quit** when you are finished.

   The **Comment Line Definition** dialog box is closed.

▶ To add a comment to a field

- In the **Comment** column of the field you want to document, enter any text.

   Or:
   Open the **Definition** dialog box and enter any text in the **Comment** text box.

Finding and Replacing Text

You can search for field names and comments contained in the current data area by using the find function. If it should be necessary to replace a frequently occurring text string, you can use the combined find and replace function.

The find function is performed on all data definitions including collapsed blocks of fields (see also *Showing or Hiding Fields*).

Caution:
There is no undo function available to restore original names.

▶ To search for a text string

1. From the **Edit** menu, choose **Find**.

   Or:
   Choose the 🔍 **Find** toolbar button.

   Or:
   Press CTRL+F.

   The **Find** dialog box appears.

2. In the **Find** text box, enter a search string.

   Select the **Name** check box if you want to restrict the search to the field names contained in the **Name** column.

   Select the **Comment** check box if you want to restrict the search to the commentary text contained in the **Comment** column.

   Select the **Case sensitive** check box to search for strings that exactly match the entry in the **Find** text box. Otherwise, any combination of upper and lower-case letters will be found. This option only applies to commentary text contained in the **Name** or **Comment** column.

   Select the **Whole words only** check box to restrict the search to whole words only. Otherwise, all occurrences of the search string will be found.

   In the **Direction** section, select the option button **Up** or **Down** to specify whether the search is to be performed from the cursor position to the end of the data area or from the cursor position to the beginning of the data area. The default setting is **Down**.

3. Choose **Find Next**.

   If no instance of the search string is found, an appropriate message is displayed.

   If an instance of the search string is found, it will be selected.

4. To search for additional instances of the search string: from the **Edit** menu, choose **Find Next**.

   Or:
   Choose the **Find Next** toolbar button.

   Or:
   Press F3.

▶ **To replace a text string**

1. From the **Edit** menu, choose **Replace**.

   Or:
   Choose the **Replace** toolbar button.

   Or:
   Press CTRL+H.

The **Replace** dialog box appears.

2. In the **Find** text box, enter a search string.

   In the **Replace with** text box, enter a replacement string.

   Select the **Name** check box if you want to restrict the search to the field names contained in the **Name** column.

   Select the **Comment** check box if you want to restrict the search to the commentary text contained in the **Comment** column.

   Select the **Case sensitive** check box to search for text strings that exactly match the entry in the **Find** text box. Otherwise, any combination of upper and lower-case letters will be found. This option only applies to commentary text contained in the **Name** or **Comment** column.

   Select the **Whole words only** check box to restrict the search to whole words. Otherwise, all occurrences of the search string will be found.

   In the **Direction** section, select the option button **Up** or **Down** to specify whether the search is to be performed from the cursor position to the end of the data area or from the cursor position to the beginning of the data area. The default setting is **Down**.

3. Choose **Replace** to replace the next hit found in the source.

   Choose **Find Next** and **Replace** to find the next hit and replace it.

   Or:
   Choose the **Find Next** and **Replace** toolbar buttons.

   Or:
   Choose **Replace Next** to replace the next hit found without selecting the hit first.

   Or:
   Choose **Replace All** to replace all search strings found.

   If no instance of the search string is found, an appropriate message is displayed.

4. Choose **Close** to exit the dialog box.

Redefining Fields

This function does not apply to a field in a view defined in a parameter data area.

When redefining a field, you can convert the Natural data format of a field or divide a single field into data segments. For details, see the redefinition option of the DEFINE DATA statement in the *Statements* documentation.

▶ **To redefine a field definition from one type to another**

1. Select the field you want to redefine.

2. From the **Field** menu or context menu, choose **Redefine** or press SHIFT+E.

   Or:
   Choose the **Redefine** toolbar button.

   A new row is inserted into the data area which contains the same name and level as the selected field and a BEGIN REDEFINE comment. In addition, the **Insert Redefine** dialog box appears.

3. In the **Insert Redefine** dialog box, select any of the following option buttons:

   Structure to define a structure.

   Or:

   Data field to define an elementary field.

   Or:

   Comment to add a commentary line that documents the redefinition (see also *Specifying Comments*).

4. Choose **OK**.

   Depending on the option set, a corresponding dialog box appears for the specified field: **Structure Definition, Redefine** or **Comment Line Definition**.

5. Enter the required values as described in *Inserting Data Fields*, *Inserting Data Structures* or *Specifying Comments* respectively.

   Note:
   In the **Name** text box of the **Redefine** dialog box, you can enter nX to specify filler bytes.

6. Choose **Add**.

   The field is inserted into the data area and the **Insert Redefine** dialog box appears again.

