Table of Contents

CHAPTER 1 Introduction

This document is a reference document that aids in the process of defining source data for the SINAUT **Spectrum** Base Applications.

The information provided in this user guide include SDM form descriptions for interactive data entry, guidelines for collecting the source data, the import record formats, and the detailed definitions of the import record attributes.

It is intended for data engineers who understand the power system characteristics and who are thoroughly knowledgeable about the topics covered by the various data analysis user guides. Additionally, the data engineer's role requires an understanding of database concepts to ensure that the correct and appropriate data is both initially incorporated and maintained in the source database and in the Operational Database (ODB).

CHAPTER 2

Prerequisites

Before you attempt to use your SDM to define or modify data, you should have at least a basic knowlegde of

- The SINAUT **Spectrum** data model and its application for your network

  This is an unconditional prerequisite for your data entry work with SDM. Only the knowledge of the SINAUT **Spectrum** data model and its application for your individual network (this is what we call “network data analysis”) which will guarantee that you are fully aware of the consequencies of your data entry.

  We strongly recommend that you read the *Base Applications Data Analysis* user guide for this purpose and that you perform the network data analysis described in this document before you start working with SDM.

- The principles, features and basic procedures of SDM

  To achieve this knowledge, we recommend that you complete the SDM class before you start working with SDM. This class will help you to understand what comprises SDM and how to use it. In addition to that you may use this user guide as a reference if you need specific information on SDM forms and procedures.

- SDM forms

  Before you can go into the details of the SDM forms, it is necessary to know the basic principles, features and operation procedures that are common to all SDM forms. The knowledge of these basics will help you to improve your understanding of the following chapters.

  For a comprehensive description of these topics, please refer to the appropriate chapter in this document which will provide the necessary knowledge.

CHAPTER 3

SDM Basics

This chapter deals with basic SDM principles. It describes the following major aspects of SDM:

- Basic concepts and operation procedures that apply to all SDM forms
- The basic structure of the SDM forms

SDM Basics

Before you can go into the details of specific SDM forms, it is necessary to know the basic principles, features and operation procedures that are common to all SDM forms. The knowledge of these basics will help you to improve your understanding of the following chapters dealing with details of specific SDM forms.

☞ *Note:*

The following detailed SDM form descriptions will presuppose knowledge of the basic SDM principles, features and operation procedures.

Job Management

The method by which database changes are grouped and controlled is called *Job Management*. It applies to SDM forms just as it would to any other data changing process. In order to modify data, you must be connected to a legitimate job that is in status `Ready`.

To connect to a job, i.e., to resume an existing job or to create a new job, enter the job name into the text field of the attribute **Job Name** in the Job Management Form. Other actions related with job management are performed via the Job Log Form. For further details on

these forms, refer to the sections ’Job Management Form’ on page 34 and ’Job Log Form’ on page 50.

You will not be able to insert, update and delete data via a SDM form, if you are not connected to a job or if you are connected to an unavailable job. In this case, the rights to insert, update and delete data will be disabled for the respective SDM form. In other words, you will solely have a read-only access to the concerned data.

Job Interlocks

Job interlocks prevent different jobs from modifying the same data by locking the data the jobs uses. This means that you cannot modify data which are locked by another job and other jobs cannot modify data your job has locked.

Job interlocks are enforced in two ways depending on the hierarchical level of the data to be modified:

- For entire forms

  This type of job interlock is enforced for data entities on a lower hierarchical level of a data hierarchy (for example: Elem is the 4th hierarchical level of the SCADA data hierarchy B1/B2/B3/Elem/Info, etc.). A job interlock may exist for all attributes of all data records shown in the respective form. The job interlock information is shown in the display field of the attribute **Job Interlock** in the Job Block of the respective form.

  For example: if you intend to modify an element record (identified by a particular technological identifier composed of B1, B2, B3 and Element Names) and another operator already modifies a B1, B2 or B3 data record involved in the technological identifier of your element record, a job interlock on your Element Form will exist. You will not be able to apply modifications on any attribute of your element record as long as the job interlock exists.

- For individual data records shown in a form

  This type of job interlock is enforced for top-level data entities (for example: B1 is the top-level data entity of the SCADA data hierarchy B1/B2/B3/Elem/Info, etc.). Different job interlocks may exist for different data records shown in the respective form. The job interlock information is associated with the concerned data record. Usually, the respective form contains a tabular list that shows the available data records. In this case, the job interlock information is shown in a separate column of this list.

  For example: if you intend to modify B1 blocks via the B1 Form, you might notice, that the tabular list contains a column **Job Interlock** that shows the job interlocks for the available B1 records.

In either case, the following rule applies:

If the value in the job interlock field is zero (blank), you can perform your data modification. If the concerned data are locked by another job, the name of the job that “holds” the interlock will appear in the job interlock field.

To view a job's interlock history and other pertinent job interlock information, use the Job Interlock Form. For more details on this form, refer to the section 'Job Interlock Form' on page 57.

Validation

Every attempt is made to validate data at the earliest possible moment. If a data entity can be verified at the item level, it is automatically verified. If data can only be verified within the context of an entire record, the validation will occur at the record level. If verification of data requires that a number of records be completed or that an entire set of data be in place, validation will occur during Global Validation.

Item Level Validation

Simple data checks of single attributes will occur at the item level. If you modify an attribute so that its new value exceeds the attribute's value range or if you enter a value that is not in the attribute's list of valid values, SDM will notify you that the attribute value is not valid.

If validation fails, the cursor is moved back into the input field of the invalid attribute and an error message will appear in the window message line of the respective SDM form. It is recommended that you correct the error before you continue. However, if this is one of those cases where the entered value shall violate the validation rule, you may ignore the error message and continue. The error will not be indicated a second time. Although SDM will not bother you with error messages beyond the first message, an error message for each uncorrected attribute will be stored in the error message table when you finally commit your changes (for further information on this topic, refer to the section 'Error Messages' on page 6 in this chapter).

Record Level Validation

Data checks that require the comparison of two or more attributes within a data record will be performed at the record level. Errors will be indicated if you move the cursor out of the modified data record.

If validation fails, an alert window will appear. This alert window offers you the following options: "Fix Data Errors" or "Skip Validation". It is recommended that you correct the error before you continue. However, if this is one of those cases where the entered value shall violate the validation rule, you may ignore the error message and continue. The error will not be indicated a second time.

Although SDM will not bother you with error messages beyond the first message, an error message for each uncorrected attribute will be stored in the error message table when you finally commit your changes (for further information on this topic, refer to the section 'Error Messages' on page 6 in this chapter).

Global Validation

Global Validation compares data between similar data records, between different types of data records, and between data records of various data hierarchies. By its nature, Global Validation requires that you have the data in a stable state before you perform it. Global Validation can be performed whenever you complete a data editing session and is enforced before you attempt to perform a job transfer.

Hints

Hints are short messages describing data attributes. They will appear in the window message line of an SDM form after a mouseclick on the input field of an attribute shown in the respective form. Hints are generated from the domain information defined for the respective column in the concerned source database table.

A hint will be displayed only if the message that was previously shown in the window message line was blank or another hint. If the previous message was an error message, the hint will not be displayed. Sometimes, when you move the cursor to the input field of another attribute after an error message has been displayed, the hint related with the currently selected attribute will not be displayed. If you want the hint to be displayed, click on the input field of a another attribute and then click on the input field of the desired attribute again.

Error Messages

Ignoring error messages if they initially appear will not cause a loss of data. All error messages are written into the corresponding source database message table when the data modifications are applied to the database. Depending on the current situation, error messages will be displayed in the window message line of the respective SDM form or in a separately opened alert window.

If errors occur during the apply transaction of data modifications, an alert window will be displayed indicating the number of error messages that have been stored in the corresponding source database message table. If you press the button **MSG** in the SDM Toolbar immediately after you have acknowledged this message, the Error Message Form will appear and will show the first error of those error messages.

Queries

If you select an SDM form, it will automatically come up with a full set of data if valid preset values have been provided in the Job Management Form. In this case, the logic behind the form is able to perform an automatic query on the requested data based on the provided preset values. However, if no preset values have been specified in the Job Management Form or if the specified preset values are invalid, the form comes up empty and will automatically switch to Query Mode. This means, the first action you must perform before you can work with the respective SDM form must be a query to retrieve data to work with.

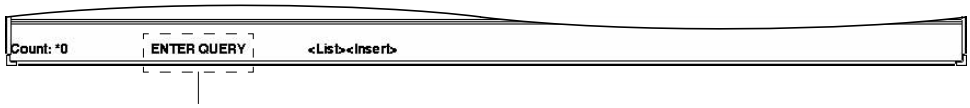
Even if your preset values are correct and the SDM form has come up with a full set of data, you may perform a new query to retrieve another set of data to work with.

Query Mode

If no preset values have been specified in the Job Management Form or if the specified preset values are invalid, a selected SDM form comes up empty and switches automatically to Query Mode.

Query Mode can be recognized by an appropriate system message that appears in the window status line of the respective SDM form (see figure 1 below), by the status of the SDM Toolbar (all buttons of the SDM Toolbar, except the button **Query**, are disabled) and the content of the input fields of the concerned SDM form (when entering Query Mode, the input fields are emptied).

FIGURE 1 Indication of Query Mode in the Status Line of the respective SDM form



This system message indicates Query Mode

If the SDM form you have selected comes up in Query Mode, you must perform a query before you can perform your intended data modifications. Detailed information on how to perform a query can be obtained from the section 'Performing a Query' on page 11 in this chapter.

☞ *Note:*

If the selected SDM form is in Query Mode and a query has not been performed, any operation that is not involved in performing a query will be rejected and an appropriate system message will appear in the window message line of the respective SDM form.

Even if you can obviously enter data into the text fields of the respective SDM form, you will not be able to store these entries in the database since the buttons of the Command Block are disabled.

After you have performed a query, Query Mode is terminated automatically.

If your SDM form is currently not in Query Mode and you want to perform a query, you must invoke Query Mode and then you can enter the Query Criteria and perform your query. For more details on how to perform a query, refer to the section 'Performing a Query' below.

Query Mode can be cancelled (even without performing a query) by selecting `Exit` from the File menu in the SDM Menubar. After the Query Mode has been cancelled, the buttons of the SDM Toolbar and the buttons of the Command Block in your SDM form might be enabled, if appropriate. Then, you can select another SDM form from menus of the SDM Menubar or you can enter new data into the empty form.

☞ *Note:*

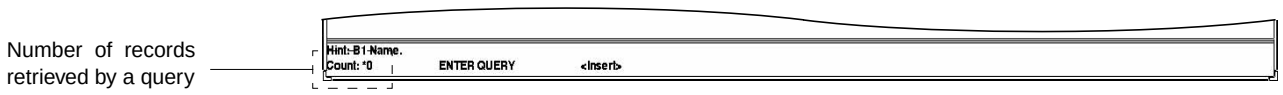
If you enter new data into your empty form and you apply those data modifications by pressing the button **Apply** *in the Command Block of your form, your data modifications will be applied to the source database and a query on all available data records of the respective data entity will be performed.*

Query Criteria

Using the query feature, all available data records of a specific data entity or a subset of the available data records matching certain query criteria can be retrieved.

The number of retrieved data records will be displayed in the Status Line of the respective SDM form.

FIGURE 2 Number of retrieved data records indicated in the Status Line of the SDM form



For the retrieval of a subset of the available data records that match certain criteria, the SDM forms provide the following possibilities to specify query criteria:

- Retrieval of data records matching exact values

  You can retrieve specific data records by entering exact values for the query criteria. For example, if you enter `Vienna` into the text field of the attribute **B1-Name** in the Master Block of the B3 Form and `220` into the text field of the attribute **B1-Name** in the Master Block of the B3 Form, the query will select all records in which the B1-block name is `Vienna` and the B2-block name is `220`.

- Retrieval of data records matching a search patterns

  You can also retrieve data records that match a particular search pattern composed of a value (e.g., a character string) and the wildcard characters underscore (“_”) or percentage (“`%`”) or a combination of both.

  The wildcard character “_” represents any single character. The wildcard character “`%`” represents any combination of characters (including no character). For example, the B1-block name `Vienna` would match both the search pattern `Vienn_` and the search pattern `Vie%`.

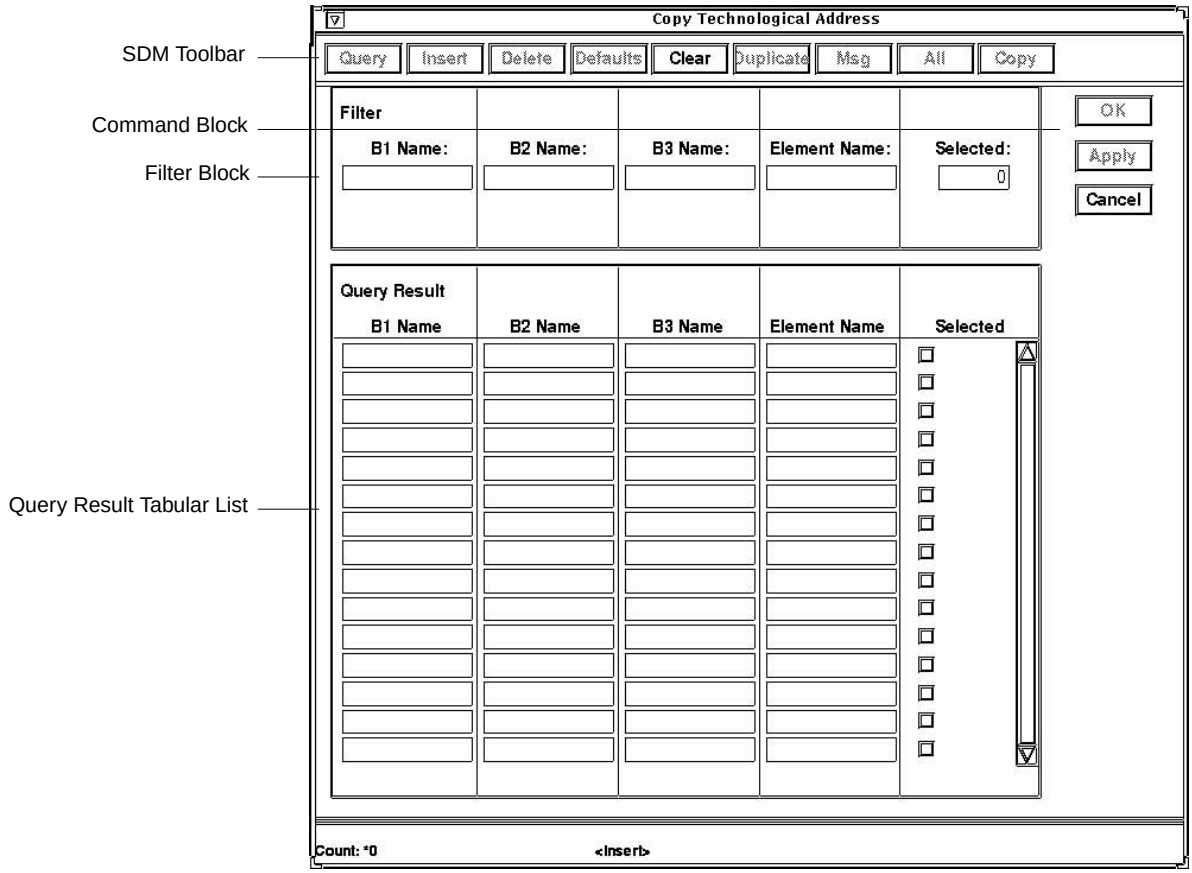
Query Window

Besides Query Mode and the query facilities in the Master Block, SDM provides a particular window for the retrieval of technological addresses. This window is called “Query Window”.