7. Repeat Steps 3 through 6 until no more space is available or until the redefinition is complete.

If the total length of all fields that belong to the redefinition exceeds the length of the redefined field, the information sign 🛈 or an appropriate warning message appears.

Deleting Fields

This section provides instructions for deleting fields in a data area.

▶ **To delete fields in the data area editor**

1. Select the field(s) to be deleted.

2. From the **Edit** or context menu, choose **Delete**.

   Or:
   Press DEL.

Or:
Choose the **Cut** toolbar button.

Or:
Press CTRL+X.

If delete messages are active, you are requested to confirm the deletion. Otherwise, the fields are deleted without prior warning.

When you delete a field of the type redefinition, group, periodic group or structure, the level of each subsequent field is automatically decremented properly.

Rearranging Columns

In the editor window, you can adjust the display of the data area to your needs by resizing, moving or hiding columns that are not required for an editing operation in the current data area.

- Resizing Columns

- Moving Columns

- Hiding or Displaying Columns

Resizing Columns

You can automatically adjust a single column or all columns to the best size, or change the width of a single column to a specific size.

▶ **To resize all columns to best fit**

- Choose one of the following methods:

    ○ Select a field as described in *To select a field*.

    ○ From the **View** menu, choose **Customize Columns**.

      Or:
      In any column heading, click the right mouse button and choose **Customize Columns** from the context menu.

      The **Customize Columns** dialog box appears.

    ○ Select the **Best Fit** check box. This option is not selected by default.

  All columns in the active editor window are automatically resized to the size that best fits into the editor window whereby the column headings always remain visible.

  Or:
  Press CTRL+PLUS.

  Or:
  If you want to apply **Best Fit** to all active editor windows, set the corresponding editor option described in *Data Area Editor Options* in the *Using Natural Studio* documentation.

▶ **To resize all columns to best fit while typing in text**

1. Open the **Customize Columns** dialog box as described in *To resize all columns to best fit*.

2. Select the **Best Fit** check box and, additionally, select the **Auto Fit** check box.

   Each column in the active editor window is then automatically adjusted to fit the text you type in a row cell or a **Definition** dialog box when you leave the column or dialog box respectively.

   Or:
   If you want to apply **Best Fit** and **Auto Fit** to all active editor windows, set the corresponding editor options described in *Data Area Editor Options* in the *Using Natural Studio* documentation.

▶ **To resize a single column to fit the contents**

● In the heading of the column you want to change, place the pointer over the right border. When the pointer changes to a divider, double-click on the border between the column headings. Note that you cannot resize the leftmost column.

   The column is automatically adjusted to fit its contents.

▶ **To resize a single column to a specific size**

● In the heading of the column you want to change, place the pointer over the right border. When the pointer changes to a divider, drag the divider to the width you require. Note that you cannot resize the leftmost column.

   The width of the column has changed to the specified size.

▶ **To save a resized table layout**

● Open the **Customize Columns** dialog box as described in *To resize all columns to best fit* and choose one of the following buttons.

   ○ **OK** saves the new table layout for the current editor session.

   ○ **Save Layout** saves the new layout in your user profile and retains it for future editor sessions.

   ○ **Restore Layout** overwrites the current layout with the layout previously saved in the user profile. Choose **OK** to save this layout.

   ○ **Restore Defaults** followed by **OK** overwrites the layout saved in the user profile with the default layout initially provided by the editor. Choose **OK** to save this layout.

   Or:
   In the editing area of the editor window, press CTRL+ALT+L.

   The new layout is saved in your user profile and retained for future editor sessions.

Moving Columns

You can change the table layout by moving single or multiple columns.

▶ To move a column

1. Choose either of the following methods:

   - Select a field as described in *To select a field*.

   - Open the **Customize Columns** dialog box as described in *To resize all columns to best fit*.

   - From the **Displayed Columns** list box, select the columns you want to move and choose **Move Up** or **Move Down** (if required repeatedly) until the columns have reached the target position.

     The top-to-bottom order of the list box corresponds to the left-to-right of the table in the editor window, that is, the top list column corresponds to the leftmost table column.

   Or:

   - Drag the column heading you want to move and drop it in the position required. Note that you cannot move the leftmost column.

   - Open the **Customize Columns** dialog box as described in *To resize all columns to best fit*.

2. To keep the new table layout, proceed as described in *To save a resized table layout*.

Hiding or Displaying Columns

You can change the table layout by hiding or displaying columns.

▶ To hide a column by rearranging the display order

1. Select a field as described in *To select a field*.

2. Open the **Customize Columns** dialog box as described in *To resize all columns to best fit*.

3. From the **Displayed Columns** list box, select the columns you want to hide.

   The top-to-bottom order of the list box corresponds to the left-to-right of the table in the editor window, that is, the top list column corresponds to the leftmost table column.