It allows you to perform a query on technological addresses via a convenient user interface. The retrieved technological addresses may be copied into an internal clipboard and then be taken over into a SDM form with a simple Copy and Paste-procedure.

Figure 3 on page 9 (below) shows you the basic structure of the Query Window:

FIGURE 3 Structure of the Query Window



- SDM Toolbar

  Besides the seven standard toolbar buttons (see section 'SDM Toolbar' on page 21 for more details), the SDM Toolbar of the Query Window provides the following additional buttons:

  – **All**

    Pressing this button selects all available technological addresses from the Query Result Tabular List. The check boxes of the selected technological addresses in the column **Selected** of the Query Result Tabular List are automatically checked.

☞ *Note:*

The button **All** *remains disabled until at least one technological address is available in the Query Result Tabular List.*

– **Copy**

If you press the button **Copy** in the SDM Toolbar of the Query Window, the selected technological addresses from the Query Result Tabular List are copied to the internal clipboard.

☞ *Note:*

The button **Copy** *remains disabled until at least one technological address has been selected from the Query Result Tabular List.*

- Command Block

  Basically, the Command Block of the Query Window contains the same buttons as the standard Command Block in a SDM form (see section 'Command Block' on page 26 for more details).

☞ *Note:*

The buttons ***OK*** *and* ***Apply*** *remain disabled.*

  - **OK**
  - **Apply**
  - **Cancel**

    Pressing the button **Cancel** button closes the Query Window.

- Filter Block
  - **B1-Name**
  - **B2-Name**
  - **B3-Name**
  - **Element Name**

    The text fields of these 4 attributes can be used to enter the query criteria (search pattern).

☞ *Note:*

Unlike the other query facilities, characters such as "%" or "_" will not be considered as wildcard characters (see section 'Query Criteria' on page 8 for more details on wildcard characters).

– **Selected**

Shows the number of the currently selected technological addresses from the Query Result Tabular List. Read-only display field.

■ Query Result Tabular List

The Query Result Tabular List shows the result of a query performed via the Query Window. It contains the technological addresses matching the search pattern specified by values of the attributes **B1-Name** ... **Element Name** in the Filter Block. Each line of the tabular list represents a single technological address. The columns **B1-Name** ... **Element Name** contain the attribute values of the respective technological address. The column **Selected** contains a check box that can be used to select the respective technological address.

– **B1-Name**

– **B2-Name**

– **B3-Name**

– **Element Name**

These 4 attributes represent a retrieved technological address. Read-only display fields.

– **Selected**

A check box that is used to select the concerned technological address. Click on this check box to toggle its status from `not checked` to `checked` and vice versa. To select a technological address, the concerned check box must be checked.

Performing a Query

1. Press the button **Query** in the SDM Toolbar.

   This action empties the SDM form and puts it in Query Mode.

☞ *Note:*

The following step 2 is optional and may be omitted.

2. Enter the query criteria.

   If a query is performed without setting specific query criteria, all data records of the respective data entity (for example, all B1 block records, all application data characteristic group records, etc.) are retrieved.

   Depending on the selected SDM form, enter the query criteria either into the text fields of the Master Block or in another accessible text field.

☞ *Note:*

If your SDM form provides a Master Block, you must enter the query criteria into the text field(s) of the Master Block.

3. Press the button **Query** in the SDM Toolbar.

   This action executes the query and retrieves all data records from the concerned source database tables that match the query criteria. If no query criteria are entered, then all records will be retrieved. If no records match the query criteria, no records will be retrieved and an appropriate system message will appear in the window message line of the respective SDM form.

Performing a Query using the Query Window

1. Press the button **Query TAs** in the SDM Toolbar to call up the Query Window.

☞ *Note:*

The button **Query TAs** *might be disabled. Refer to the description of the SDM Toolbar in the specific SDM form for more details on the availability of this button.*

The Query Window pops up.

2. Enter your search pattern into the text fields **B1-Name** ... **Element Name** in the Filter Block.

☞ *Note:*

Wildcard characters will not be considered (see the description of the attributes in the Filter Block on page 10 for more details).

Initially, the Query Window will be in data entry mode (the button ***Query*** *in the SDM Toolbar of the Query Window will be disabled). It switches automatically to Query Mode if you enter a character into the text fields* ***B1-Name*** *...* ***Element Name*** *in the Filter Block (the button* ***Query*** *in the SDM Toolbar of the Query Window will be enabled).*

3. Press the button **Query** in the SDM Toolbar.

   This action executes the query and retrieves all technological addresses from the concerned source database tables that match the entered search pattern. If no technological addresses match the search pattern, no technological addresses will be retrieved.

   The retrieved technological addresses will be shown in the Query Result Tabular List.

Query And Paste Technological Addresses Using The Query Window

1. Open the Query Window and perform your query as described in the section 'Performing a Query using the Query Window' above.

☞ *Note:*

For the following procedure description we assume that technological addresses have been retrieved.

Steps 2 and 3 may be performed alternatively. You may perform either of these steps and omit the other.

2. Select the desired technological addresses from the Query Result Tabular List by clicking on the concerned check box in the column **Selected** of the Query Result Tabular List.

   The number shown in the display field of the attribute **Selected** in the Filter Block will be updated each time you select or de-select a technological address.

3. Select all technological addresses from the Query Result Tabular List by clicking on the button **All** in the SDM Toolbar of the Query Window.

4. Press the button **Copy** in the SDM Toolbar of the Query Window to copy the selected technological addresses to the internal clipboard.

5. Press the button **Cancel** in the Command Block of the Query Window to close the Query Window.

6. Paste the technological addresses from the internal clipboard into the currently selected data record of your SDM form by pressing the button **Paste** in the SDM Toolbar of the respective SDM form.

☞ *Note:*

If the cursor is currently located in a tabular list and you are going to paste several technological addresses, the technological addresses will be inserted in the appropriate columns of successive rows in the list.

For example: Let's assume your SDM form contains a tabular list with columns representing a technological address. Your cursor is currently located in the first row of this list. Now, you perform a query using the Query Window and you copy and paste 3 technological addresses. The first technological address will be inserted into the appropriate columns of the row where the cursor is located, the second technological address in the appropriate columns of the next row, and so on.

The List Of Values (LOV) Feature

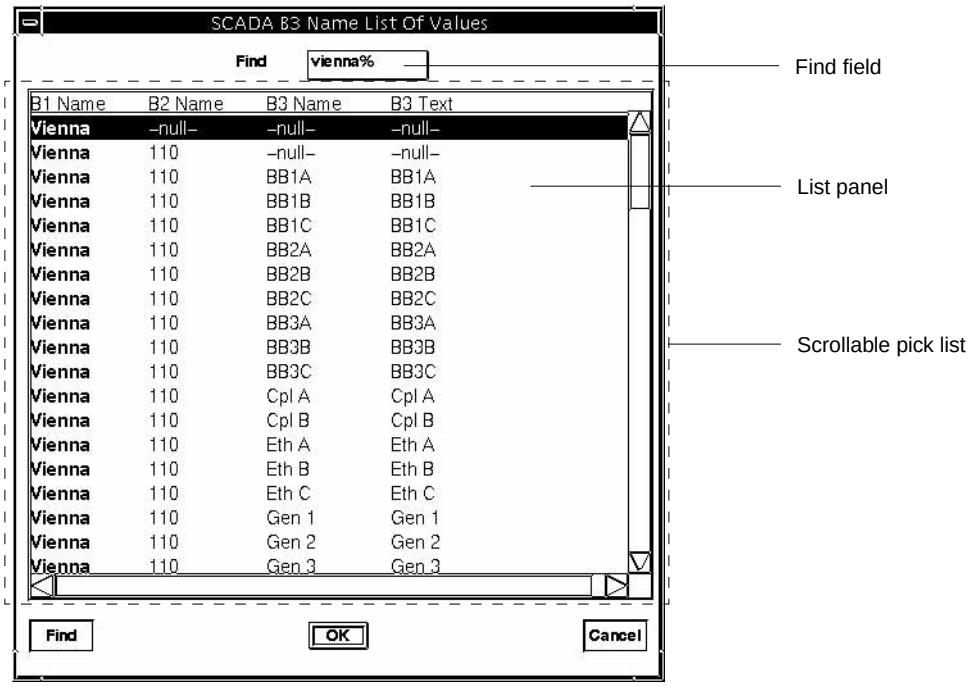
Any attribute of a data entity may have an associated static list of valid values. This list may either be defined in the concerned database table of the source database or may be established for the concerned form component during the form creation.

SDM forms support these lists by the List Of Values (LOV) feature. A list of values is a scrollable list in a separate window that pops up if you double-click on an input field that has an assigned list of valid values (for an example, see figure 4 on page 14).

List of Values Window

The List of Values Window contains a scrollable pick list that shows a list of single-column or multi-column entries from which you can select a single, distinct value (in case of single-column entries) or a set of values (in case of multi-column entries). The list entries correspond to columns in a database table or to static values that have been established during the form creation (see first paragraph of the section 'The List Of Values (LOV) Feature' above).

FIGURE 4 Example of a List of Values Window



A list of values appears as a modal window which can be moved and resized. It contains the following components:

- Find field

  The Find field can be used to search specific list entries (refer to the section 'Searching specific list entries' on page 15 for further details).

- List panel

  The List panel shows the LOV entries (single-column entries or multi-column entries).

- Three buttons
  - **Find**
  - **OK**
  - **Cancel**

Selecting a value from the list of values

To select a value from a list of values, perform one of the following procedures:

- Double-click on the desired list entry

  The value will be selected and the List of Values Window will be dismissed automatically.

- Highlight a value by clicking on the desired list entry

  The value will be only be highlighted.

- Click on the desired list entry or on the highlighted list entry and dismiss the list of values by pressing the button **OK** in the List of Values Window

  The value will be selected. The List of Values Window will be dismissed after the button **OK** has been pressed.

- Dismiss the List of Values Window without choosing a value by pressing the button **Cancel** in the List of Values Window

Searching specific list entries

The List of Values Window contains a Find field (see figure 4 on page 14) that can be used to search the list entries of the list of values matching entries:

1. Click on the Find field and enter your search pattern.

   The search pattern may contain the wildcard character "%". The wildcard character "%" represents any combination of characters (including no character).

2. Hit the **Return** key on your keyboard or press the button **Find** to perform the search.

   The list panel will be re-configured and will show only matching list entries.

Auto-reducing the number of list entries

1. Click on the List panel and enter your search pattern.

   The list of values will automatically be reduced to those values that match your entry.

☞ *Note:*

Since the list will be reduced after each single keystroke, it might happen that further entries will produce no search result. Pressing the **Backspace** *key on the keyboard will restore the previous search result.*

Selecting technological addresses

Selecting technological addresses from a list of values is done in the same way as for other data. For example: double-click on the input field of a B1, B2, B3 or Elem attribute in your SDM form and the List of Values Window appears.

However, the content of the List of Values Window depends on the type of the concerned attribute (B1, B2, B3 or Elem) and on the attribute values of the other attributes of the concerned technological address. For example: if you open a list of values from a B2 attribute and the concerned B1 is empty, the list of values will show all available B1/B2-combinations. If you specify a B1 and then you open the list of values from the concerned B2 attribute, the list of values shows all poosible B1/B2-combinations containing the specified B1, etc.

Creating New Data Records

☞ *Note:*

Step 1 and Step 2 describe alternative methods to create a new data record. You may use either of them and omit the other.

1. Move the cursor to the position where you want to place the new data record and press the button **Insert** in the SDM Toolbar.

   A new (empty) row will be inserted into the tabular list where you can enter your new attribute values. For more information on the button **Insert** in the SDM Toolbar, refer to its description on page 22.

2. Instead of inserting a new data record somewhere within a tabular list, you can also create a record by scrolling the tabular list to the end using the scrollbar and moving the cursor to the very last (empty) row in the list. Simply enter the new attribute values there.

☞ *Note:*

Steps 3, 4 and 5 are optional and may be omitted.

3. To fill your new data record with default values (if those are available), press the button **Defaults** in the SDM Toolbar. For more information on this feature, refer to the description of the button **Defaults** on page 23.

4. If you want to use an available data record as a template for a new data record, move the cursor to the data record that shall be used as a template and press the button **Insert** in the SDM Toolbar.

   A new (empty) row will be inserted into the tabular list where you can enter your new attribute values (see step 1, too).

5. Move the cursor to the newly inserted row and press the button **Duplicate** in the SDM Toolbar. The new row will be filled with the attribute values of the preceding data record. For more information on the duplicate feature, refer to the description of the button **Duplicate** on page 24.

6. Complete the creation of the new data record and save it in the database by pressing the button **Apply** in the Command Block of the respective SDM form (refer to the sections 'Applying Transactions' on page 17 and 'Command Block' on page 26 for more details on the button **Apply**).

Updating or Modifying Existing Data Records

1. Select the desired data record by clicking on one of the input fields of the concerned row in the tabular list.
2. Change the desired attributes by entering new attribute values in the concerned input fields of the selected row.

☞ *Note:*

The modified attribute value will be highlighted.

If an attribute that you update is a foreign key in another database table, an alert window will appear which informs you that a modification of the concerned attribute value will result in a cascading rename of all dependent child records. The alert window always offers you the option to cancel or to continue the transaction.

3. Complete the modification of the selected data record and save the changes in the database by pressing the button **Apply** in the Command Block of the respective SDM form (refer to the sections 'Applying Transactions' on page 17 and 'Command Block' on page 26 for more details on the button **Apply**).

Deleting Existing Data Records

A delete transaction will remove one or more records from the database. It removes at least the current row (the row where the cursor is located), but it may also remove several records. Multiple row deletion is known as a cascading delete.

1. Select the desired data record by clicking on one of the input fields of the concerned row in the tabular list.
2. Perform the deletion by pressing the button **Delete** in the SDM Toolbar.

For detailed information on the deletion of data records refer to the description of the button **Delete** in the SDM Toolbar on page 22).

Applying Transactions

When you use a form and you perform modifications on the contained data, these data modifications are not directly applied to the database. Instead, they are collected in a so-called “work space”.

To make your modifications permanent, you must commit the contents of the work space by pressing the button **Apply** or the button **OK** in the Command Block of the respective SDM form. After you have pressed one of these buttons, the data modifications collected in the work space are applied to the database.

For more information on the buttons of the Command Block, refer to the section 'Command Block' on page 26.

Clear

This feature allows you to empty the input fields of a data record. To clear the input fields of a data record, simply press the button **Clear** in the SDM Toolbar.

For more information on this feature, refer to the description of the button **Clear** on page 23.

Obtaining Information on Error Messages

If you perform a transaction (e.g., a data modification) and an error occurs, a message indicating the occurrence of an error will appear in the Message Line of the respective SDM forms.

For detailed information on the concerned error, select the Help menu from the SDM Menubar and click on the **Error** choice. This menu choice will display error information and/or detailed help information for the item that caused the last error.

The Model Feature

SDM provides a model feature that allows you to copy an entire data hierarchy and to insert it as a new data hierarchy into the source database.

Unlike the Duplicate feature which is used to create and insert a copy of a single data record, the model feature copies all data records of the selected data hierarchy and inserts these data records as a new data hierarchy into the source database.

For example: the model feature allows to create a new B1 block (e.g., a new substation) as a copy of an existing B1 block. All subordinate data entities of the B1 block model (all B2-data records, B3-date records, etc.) will be copied and inserted automatically.

The model feature is performed via the Model Form.

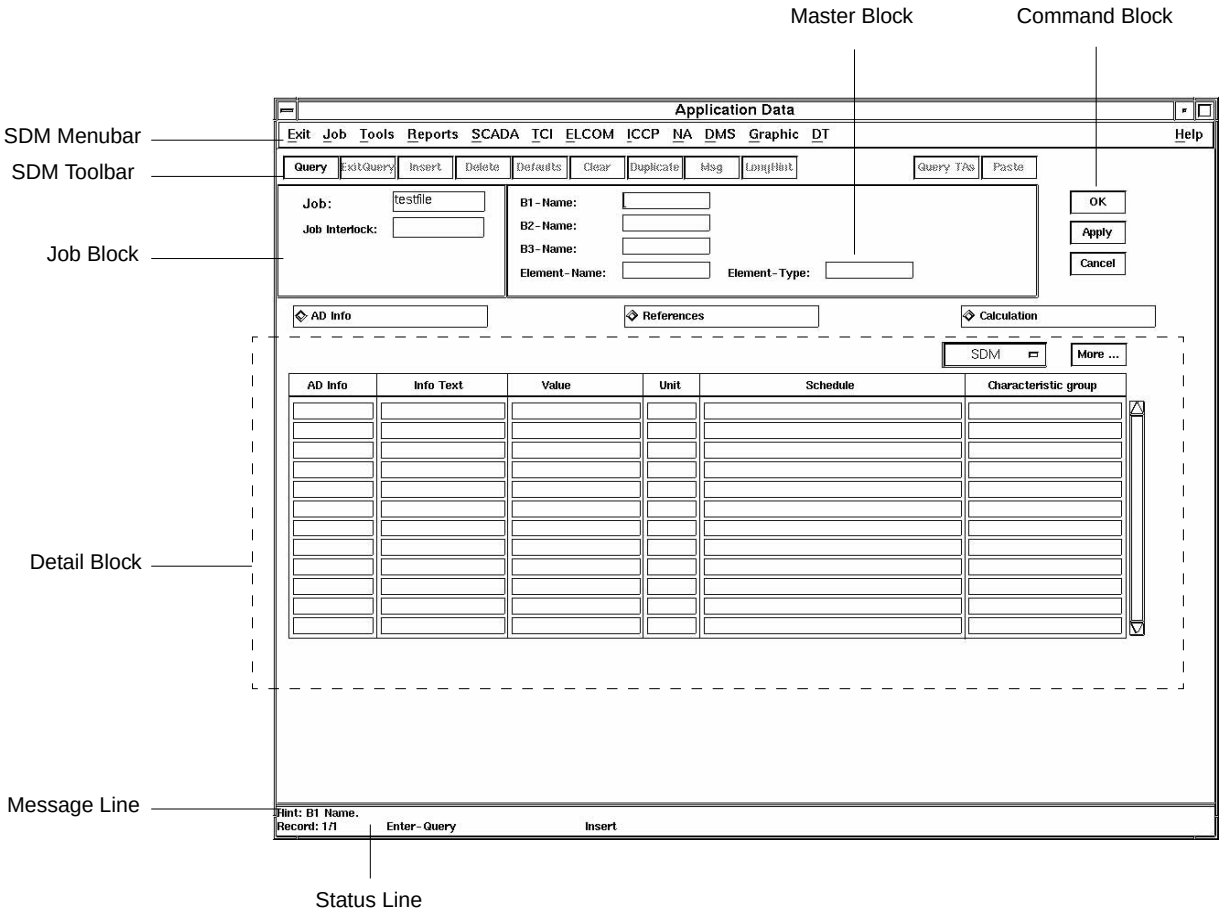
For more information on the Model Form, refer to the section 'Model Form' on page 65. Further details on the Duplicate feature can be obtained from the description of the button **Duplicate** on page 24.

The Basic Structure of SDM Forms

All SDM forms are composed of the same basic form components. This common standardized structure supports the operator in becoming familiar with the SDM forms. However, depending on the form's intended purpose certain SDM forms will not need some of the components provided by the common structure and the structure of other SDM forms will slightly deviate from this standard. Those differences are indicated in the subsequent SDM form descriptions.

The following figure 5 shows you the standardized form components using the Application Data Info Form as an example.

FIGURE 5 Basic Structure of a SDM form



Each SDM form is composed of the following form components:

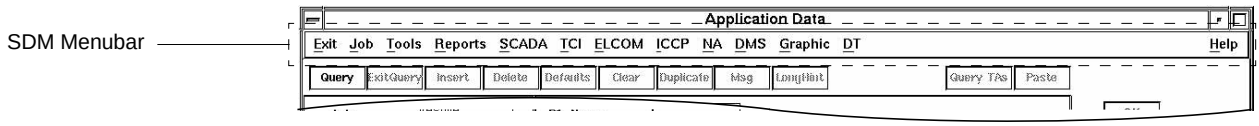
- SDM Menubar

- SDM Toolbar
- Job Block
- Master Block (optional)
- Command Block
- Detail Block
- Message Line
- Status Line

SDM Menubar

Each SDM form provides a menu bar (the “SDM Menubar”), which is located at the top of an SDM form and runs across the entire SDM form (see figure 6 below).

FIGURE 6 SDM Menubar



The SDM Menubar contains the following menus:

- **File**

  The File menu provides form-related actions. For example: Exit from form.

- **Job**

  Use the Job menu to select organizational SDM forms dealing with job and task management, such as Job Management Form, Job Log Form, Job Trace Form, Job Interlock Form, etc.

- **Tools**

  Perform various SDM actions by selecting organizational SDM forms like the Model Form, Reverse Transfer Form, etc.

- **Reports**

  Create application-specific reports by selecting the appropriate form via the Reports menu.

- **Help**

  Get online help Information by selecting the appropriate help topic from the Help menu.

The following menus can be used to access application-specific SDM forms:

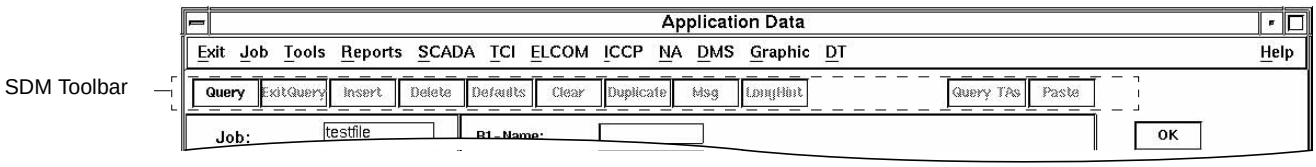
- **SCADA**

- **AD**
- **TCI**
- **ELCOM**
- **ICCP**
- **NA**
- **DMS**
- **Graphic**

SDM Toolbar

The SDM Toolbar is a row of buttons located beneath the SDM Menubar and provides fast access to important SDM features, e.g., creating, editing or deleting a data record, etc. (for an example of a SDM Toolbar, see figure 7 below).

FIGURE 7 Example of a SDM Toolbar



The standard SDM Toolbar provides seven buttons (see description below). These buttons are available in each application-specific SDM form.

☞ *Note:*

Other buttons may be available depending on the selected SDM form and the current situation.

Depending on the selected SDM form and the current situation, some of the provided buttons may be disabled. Buttons provided in the SDM Toolbar will be enabled or disabled dynamically.

If more buttons are available than the eight buttons described below, refer to the description of the concerned SDM form for more information on those buttons.

The content of the SDM Toolbar in organizational SDM forms might deviate from the described SDM Toolbar configuration. If so, refer to the description of the concerned SDM form for more information on the specific SDM Toolbar.

- **Query**

  If the concerned SDM form is already in Query Mode, pressing the button **Query** performs a query based on the entered Query Criteria.

  If the concerned SDM form was not in Query Mode, pressing the button **Query** puts the form into Query Mode.

For more details on the Query Mode and queries, refer to the section 'Queries' on page 6.

- **ExitQuery**

  If the concerned SDM form is in Query Mode, pressing the button **ExitQuery** leaves the Query Mode without performing a query.

- **Insert**

  Insert new (empty) data record.

  Pressing the button **Insert** creates a new data record. If the cursor is located in a tabular list, a new blank row is inserted into the list beneath that row where cursor is located.

  ☞ *Note:*

  Insert creates a new record, but does not store it. If you want to store the new data record, press the button **OK** *or the button* **Apply** *in the Command Block of the concerned SDM form. For more details on the Command Block, refer to the section 'Command Block' on page 26.*

  In case the button **Insert** *is disabled you are currently not allowed to insert a new data record.*

- **Delete**

  Remove one or more data records from the database.

  Pressing the button **Delete** removes the currently selected data record. If the cursor is located in a tabular list, the currently selected row (the row where the cursor is located) is removed.

  ☞ *Note:*

  You will not be allowed to remove a data record if there are pending data modifications on any attribute of the concerned data record. If the SDM form detects uncommitted data modifications it will request you to commit those modifications or to perform a rollback on those modifications before you can proceed with your deletion.

  If the data record to be removed has associated data records in other database tables (so-called “Child Records”), those data records will also be removed. This is called ”Cascading Delete”. For example, if you remove an application data characteristic group record, this data record may have associated application data characteristic records and these may have associated characteristic segment records. If you press the button **Delete** to remove the application data characteristic group record all associated application data characteristic records and all associated characteristic segment records will also be removed.

  If the data record you are about to remove has associated child records, an alert window will pop up informing you that a cascading delete will be performed. At this point you can cancel the deletion or continue it by pressing the appropriate button in the alert window.

  ☞ *Note:*

Sometimes you may encounter a long waiting time while a delete transaction is performed. This will especially be the case if a deletion is performed which removes a large amount of data from the database (e.g., in case of a cascading delete). Since a lot of activity takes place beneath the surface in such a case, we recommend that you break such transactions down into several smaller transactions. For example, when removing a large B1 block, it would be better, to delete each B2 block individually rather than to delete the entire B1 block at once.

An attempt to perform a delete transaction which is too large to delete may cause an errors, especially if the system is rather busy.

Deletions will automatically change the database. Once a deletion is initiated, it cannot be rolled back.

To reverse the effects of a deletion, use the Cancel Task feature in the Task Log Form (see section 'Task Log Form' on page 60 for more details on this topic).

No specific alert window will appear if a cascading delete removes child data records used in other source database tables. The inconsistency that occurs in such a case will be detected during a global validation.

- **Defaults**

  Assign pre-defined default values to the attributes of the currently selected data record.

  Columns of a source database table may have associated default values which are also defined in the source database. If default values are available for the selected data record, the current attribute values will be replaced by the specified default values after you have pressed the button
  Defaults.

☞ *Note:*

If no default values are available for the selected data record, the button **Defaults** *will be disabled.*

If you intend to use default values on a data record, we recommend to use the **Defaults** *feature before you enter any other information for this data record, since default values will overwrite all related items you have already entered for this data record.*

- **Clear**

  Remove the content of the input fields of the selected data record.

  If you press the button **Clear,** the content of all input fields of the currently selected data record will be emptied. The content of these fields will also be removed from the work space (for more information on the work space, refer tot the section 'Applying Transactions' on page 17).

☞ *Note:*

Unlike **Delete** *(see description on page 22), pressing the button* **Clear** *will not remove the concerned data record from the database.*

If you did not apply your data modifications on the currently selected data record yet, and you have pressed the button **Clear***, the entire data record will be removed. If the cursor is located in a tabular list, the currently selected row (the row where the cursor is located) will be removed.*

- **Duplicate**

  Duplicate the preceding data record and insert this copy as a new data record.

  If you press the button **Duplicate**, a copy of the preceding data record will be inserted as a new data record.

☞ *Note:*

Attributes that require unique information will not be copied and the concerned input fields in the new data record will be left blank. If the cursor is located in a tabular list, the currently selected row (the row where the cursor is located) will be copied and inserted as a new row below the selected row.

- **MSG**

  Open the Error Message Form.

  Pressing the button **MSG** opens the Error Message Form that shows the error messages of the job you are currently connected to. For a detailed description of the information displayed in the Error Message Form, refer to the section 'Error Message Form' on page 72.

- **Longhint**

  Display a long hint text.

  Move the cursor to the input field of an attribute and press the button **Longhint**. Then, the long hint associated with the respective attribute will be displayed in the Message Line of the respective SDM form.

☞ *Note:*

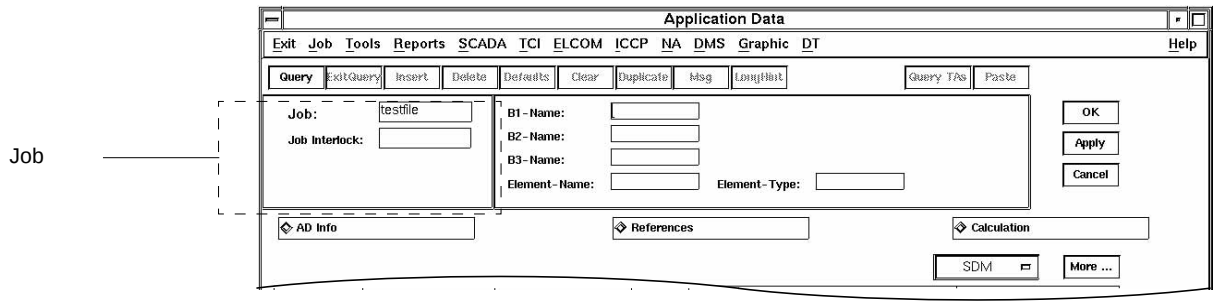
Just like "short" hints (see section 'Hints' on page 6 for details), long hints must be defined in the source database table where the concerned attribute is defined.

If no long hint is available for the respective attribute, the button **Longhint** *will be disabled. The accessibility of the button* **Longhint** *may change every time you move the cursor to another input field depending on the availability of a long hint in the concerned source database table.*

Job Block

The Job Block is located in the upper left corner of an SDM form just below the SDM Toolbar and contains display fields showing job information and job interlock information.

FIGURE 8 Example of a Job Block



- **Job**

  Shows the name of the job accessing the respective SDM form.

- **Job Interlock**

  If a job interlock for the entire SDM form exists, the display field of the attribute Job Interlock shows the name of the locking job.

☞ *Note:*

Depending on the hierarchical level of the data presented by the form, this attribute might not appear. For more details on job interlocks, refer to the section 'Job Interlocks' on page 4.

Master Block

The Master Block is an optional form component. Its availability in a SDM form depends on the form's intended purpose and the hierarchical level of the data presented by the respective SDM form.

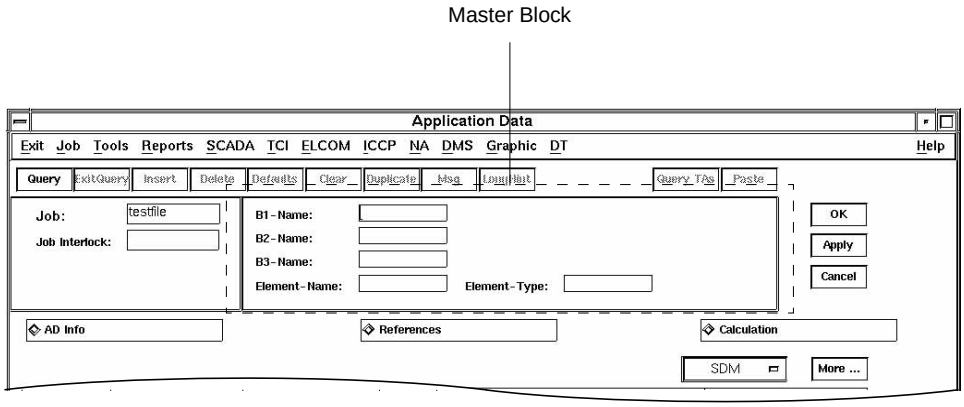
The Master Block provides attributes representing the primary database keys of the concerned data object. The input fields of the provided attributes are used to enter query criteria when performing a query.