   Note:
   You cannot select **Type**, **Level**, **Name**, **Format** and **Length** which are mandatory for the table layout.

4. Choose **Remove**.

   The selected columns are removed from **Displayed Columns** and appear in the **Hidden Columns** list box.

5. To keep the new table layout, proceed as described in *To save a resized table layout*.

▶ **To hide a column by moving column borders**

1. In the heading of the column you want to hide, place the pointer over the right border. When the pointer changes to a divider, drag the divider to the left border until the column heading is completely invisible (right and left border lines must coincide).

    Note:
    You cannot hide the columns **Type**, **Level**, **Name**, **Format** and **Length** which are mandatory for the table layout.

    The hidden column then appears in the **Hidden Columns** list box of the **Customize Columns** dialog box.

2. To keep the new table layout, proceed as described in *To save a resized table layout*.

▶ **To display a hidden column**

1. Select a field as described in *To select a field*.

2. Open the **Customize Columns** dialog box as described in *To resize all columns to best fit*.

3. From the **Hidden Columns** list box, select the columns you want to display in the editor window.

4. Choose **Add**.

    The selected columns are removed from **Hidden Columns** and appear in the **Displayed Columns** list box.

5. To keep the new table layout, proceed as described in *To save a resized table layout*.

Showing or Hiding Fields

You can show (expand) or hide (collapse) blocks of fields to improve readability and maintainability of data areas with complex data structures. When a block of fields is collapsed, all fields contained in this block are hidden, including any other nested blocks if they are part of the chosen block. Hidden blocks retain their collapsed or expanded state.

Blocks that can be expanded or collapsed are blocks of fields that are defined for the same field level (1 to 99). Blocks are expanded or collapsed by the hierarchy of levels, from highest level 1 to lowest level 99. A block that contains fields from a lower-ranking level is contained in a block from a higher level.

When scanning fields (see also *Finding and Replacing Field Names*), collapsed blocks are also scanned.

If you want to expand and collapse blocks of fields, you need to set the respective editor option referenced in the instructions below.

▶ **To expand and collapse single blocks**

1. Set the **Expand/Collapse** editor option as described in *Data Area Editor Options* in the *Using Natural Studio* documentation.

   When the **Expand/Collapse** option is set, an expand/collapse toggle (⊟ or ⊞) appears as shown in the example of an editor window shown earlier.

   The toggle ⊟ indicates the first row of an expanded block.

   The toggle ⊞ indicates the first row of a collapsed block.

2. Click on the toggle ⊞ to expand a block or click on the toggle ⊟ to collapse a block.

   Or:
   Position the cursor in a row that contains the toggle ⊞ or ⊟ and, from the **View** menu, choose **Expand/Collapse** or choose the 🔲 **Expand/Collapse** toolbar button.

   Or:
   Use any of the shortcut keys listed in *Data Area Editor Shortcut Keys* in the *Using Natural Studio* documentation.

▶ **To expand or collapse all blocks**

- From the **View** menu, choose **Expand All** or **Collapse All**.

   Or:
   Choose the 🔲 **Expand All** or the 🔲 **Collapse All** toolbar button.

Navigating between Field Levels

You can navigate through the level hierarchy of fields contained in a data area.

▶ **To navigate to the next lower field level**

- From the **View** menu, choose **Next Level**.

   Or:
   Press CTRL+SHIFT+I.

   Or:
   Choose the **Next Level** toolbar button.

   The first field with a lower level is selected.

▶ **To navigate to the next higher field level**

- From the **View** menu, choose **Previous Level**.

   Or:
   Press CTRL+SHIFT+J.

Or:
Choose the **Previous Level** toolbar button.

The first field with a higher level is selected.

Saving and Cataloging Data Areas

You can save source code of a data area as a source object and/or a cataloged object (generated program) in the current Natural library in the current Natural system file.

For the naming conventions that apply to an object, refer to *Object Naming Conventions* in the *Using Natural Studio* documentation.

▶ To save source code as a source object

- Proceed as described in *Saving Objects* in the *Using Natural Studio* documentation.

▶ To save source code as a source object and/or a cataloged object

- Proceed as described in either *Stowing Objects* or *Cataloging Objects* in the *Using Natural Studio* documentation.

Generating Copycode from Data Areas

This function generates a Natural object of the type copycode from a data area. The DEFINE DATA statement in the copycode then contains the data definitions from the current data area. You can then edit the generated copycode with the program editor.

▶ To generate copycode

1. Open the data area from which you want to generate copycode.

2. From the **Object** menu, choose **Generate** or press SHIFT+G.

   An **Untitled - Copycode** window appears that contains the source code of the data area.

3. Save the copycode as a source object by proceeding as described in *Saving Objects* in the *Using Natural Studio* documentation.