☞ *Note:*

Before you can use the Master Block, you must switch to Query Mode. For more details on the Query Mode, refer to the section 'Query Mode' on page 7.

For detailed information on the availability of a master block in a specific SDM form and its content, refer to the description of the concerned SDM form.

FIGURE 9 Example of a Master Block



Command Block

The command block is located in the upper right corner of an SDM form just below the SDM Toolbar and contains the following buttons to apply and discard data modifications performed in the SDM form:

- **OK**

  Applies the performed data modifications to the database and exits the concerned SDM form.

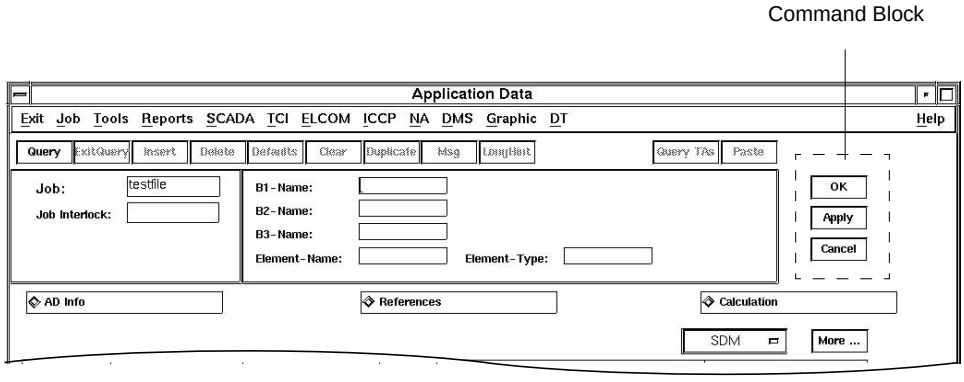
- **Apply**

  Applies the performed data modifications to the database. The concerned SDM form remains and further data modifications can be performed.

- **Cancel**

  Dismisses the performed data modifications. The data modifications will not be applied to the database. The concerned SDM form will be exited.

FIGURE 10 Command Block



Detail Block

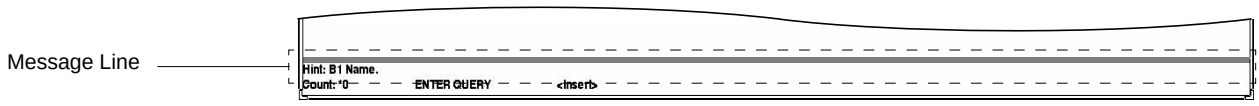
The detail block of a SDM form contains all form components that are provided to perform the form's intended purpose. The actual content of the detail block varies from SDM form to SDM form and may change dynamically depending on the operator's interaction with SDM.

For more details on the form components actually provided by the detail block, refer to the description of the concerned SDM form.

Message Line

Each SDM form contains a message line that is used to display hint texts (for more details, refer to the section 'Hints' on page 6) and system messages. It is located at the bottom of the SDM form and reaches across the entire form.

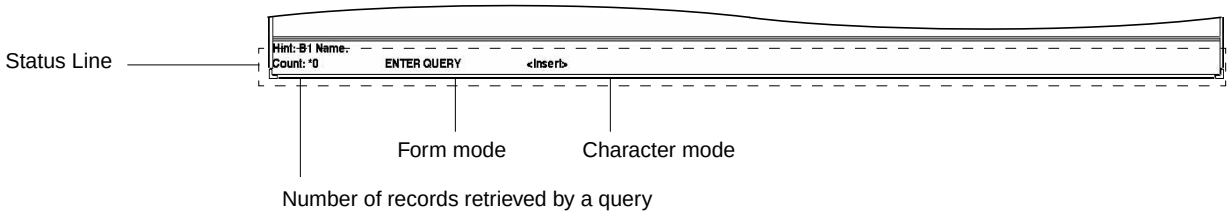
FIGURE 11 Message line



Status Line

Each SDM form contains a status line that is used to indicate modes and other status information. For example: the status line indicates form modes, such as Query Mode (see section 'Query Mode' on page 7), character modes, e.g., insert characters or replace characters, the number of records retrieved by a query, etc. .

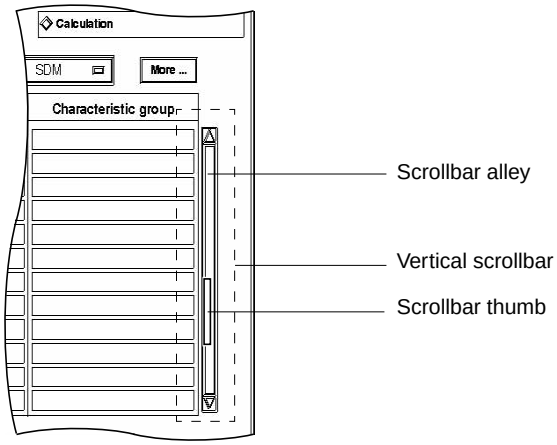
FIGURE 12 Status line



Scrollbars

Scrollbars allow you to quickly navigate through a set of data records, e.g., in a tabular list. Scrollbars can be attached either horizontally or vertically.

FIGURE 13 Example of a vertical scrollbar



☞ *Note:*

The behavior of scrollbars in forms slightly deviates from the behavior of scrollbars you might be familiar with from other applications. The differences are described below.

As usual, the position of the scrollbar thumb in the scrollbar alley gives you a feedback of the relative position of the current data record within the respective set of data records (e.g., within a tabular list). The length of the scrollbar thumb will give you information on the number of retrieved data records.

However, since forms retrieve data records on a package basis, “set of data records” does not necessarily mean “all available data records”, but the set of data records that have been fetched so far. This may or may not include all data records to be retrieved.

This will become obvious if you move the scrollbar thumb to the bottom of the scrollbar alley. In a form, this scrolls the content of the list to the end of the currently fetched data records. In another application, this would scroll the content of a tabular list to the end of the list.

For example, if 100 data records are to be retrieved but only 10 have been fetched so far, moving the scorllbar thumb to the bottom of the scrollbar alley would display the 10th data record, not the 100th. The scrollbar thumb will automatically move up again. Moving the scrollbar thumb down again would cause the form to fetch the next package of data records, and so on. The length of the scrollbar thumb will decrease while the number of fetched data records increases.

Overview of SDM Forms

SDM forms can be divided into the following main groups:

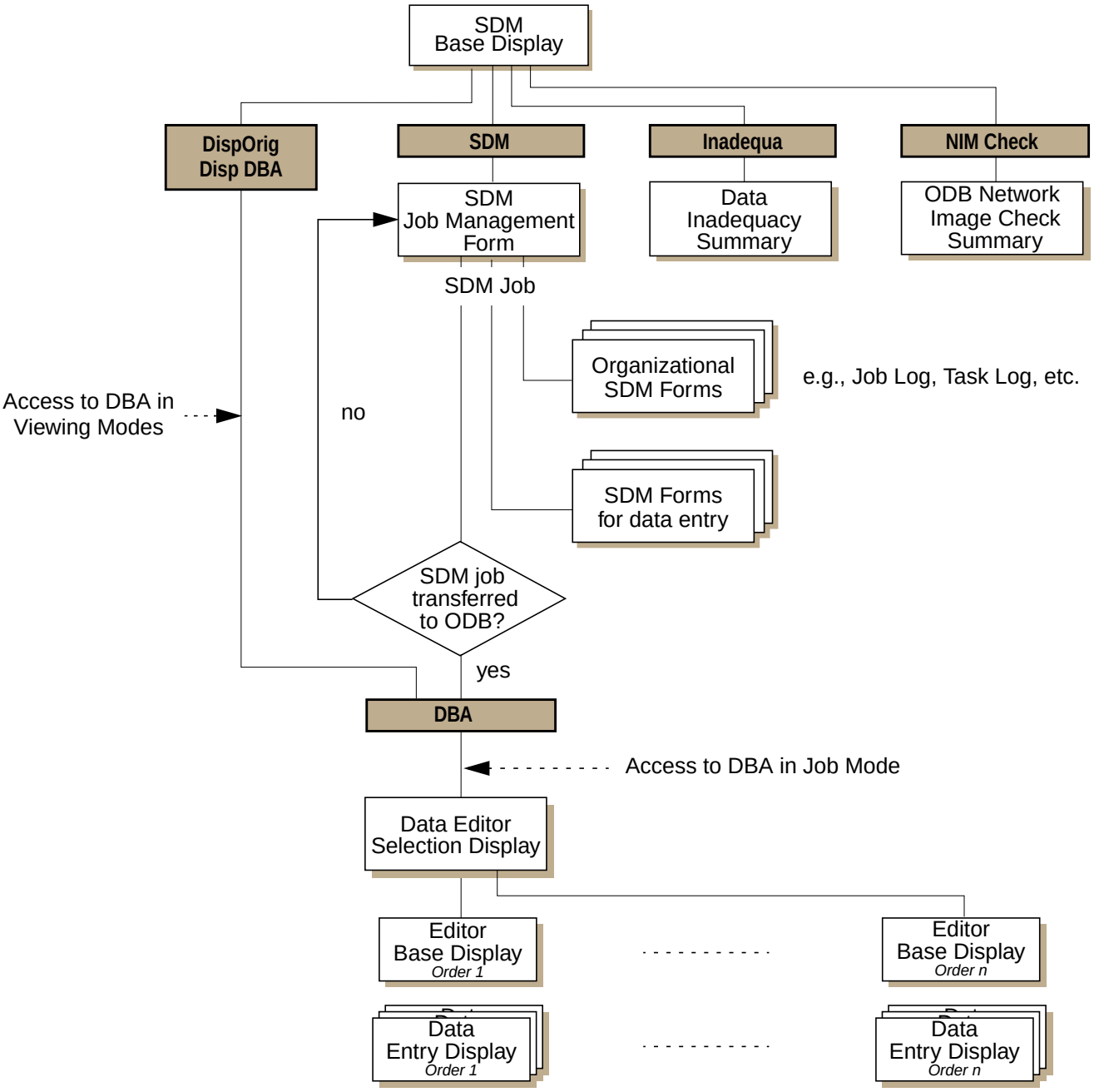
- Organizational SDM forms

  These SDM forms are used for the administration and organization of data modifications.

- SDM forms for data entry

Figure 14 on the following page shows the interconnection between the different SDM forms.

FIGURE 14 Interconnections between the different SDM displays



CHAPTER 4

Organizational SDM Forms

SDM Base Display

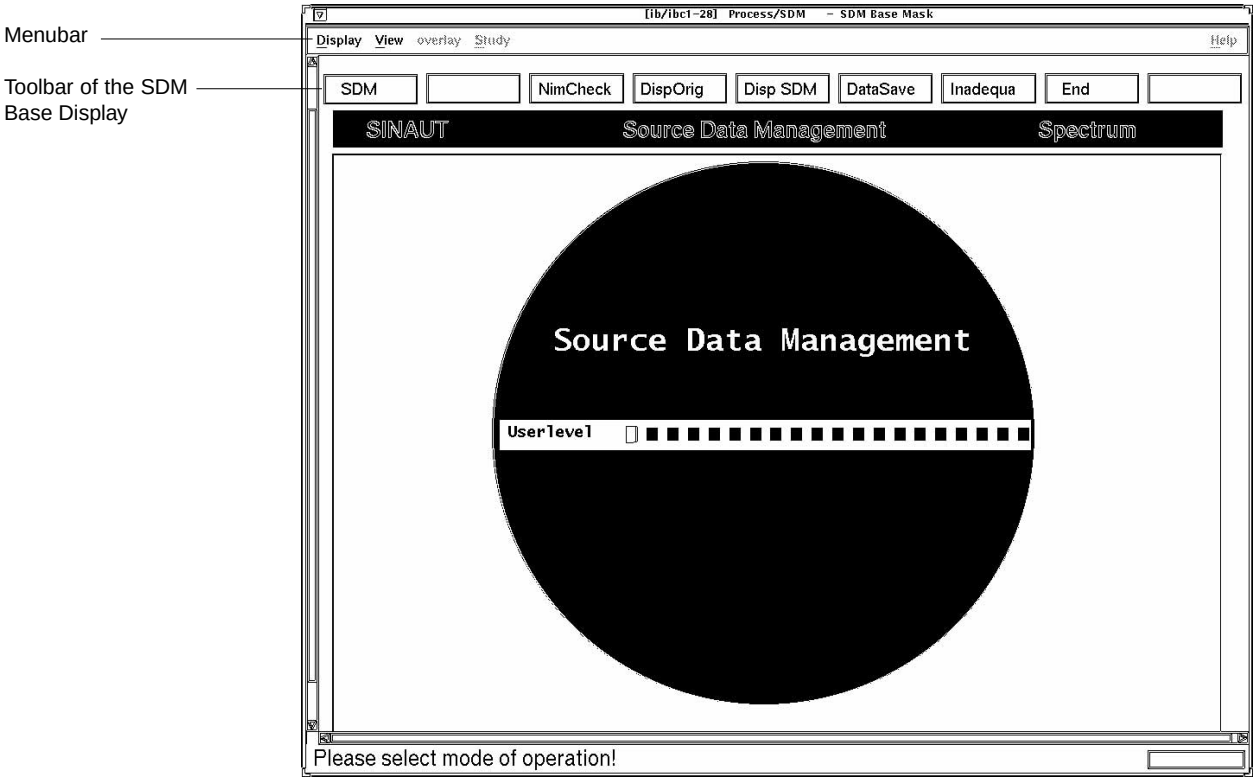
The SDM Base Display is the first display that appears on the screen after you have selected SDM from the Basic Signaling Display (BaSiDi).

It can used to call the SDM Job Management Form, to access to the SDM ODB Database Administration (DBA) in two viewing modes (Disp Orig and Disp SDM) and to invoke several applications related with the SDM ODB Database Administration (DBA), such as, the Network Image Check or the Data Inadequacy summary.

For further details on DBA, its operation modes and its related applications, refer to the user guide *U-SD10*, "*SDM ODB Reference*".

The following figure 15 shows an example of the SDM Base Display:

FIGURE 15 SDM Base Display



Toolbar of the SDM Base Display

The SDM Base Display contains a toolbar located beneath the menubar of the SDM Base Display. For details, refer to the description of the buttons below on this page. It contains buttons that allow you to access the previously mentioned SDM and DBA functions. The following buttons are provided in the Toolbar of the SDM Base Display:

- **SDM**

  Calls up the SDM Job Management Form that allows you to create and manage SDM jobs, to perform job-based data modifications via SDM forms, to automatically transfer data modifications to the Operational Database (ODB) and to access DBA in job mode. For more details on the functionality of SDM and the Job Management Form, refer to the subsequent chapters.

- **NIMCheck**

  Invokes the ODB-based Network Image Check.

- **Disp Orig**

Pressing this button allows you to acces DBA in the viewing mode “Disp Orig”. For more details on this DBA-mode, refer to the appropriate description in the user guide *U-SD10*, *“SDM ODB Reference”*.

- **Disp SDM**

  Pressing this button allows you to access DBA in the viewing mode “Disp SDM”. For more details on this DBA-mode, refer to the appropriate description in the user guide *U-SD10*, *“SDM ODB Reference”*.

- **DataSave**

  Invokes the DBA-related application “Data Save” to backup data.

- **Inadequa**

  Calls up the Data Inadequacy Summary.

  For more details on the Data Inadequay Summary, refer to the appropriate description in the user guide *U-SD10*, *“SDM ODB Reference”*.

- **End**

  Closes the SDM Base Display and quits SDM.

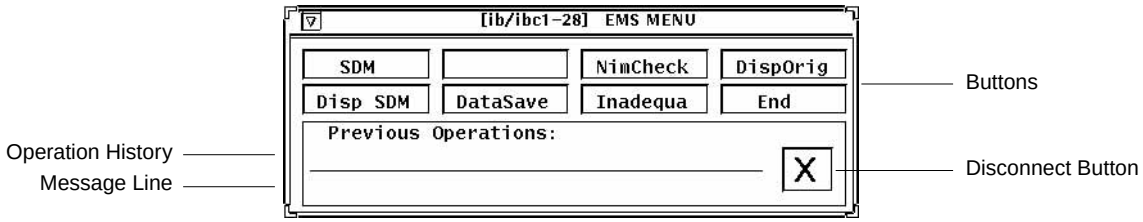
EMS-Menu of the SDM Base Display

If you like to have the buttons provided by the Toolbar of the SDM Base Display in a separate window rather than in the SDM Base Display, move the mouse cursor into the SDM Base Display and click the right mouse button. An EMS-menu will appear that contains the same buttons shown in the Toolbar of the SDM Base Display. In addition to the buttons shown in the Toolbar of the SDM Base Display, the EMS-Menu of the SDM Base Display contains a Disconnect button that allows you to lock, unlock or disconnect your current SINAUT **Spectrum** session (see figure 16 below). The EMS-Menu of the SDM Base Display also contains a line showing the operation history (i.e., the history of buttons pressed in the EMS-menu) and a message line for system messages.

☞ *Note:*

The Toolbar of the SDM Base Display remains in the SDM Base Display.

FIGURE 16 EMS-Menu of the SDM Base Display

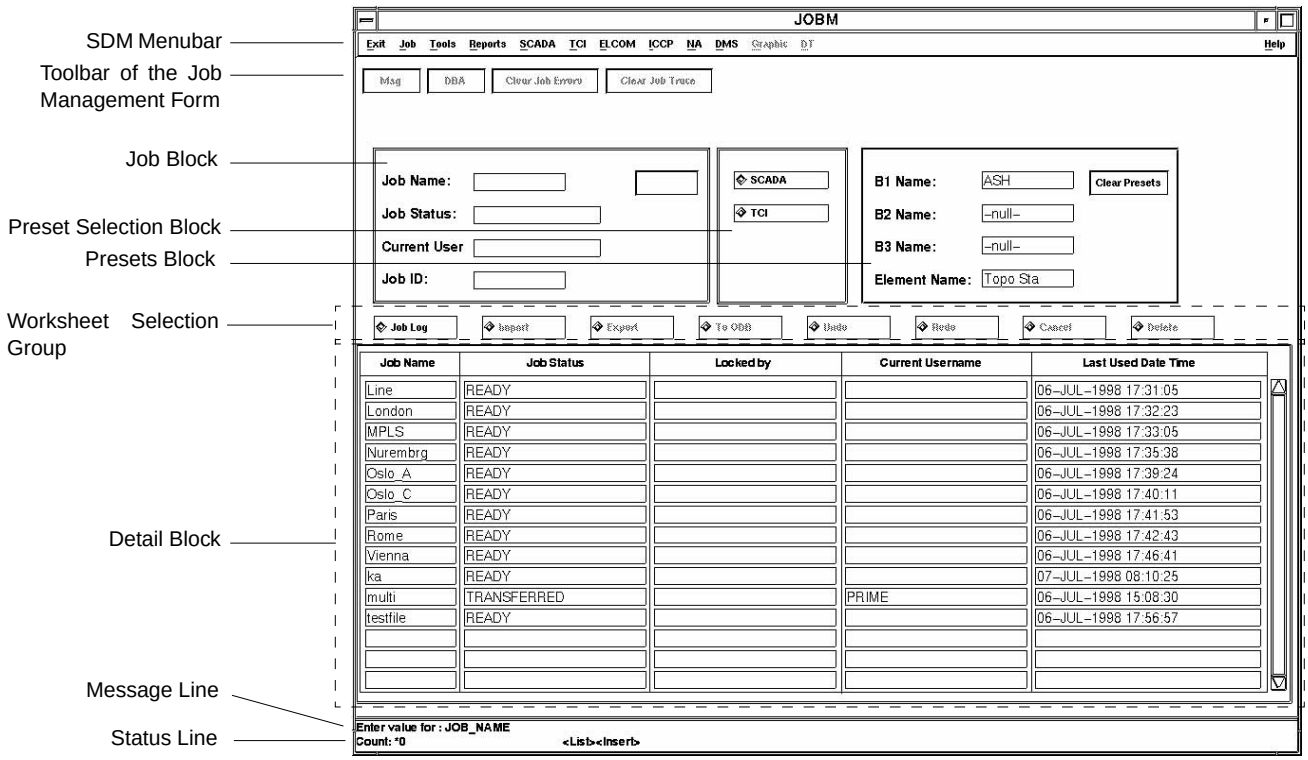


Job Management Form

You can access the main form for job management by pressing the button **SDM** in the SDM Base Display (see chapter 'SDM Base Display' on page 31).

Figure 17 shows you the basic structure of the Job Management Form:

FIGURE 17 Basic structure of the Job Management Form



The Job Management Form is composed of the following components:

- SDM Menubar
- Message Line
- Status Line

  These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section 'SDM Basics' on page 3 in this document.

- Toolbar of the Job Management Form

- Job Block
- Preset Selection Block
- Presets Block
- Worksheet Selection Group
- Detail Block

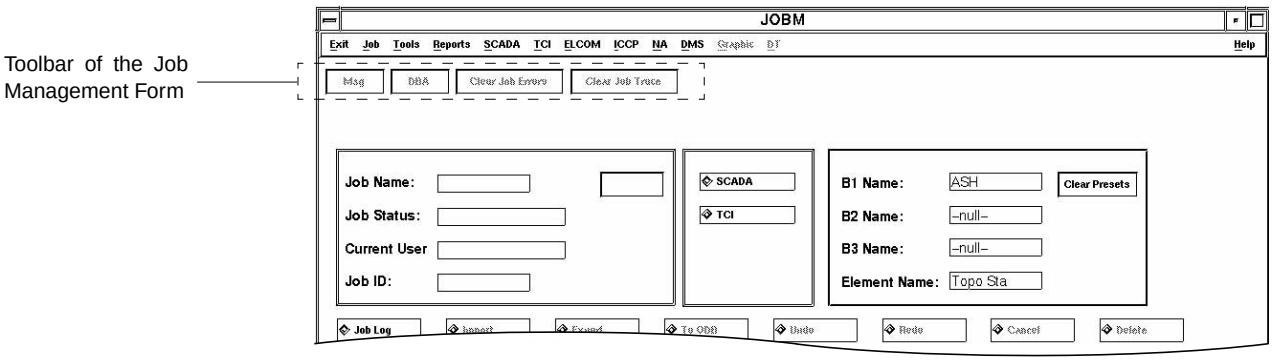
  These form components are described in detail in the following sections.

Toolbar of the Job Management Form

The Job Management Form contains a toolbar that differs from the standard SDM Toolbar (see section ’SDM Toolbar’ on page 21 for details). The Toolbar of the Job Management Form is located beneath the SDM Menubar of the Job Management Form. For details, refer to the description of the buttons below on this page.

These buttons provide easy access to frequently used functions within the SDM forms. They will be enabled if their functionality is applicable, however, the programmed logic behind the Job Management Form will temporarily disable a button if its function is not applicable in the current situation.

FIGURE 18 Toolbar of the Job Management Form (example)



- **Msg**

  Open the Error Message Form.

- **DBA**

  Invokes of the SINAUT **Spectrum** Database Administration System (DBA).

- **Clear Job Errors**

  Clears all error messages of the currently connected job.

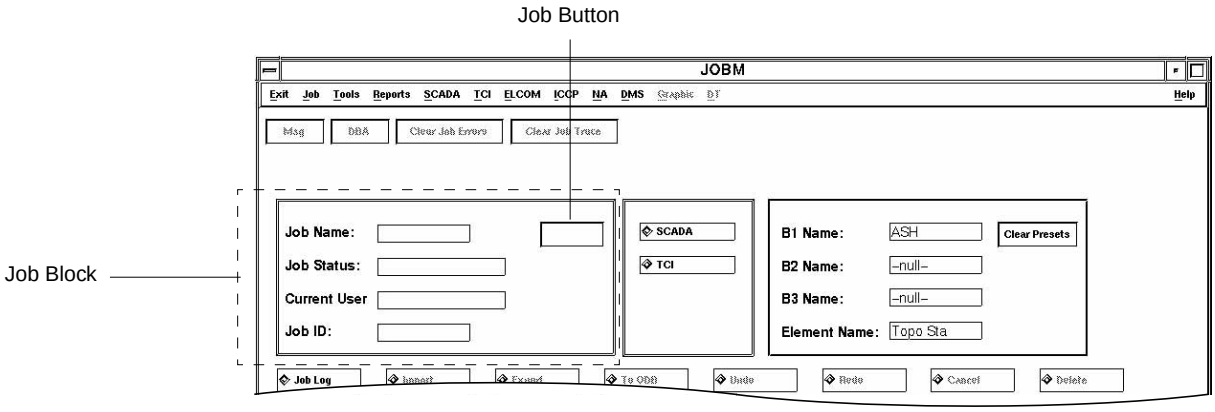
- **Clear Job Trace**

  Clears trace messages of the currently connected job.

Job Block

As extension to the list of jobs in the detail block there is a separate block available in the upper-left corner of the main Job Management form. This block contains the job name, the job status, the current user name, the job ID number, and a function button. Using this block, you can create a new job or resume an existing job.

FIGURE 19 Job Block



- **Job Name**

  When you create a job, the input in this field is taken as name of the new job. The length of the name can be from one to eight characters. Letters and numbers are allowed in the name, but no blanks.

  When you resume a job, you can enter the job name either directly by typing the job name in this field or simply by selecting a job name in the ‘Job List’ through a mouse-click.

- **Job Status**

  This field displays the status of the job.

- **Current User**

  This field displays the name of the current user for the specified job.

- **Job ID**

  This field displays a number used for identifying the specified job.

- **Job Button**

  Depending on certain circumstances, the Job Button may activate one of the following functions:

  – **Connect**

    Create a new job or resume an existing job: after the input of the job name in the field **Job Name**, a mouse-click on this button causes the job to be linked to the source data management system.

- **Disconnect**

  Break the link of the connected job to the system.

- **Reset**

  Allows you to return a job to a “normal” status:. This button is only available if a job is left in a transient state, e.g., EDITING, TRANSFERRING, ODB_ACTIVATING, ODB_DELETING, etc.

The three functions are mutually exclusive, only one of them is available at a given time.

☞ *Note:*

For the a certain user a new job may be created and connected only if there is no existing job connected, i.e., a currently connected job must be disconnected first in this case. An existing job can be directly connected while the currently connected job will be disconnected automatically.

Preset Selection Block

The Preset Selection Block contains a group of radio buttons to select different types of data presets for use in different SDM forms:

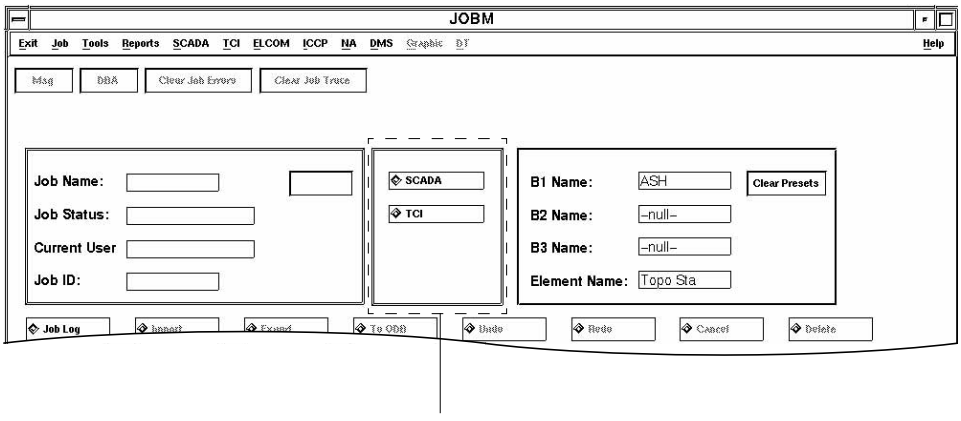
- **SCADA**

  Clicking on the radio button **SCADA** switches to SCADA presets. The content of the Presets Block is changed accordingly.

- **TCI**

  Clicking on the radio button **TCI** switches to TCI presets. The content of the Presets Block is changed accordingly.

FIGURE 20 Preset Selection Block



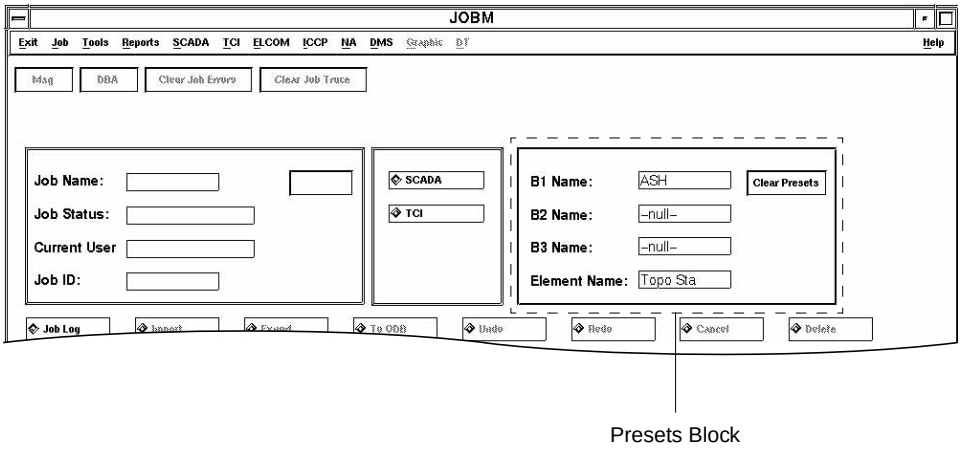
Presets Block

The Presets Block appears in the upper right corner of the Job Management Form and contains the button **Clear Presets** and a series of text fields for entering presets that will be used later as defaults for the attributes in the Master Block of an SDM form, if applicable.

☞ *Note:*

The actual content of the Presets Block depends on the current selection in the Preset Selection Block (for more details see section 'Preset Selection Block' above).

FIGURE 21 Presets Block



Using Presets

The preset values in the fields allow you to choose, ahead of time, the information you'll be seeing on the lower level, application-specific forms. No default values are set.

For example, if you have entered "`Vienna`" into the text field of the preset attribute **B1** and you call the B2 Form, "`Vienna`" will be used as a default value in the Master Block of the B2 Form and the B2 data associated with this B1-name will automatically be displayed in the B2 Form. In other words, the preset values serve as filters during data retrieval.

The passing of preset values is bi-directional. This means, in the same way the B1-name was passed "down" to the B2 Form, another B1-name entered into the appropriate text field in the Master Block of the B2 Form will be passed "up" to the preset fields in the Job Management Form. This is particularly helpful when you're moving from one form to another. Carrying the same preset information up and down the forms ensures that you will look at related pieces of data.

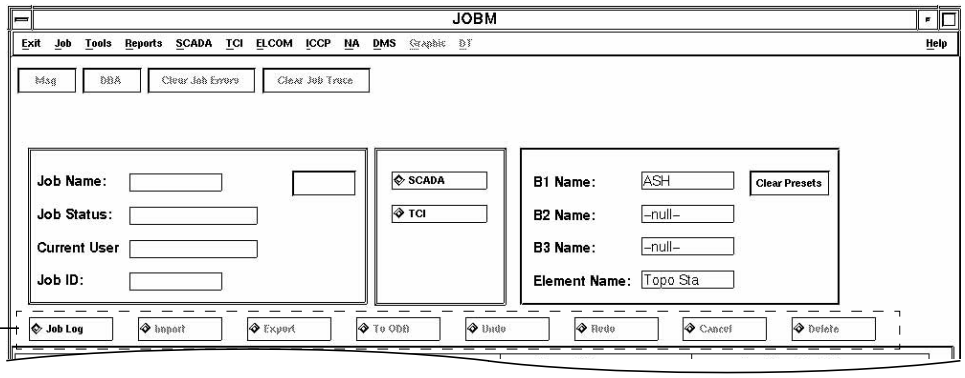
Assume, that you are in the B3 Form and you have selected the information of the B3-block "`Vienna/220/Paris`". Now you want to have look at the elements associated with this

B3-block. Since the current preset values will be passed on forward, all you have to do is to select the Element Form.

If you want to clear all preset values and start again, just open the Job Management Form and press the button **Clear Presets** in the Presets Block.

Worksheet Selection Group

FIGURE 22 Worksheet Selection Group



The Worksheet Selection Group serves for selection of the required worksheet to be displayed in the Detail Block of the Job Management Form. The following radiobuttons are provided (only those radiobuttons are enabled, whose function is applicable in the current situation):

- **Import**

  Selects the Import Worksheet in the Detail Block of the Job Management Form (see section ’Import Worksheet’ on page 43 for details) and activates the import of data from IDD (ASCII) files into the source database (SDB). For more information about IDD files refer to chapter 12 ’Base Applications Import Data Definitions’ on page 295 in this document and the appropriate chapters in other SDM Reference user guides.

- **Export**

  Selects the Export Worksheet in the Detail Block of the Job Management Form (see section ’Export Worksheet’ on page 44 for details). Pressing this button activates the extraction of data from the source database and creates IDD files which may subsequently be re-imported.

- **To ODB**

  Selects the Validation, Transfer and Activation Worksheet in the Detail Block of the Job Management Form (see section ’Validation, Transfer and Activation Worksheet’ on page 46 for details).

The validation section verifies the contents of the entire source database. Both entry-level and database-level validation are performed by global validation. Error messages will occur if data values violate the validation rules.

The transfer section activates the transfer of data modifications associated with a job from the source database to the database copy 1 of the Operational Database (ODB). The transfer is enabled only if a preceding global validation was completed successfully.

The activation section activates the loading of data for a job from the copy 1 of the Operational Database (ODB) into the database realtime copy (copy 0) of the Operational Database.

- **Undo**

  Selects the Undo Worksheet in the Detail Block of the Job Management Form (see section 'Undo Worksheet' on page 47 for details). The Undo Worksheet can be used to undo data modifications of a job.

  This button is enabled in the following two cases:

  – If a job has been activated and transferred to the copy 0 of the ODB (the job's status is `ODB_ACTIVATED`) the Undo feature removes the data modifications from the copy 0 of the ODB. However, the data modifications will remain in the copy 1 of the ODB.

  – If a job has never been transferred to the ODB, i.e., if it is in status `READY`, the Undo feature removes the data modifications made by this job from the source database.

- **Redo**

  Selects the Redo Worksheet in the Detail Block of the Job Management Form (see section 'Redo Worksheet' on page 48 for details). The Redo Worksheet can be used to re-apply the data modifications made by a job to the source database after an undo.

  This feature will be enabled only for a job with the status `UNDONE`, i.e., after an Undo from the ODB (see description of the button **Undo** above).

- **Cancel**

  Selects the Cancel Worksheet in the Detail Block of the Job Management Form (see section 'Cancel Worksheet' on page 48 for details). The Cancel Worksheet can be used to cancel data modifications of a job and remove job from the Job List.

  This button is enabled in the following two cases:

  – If a job has been transferred from the source database to the copy 1 of the ODB but has not been activated in the copy 0 of the ODB (the job's status is `ODB_TRANSFERRED`, the Cancel feature will remove the data modifications from the copy 1 of the ODB. However, data modifications will remain in the source database.

  – In case a job has never been transferred to the ODB, i.e., if it is in status `READY`, he Cancel feature will remove the data modifications made by the respective job

from the source database and will remove the job itself from the Job List in the Job Management Form.

- **Delete**

  Selects the Delete Worksheet in the Detail Block of the Job Management Form (see section 'Delete Worksheet' on page 49 for details). The Delete Worksheet can be used to remove a job from the Job List without removing data modifications made by the concerned job.

  This button will be enabled if a job has been activated in the copy 0 of the ODB, i.e., if the job is in status `ODB_ACTIVATED`. After the button **Delete** has been pressed, the job itself will be removed from the Job List and the data modifications made by the removed job exist permanently both in the source database and in the ODB. The job is fulfilled.

Detail Block

The Detail Block is located in the lower part of the Job Management Form and may contain one of the following worksheets:

- Job List
- Import Worksheet
- Export Worksheet
- Validation, Transfer and Activation Worksheet
- Undo Worksheet
- Redo Worksheet
- Cancel Worksheet
- Delete Worksheet

The Job List is automatically selected in the Detail Block of the Job Management Form if it is opened. The other worksheets are selected by selecting the appropriate radiobutton in the Worksheet Selection Group (see section 'Worksheet Selection Group' on page 39 for further details on these radiobuttons).

When you select a particular worksheet by selecting a radiobutton in the Worksheet Selection Group, the content of the Detail Block changes and the selected worksheet will appear in the Detail Block of the Job Management Form.

The worksheets provide an **OK** button to run the task covered by the respective worksheet. Once a task has been completed, an alert window appears that indicates the completion of the respective task. Press the button **OK** in this alert window to quit it.

Communication Between a Task and the Job Management Form

When you run a particular task a UNIX script will be executed. The messages of this Unix script will appear in the Message Line of the Job Management Form. Keep this portion of the Job Management Form visible during the execution of the concerned task to be able to view these messages as they appear.

Job List

The Job List is a tabular list that shows the pending jobs and their particular features. Each line of the tabular list represents a single job. A scrollbar is attached to the tabular list which can be used to quickly navigate through the list. Changes in the list are updated automatically.

FIGURE 23 Job List in Detail Block

Job Name	Job Status	Locked by	Current Username	Last Used Date Time
Line	READY			06–JUL–1998 17:31:05
London	READY			06–JUL–1998 17:32:23
MPLS	READY			06–JUL–1998 17:33:05
Nurembrg	READY			06–JUL–1998 17:35:38
Oslo_A	READY			06–JUL–1998 17:39:24
Oslo_C	READY			06–JUL–1998 17:40:11
Paris	READY			06–JUL–1998 17:41:53
Rome	READY			06–JUL–1998 17:42:43
Vienna	READY			06–JUL–1998 17:46:41
ka	READY			07–JUL–1998 08:10:25
multi	TRANSFERRED		PRIME	06–JUL–1998 15:08:30
testfile	READY			06–JUL–1998 17:56:57

The following attributes are displayed in the Job List:

- **Job Name**

  The name that identifies a job in the system (up to eight characters). It is defined by the user when the job is created and must be unique among all SDM job names in the system. Read-only display field.

- **Job Status**

  Contains the current job status. Read-only display field.

- **Locked by**

  Identifies the operator who locks the respective job. Read-only display field.

- **Current Username**

  Identifies the operator who is currently working on the respective job. Read-only display field.

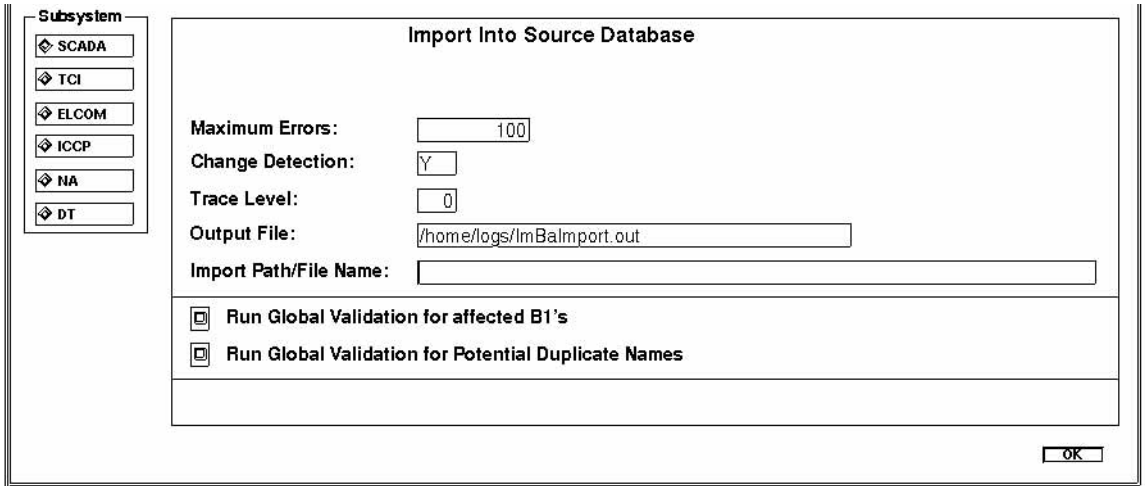
- **Last Used Date Time**

Show the date and the time of last processing (creation or modification) performed by the respective job. This attribute is automatically updated by the system whenever a processing is performed by the respective job. Read-only display field.

Import Worksheet

The Import Worksheet may be selected in the Detail Block of the Job Management Form by selecting the radiobutton **Import** in the Worksheet Selection Group. It provides facilities for the import of IDD files into the source database.

FIGURE 24 Import Worksheet



The Import Worksheet consists of the following main components:

- Subsystems Block

  A group of radio buttons to select the subsystem the imported data belong to:
  - **SCADA**
  - **TCI**
  - **ELCOM**
  - **ICCP**
  - **NA**
  - **DT**

- Import Block
  - **Maximum Errors**

    Shows the maximum number of errors allowed during an import (preset).
  - **Change Detection**

    Shows the current change detection mode (yes/no) (preset).
  - **Trace Level**

    Shows the currently selected trace level (preset).
  - **Output File**

    Shows the name of the output file that contains messages that have occurred during an import (preset).
  - **Import Path/File Name**

    Contains the full pathname of the IDD file that must be imported.
  - **Run Global Validation for Affected B1's**
  - **Run Global Validation for Potential Duplicated Names**

    Checkboxes to select the named global validation during import.

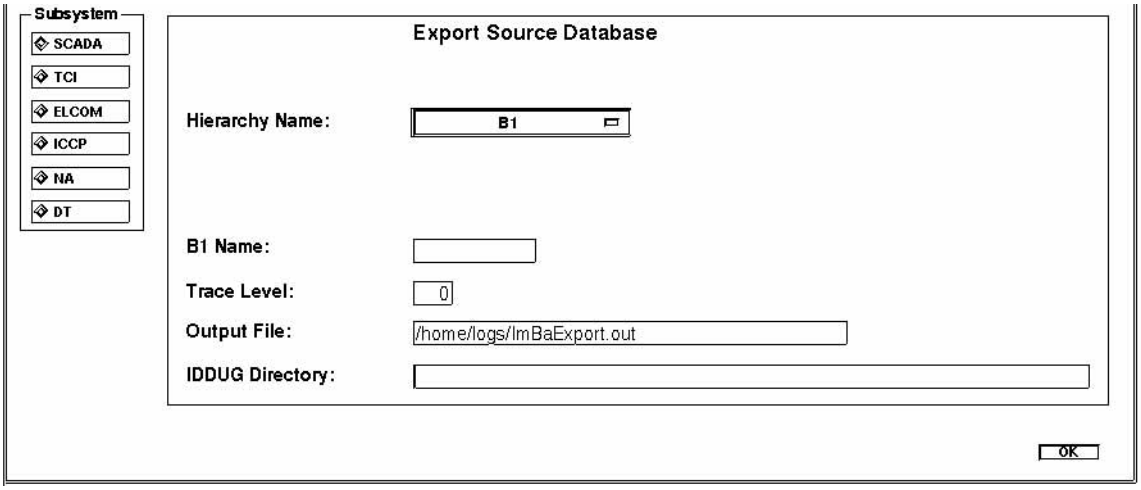
- **OK**

  Press the button **OK** to activate the import task.

Export Worksheet

The Export Worksheet may be selected in the Detail Block of the Job Management Form by selecting the radiobutton **Export** in the Worksheet Selection Group. It provides facilities for the export of data from the source database to IDD files.

FIGURE 25 Export Worksheet



The Export Worksheet consists of the following main components:

- Subsystems Block

  A group of radio buttons to select the subsystem the exported data belong to:
  - **SCADA**
  - **TCI**
  - **ELCOM**
  - **ICCP**
  - **NA**
  - **DT**

- Export Block
  - **Hierarchy Name**

    B1 or Reference -- if B1 is selected, a field for input of the B1 name is provided.
  - **B1 Name**

    Field for input of the B1 block to be exported.
  - **Trace Level**

    Shows the currently selected trace level (preset).
  - **Output File**

    Shows the name of the output file that contains messages that have occurred during an export (preset).
  - **IDD Directory**

    Contains the directory path of the IDD file that will be created.

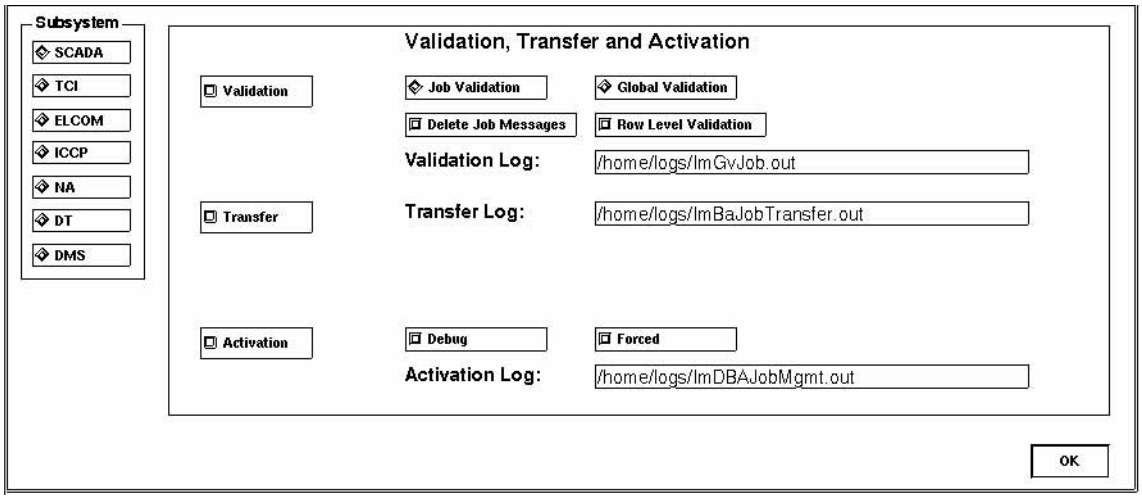
- **OK**

  Press the button **OK** to activate the data export.

Validation, Transfer and Activation Worksheet

The Validation, Transfer and Activation Worksheet may be selected in the Detail Block of the Job Management Form by selecting the radiobutton **To ODB** in the Worksheet Selection Group. It provides facilities for validation of the source database, transfer of data modifications to the copy 1 of the operational database and activation of the changes into ODB copy 0. The input fields of the tasks are displayed after the respective checkbox has been selected.

FIGURE 26 Validation, Transfer and Activation Worksheet



The Validation, Transfer and Activation Worksheet consists of the following main components:

- Validation Block
  - **Validation Log**

    Shows the name of the output file that contains messages that have occurred during a validation (preset).
  - **Job Validation**
  - **Global Validation**

    Radiobuttons to select whether validation shall be performed for the selected job only, or whether a global validation shall be performed.
  - **Delete Job Messages**

    Checkbox to select, whether the messages of the job shall be deleted before validation.

- **Row Level Validation**

  Checkbox to select row level validation mode.

- Job Transfer Block
  - **Transfer Log**

    Shows the name of the output file that contains messages that have occurred during a job transfer (preset).

After the job transfer has been finished successfully, the status of the job is set to `TRANSFERRED` in the Job List and the data modifications are placed in the copy 1 of the ODB.

- Activation Block

  After a job has been successfully transferred to the ODB copy1, the changes can be activate into the ODB copy 0.
  - **Activation Log**

    Shows the name of the output file that contains messages that have occurred during a job transfer (preset).
  - **Debug**

    Checkbox to switch on debugging.
  - **Forced**

    When this checkbox is selected, activation is performed also if e.g. locks are existing.

- **OK**

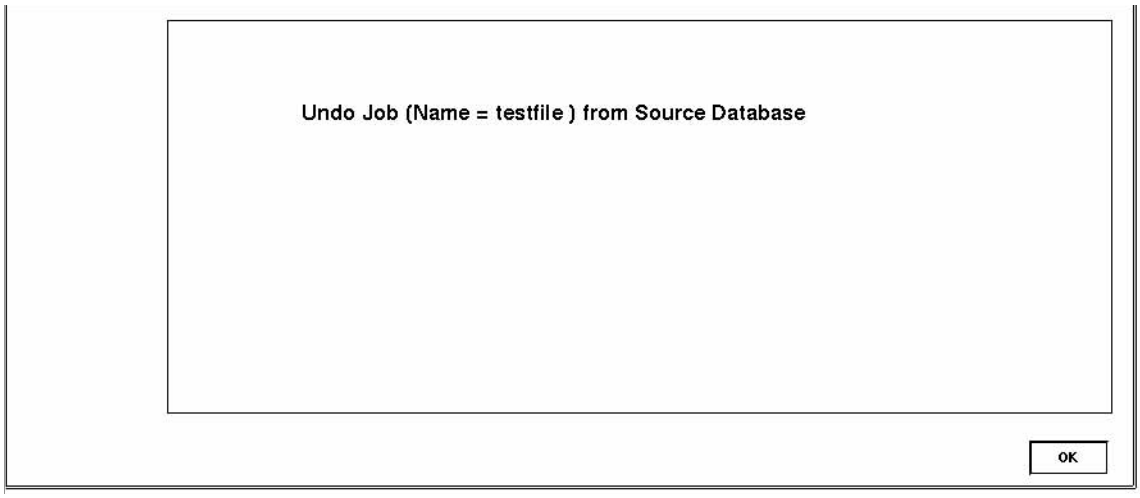
  Press the button **OK** to activate the selected tasks.

Undo Worksheet

When you are connected to a job in the status `ODB_ACTIVATED`, the activation can be undone by using the Undo feature. The Undo feature is performed via the Undo Worksheet.

The Undo Worksheet may be selected in the Detail Block of the Job Management Form by selecting the radiobutton **Undo** in the Worksheet Selection Group. It provides facilities to undo data modifications of a job.

FIGURE 27 Undo Worksheet



The Undo Worksheet consists of the following main components:

- Undo Block

  Shows the name of the respective job. Read-only display field.

- **OK**

  Press the button **OK** to undo data modifications.

  If the respective job has been activated and transferred to the copy 0 of the ODB (the job's status is ODB_ACTIVATED), pressing the button **OK** removes the data modifications from the copy 0 of the ODB. The data modifications in the copy 1 of the ODB will remain.

  If the respective job has never been transferred to the ODB, i.e., if it is in status READY, the pressing the button **OK** removes the data modifications made by this job from the source database The job will be in status UNDONE after the undo task as finished.

Redo Worksheet

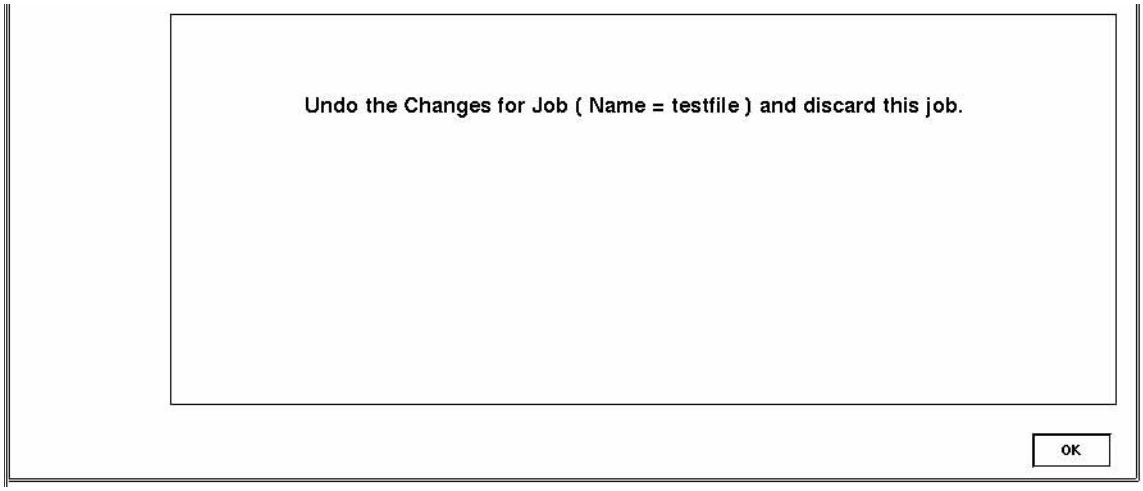
Selecting on the "**Redo**" radiobutton opens the Redo Worksheet to re-apply the changes made by a job to the SDB. The redo task is only possible for a job with status UNDONE.

Cancel Worksheet

For jobs in status TRANSFERRED, the data modifications in the copy 1 of the operational database can be removed using the Cancel task. The Cancel task is performed via the Cancel Worksheet.

The Cancel Worksheet may be selected in the Detail Block of the Job Management Form by selecting the radiobutton **Cancel** in the Worksheet Selection Group. It provides facilities to remove data modifications in the copy 1 of the operational database.

FIGURE 28 Cancel Worksheet



The Cancel Worksheet consists of the following main components:

- Cancel Block

  Shows the name of the respective job (preset). Read-only display field.

- **OK**

  Press the button **OK** to cancel data modifications.

  If the respective job has been transferred from the source database to the copy 1 of the ODB but has not been activated in the copy 0 of the ODB (the job's status is `ODB_TRANSFERRED)`, the Cancel feature will remove the data modifications from the copy 1 of the ODB. The data modifications of the respective job will remain in the source database.

  If the respective job has never been transferred to the ODB, i.e., if it is in status `READY`, the Cancel feature will remove the data modifications made by the respective job from the source database and will remove the job itself from the Job List in the Job Management Form.

  After the Cancel task has been finished, the Cancel Worksheet will automatically be closed and the Job List will appear again.

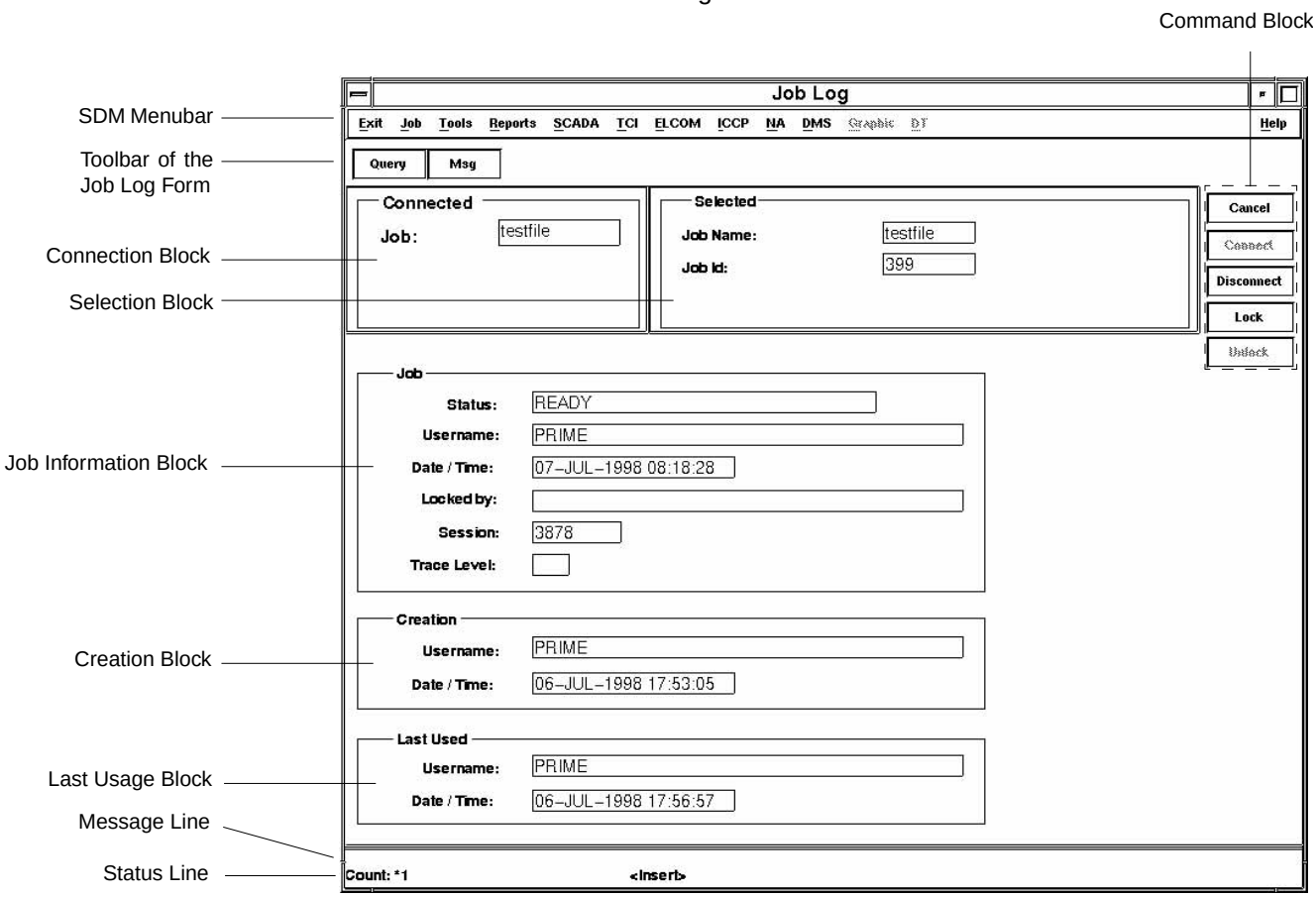
Delete Worksheet

Selecting on the **''Delete''** radiobutton opens the 'Delete Worksheet' to delete a job with status "ODB_ACTIVATED" from the Operational Database and the Source Database (with the modifications remaining)

Job Log Form

The Job Log Form can be selected from the menu **Job** in the SDM Menubar. It provides facilities that allow you to connect or disconnect and to lock or unlock a job. None of the data in this form, except the job name, can be accessed.

FIGURE 29 Basic Structure of the Job Log Form



☞ *Note:*

The entire form is read-only.

You can modify the status of a job by using the buttons in the Command Block (see section 'Command Block' on page 53).

The Job Log Form is composed of the following components:

- SDM Menubar
- Message Line
- Status Line

  These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section ’SDM Basics’ on page 3 in this document.
- Toolbar of the Job Log Form
- Connection Block
- Selection Block
- Job Information Block
- Creation Block
- Last Usage Block
- Command Block

  These form components are described in detail in the following sections.

Toolbar of the Job Log Form

The Job Log Form contains a toolbar that differs from the standard SDM Toolbar (see section ’SDM Toolbar’ on page 21 for details). The Toolbar of the Job Log Form provides the following buttons for an easy access to frequently used features related with the job log:

- **Query**

  Perform a query on the database and retrieve the job log status for the job specified in the **Job Name** field.
- **Msg**

  Opens the Error Message Form to show error messages of the concerned job. For more details on the Error Message Form, refer to the section ’Error Message Form’ on page 72.

Connection Block

- **Job**

  Shows the name of the currently connected job. Read-only display field.

Selection Block

- **Job Name**

  This name (up to eight characters) identifies a job in the system. Read-only display field.

  The input field of the attribute **Job Name** will be accessible in **Query Mode**. Enter your **Query Criteria** into this input field in **Query Mode**.

- **Job ID**

  Shows the number (job ID) used to identify the concerned job. Read-only display field.

Job Information Block

The Job Information Block shows the following status information of the concerned job:

- **Status**

  Shows the status of the specified job. Read-only display field.

- **Username**

  Shows the username of the operator who is currently working on the concerned job. Read-only display field.

- **Date / Time**

  Shows the current date and time. Read-only display field.

- **Locked by**

  If available, this display field shows the username of the operator who has locked the concerned job. Read-only display field.

- **Session**

  Shows a number used to identify the concerned session. Read-only display field.

- **Trace Level**

  Shows the current job trace level. Read-only display field.

Creation Block

- **Date / Time**

  Shows the date and time of the creation of the job. Read-only display field.

- **Username**

  Shows the username of the operator who has created the job. Read-only display field.

Last Usage Block

- **Date / Time**

  Shows the date and the time of latest processing (creation or modification) performed by the respective job. This attribute is automatically updated by the system whenever a processing is performed by the respective job. Read-only display field.

- **Username**

  Shows the username of the operator who performed the latest processing (creation or modification) on the respective job. This attribute is automatically updated by the system whenever a processing is performed. Read-only display field.

Command Block

The Command Block of the Job Log Form differs from the standard Command Block contained in a SDM form (see section 'Command Block' on page 26 for details). Since the entire Job Log Form is read-only, only the Command Block of the Job Log Form can be used to change the status of the currently displayed job. It contains the following buttons:

- **Cancel**

  Exits the Job Log Form. If you press this button, the Job Log Form will be closed and the Job Management Form will appear.

- **Connect**

  Connect the job whose name is currently displayed in the display field of the attribute **Job Name** to the system.

- **Disconnect**

  Disconnect the job whose name is currently displayed in the display field of the attribute **Job Name** from the system. If you press this button, the display field of the attribute **Job** in the Connection Block will be emptied.

- **Lock**

  Establish a job interlock on the job whose name is currently displayed in the display field of the attribute **Job Name**. After a lock has been established, the locked job can be modified only by the operator who has locked it.

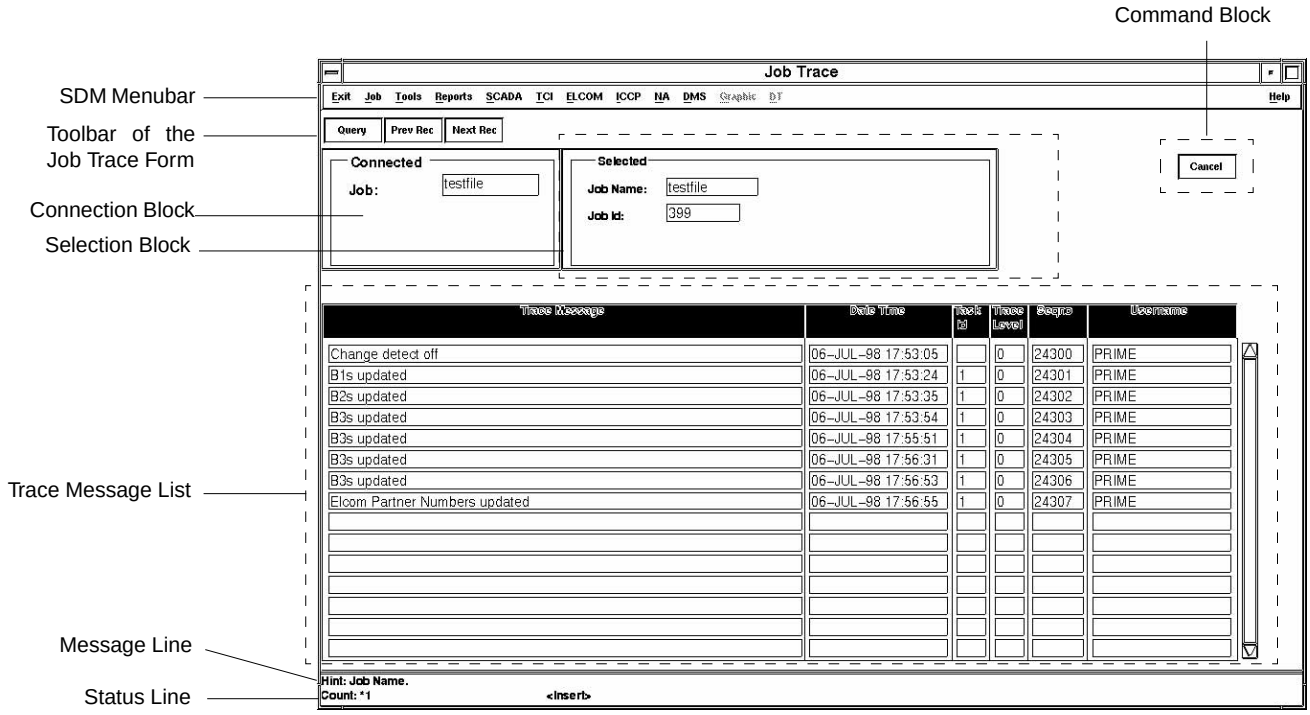
- **Unlock**

  Remove the job interlock from the job whose name is currently displayed in the display field of the attribute **Job Name**. After a lock has been removed, the respective job can be connected and modified by any operator.

Job Trace Form

The Job Trace Form can be selected from the menu **Job** in the SDM Menubar. It provides facilities that allow you to view trace information associated with a certain job. This feature can be used for debugging purposes. For example, you can debug a job with the help of the Job Trace Form to figure out whether it has been completed properly.

FIGURE 30 Basic Structure of the Job Trace Form



☞ *Note:*

The entire form is read-only. None of its input fields can be accessed.

The Job Trace Form is composed of the following components:

- SDM Menubar
- Message Line
- Status Line

  These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section 'SDM Basics' on page 3 in this document.

- Toolbar of the Job Trace Form
- Connection Block
- Selection Block
- Command Block
- Trace Message List

  These form components are described in detail in the following sections.

Toolbar of the Job Trace Form

The Job Trace Form contains a toolbar that differs from the standard SDM Toolbar (see section 'SDM Toolbar' on page 21 for details). The Toolbar of the Job Trace Form provides the following buttons for an easy access to features related with trace information of a job:

- **Query**

  Perform a query on the database and retrieve trace information for the job specified in the input field of the attribute **Job Name** in the Selection Block. The retrieved trace information will be displayed in the Trace Message List.

- **Prev Rec**

  Moves the cursor to the previous record.

- **Next Rec**

  Moves the cursor to the next record in the current block.

Connection Block

- **Job**

  Shows the name of the currently connected job. Read-only display field.

Selection Block

- **Job Name**

  This name (up to eight characters) identifies a job in the system. Read-only display field.

  The input field of the attribute **Job Name** will be accessible in **Query Mode**. Enter your **Query Criteria** into this input field in **Query Mode**.

- **Job ID**

  Shows the number (job ID) used to identify the concerned job. Read-only display field.

Command Block

The Command Block of the Job Trace Form differs from the standard Command Block contained in a SDM form (see section 'Command Block' on page 26 for details). It contains the following button:

- **Cancel**

  Exits the Job Trace Form. If you press this button, the Job Trace Form will be closed and the Job Management Form will appear.

Trace Message List

The Trace Message List is a tabular list that shows trace information of that job whose job name is currently displayed in the input field of the attribute **Job Name** in the Selection Block. Each line of the tabular list represents a single trace message, i.e., a single action performed by the respective job. The columns of the list contain the attributes of the respective trace message. A scrollbar is attached to the tabular list which can be used to quickly navigate through the list. Changes in the list are updated automatically.

- **Trace Message**

  Shows detailed information about a performed action.

- **Date Time**

  Shows the date and the time the concerned action was made.

- **Task Id**

  Shows the number of the task to which the concerned action belongs.

- **Trace Level**

  Shows the respective job trace level.

- **Seqno**

  Shows the sequence numbers for the concerned action that has been performed.

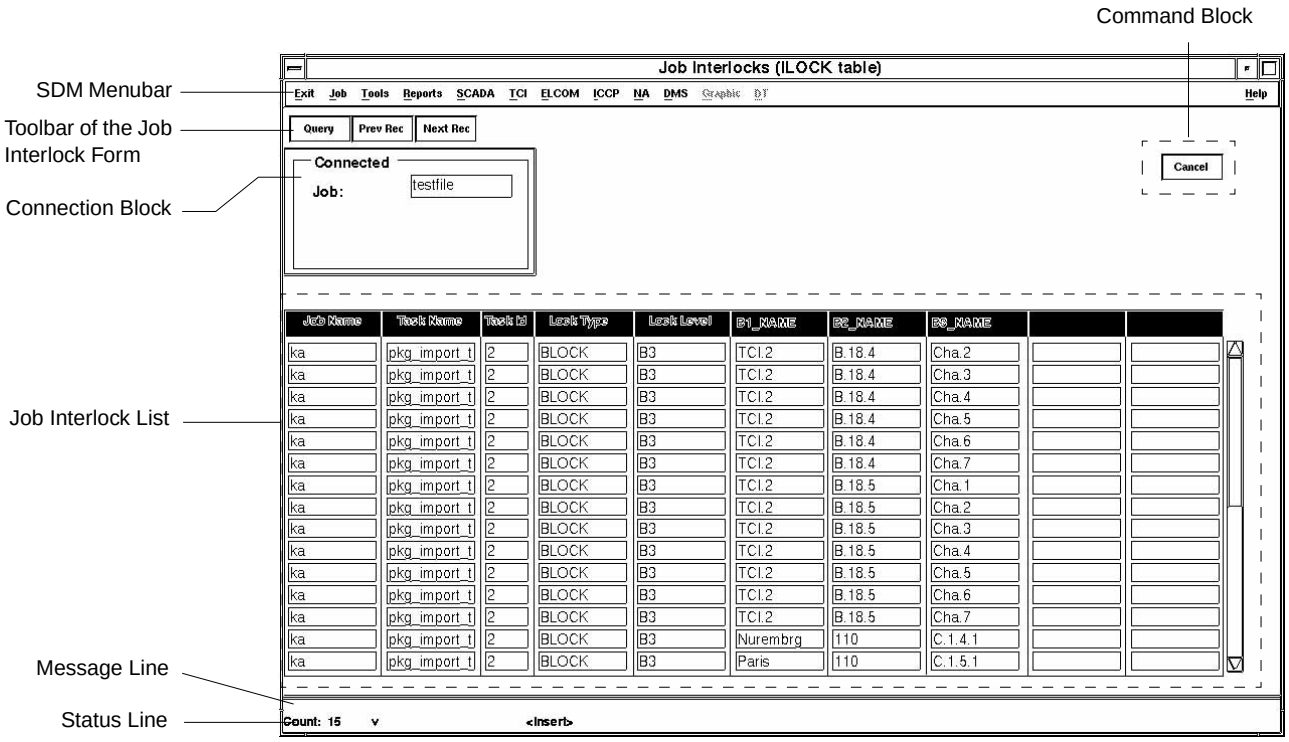
- **Username**

  Shows the username of the operator who has performed the respective action.

Job Interlock Form

The Job Interlock Form can be selected from the menu **Job** in the SDM Menubar. It provides facilities that allow you to view job interlock information. This feature can be used for debugging purposes. For example, you can debug a job with the help of the Job Interlock Form to figure out whether locks exist on certain data.

FIGURE 31 Basic Structure of the Job Interlock Form



☞ *Note:*

The entire form is read-only. None of its input fields can be accessed.

The Job Interlock Form is composed of the following components:

- SDM Menubar
- Message Line
- Status Line

These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section 'SDM Basics' on page 3 in this document.

- Toolbar of the Job Interlock Form
- Command Block
- Connection Block
- Job Interlock List

  These form components are described in detail in the following sections.

Toolbar of the Job Interlock Form

The Job Interlock Form contains a toolbar that differs from the standard SDM Toolbar (see section 'SDM Toolbar' on page 21 for details). The Toolbar of the Job Interlock Form provides the following buttons for an easy access to features related with job interlock information:

- **Query**

  Perform a query on the database and retrieve trace information for the job specified in the input field of the attribute **Job Name**. The retrieved job interlock information will be displayed in the Job Interlock List.

- **Prev Rec**

  Moves the cursor to the previous record.

- **Next Rec**

  Moves the cursor to the next record in the current block.

Connection Block

- **Job**

  Shows the job name of the currently connected job. Read-only display field.

  If no job is currently connected, the display field will be blank.

Command Block

The Command Block of the Job Interlock Form differs from the standard Command Block contained in a SDM form (see section 'Command Block' on page 26 for details). It contains the following button:

- **Cancel**

  Exits the Job Interlock Form. If you press this button, the Job Interlock Form will be closed and the Job Management Form will appear.

Job Interlock List

The Job Interlock List is a tabular list that shows job interlock information. Each line of the tabular list represents a single job interlock. The columns of the list contain the attributes of the respective job interlock. A scrollbar is attached to the tabular list which can be used to quickly navigate through the list. Changes in the list are updated automatically.

- **Job Name**

  The name (up to eight characters) identifies a job in the system.

- **Task Name**

  Shows the name of the concerned task that has been performed.

- **Task ID**

  Shows the number (task ID) of the concerned task that has been performed.

- **Lock Type**

  Shows the type of data that is locked, e.g., reference or block data, etc. .

- **Lock Level**

  Shows the hierarchical level of the locked data object, e.g., **B1**, **B2**, **B3**, **Element**, **Info**, etc. .

- **Key 1**

- **Key 2**

- **Key 3**

- **Key 4**

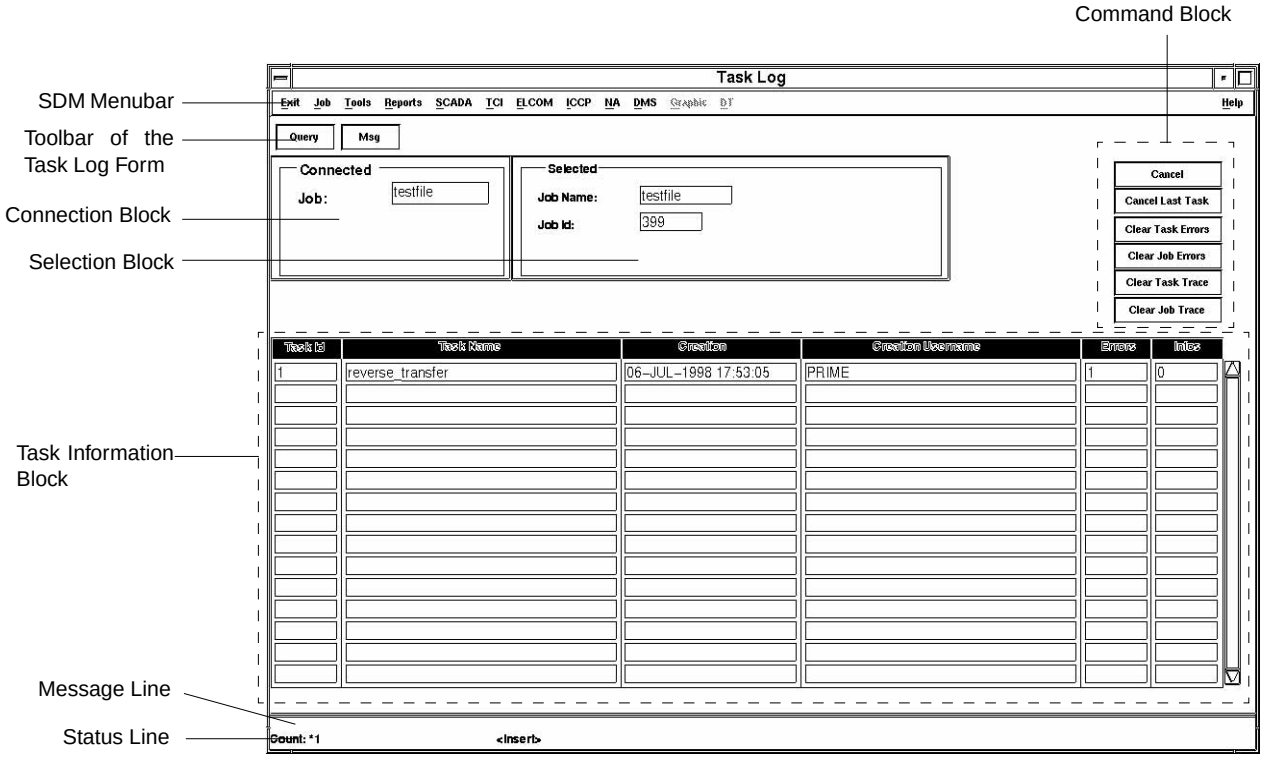
- **Key 5**

  These 5 columns show the concerned database keys of the locked data object. For example: in case of a locked info, these attributes will show the B1-name, the B2-name, the B3-name, the Element name and the Info name of the locked info. In case of a locked application data characteristic group, the attribute **Key 1** will show the name of the locked application data characteristic group, etc.

Task Log Form

The Task Log Form allows you to view the chronology of the tasks for a particular job. It also allows you to cancel the last one of these tasks. It can be selected under the menu **Job** in the SDM Menubar. Each task and its identifying parameters are shown in one line of the Task Information Block. There is a scrollbar at the right side of the list to scroll the list, as there can be more tasks defined than one page can show.

FIGURE 32 Basic Structure of the Task Log Form



☞ *Note:*
The entire form is read-only. None of its input fields can be accessed.

The Job Interlock Form is composed of the following components:

- SDM Menubar
- Message Line
- Status Line

These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section 'SDM Basics' on page 3 in this document.

- Toolbar of the Task Log Form
- Connection Block
- Selection Block
- Command Block
- Task Information Block

  These form components are described in detail in the following sections.

Toolbar of the Task Log Form

The Toolbar of the Task Log Form indicates the actions which may be made for the Task Information Block. It contains the following buttons:

- **Query**

  This button has the function to query the database and get the task list for a job specified in the **Job Name** field.

  A click on this button clears the Task Information Block and the **Job Name**, and goes into the query mode being ready for the next query. Note that in query mode the **Cancel** button is disabled.

- **Msg**

  Pressing this button opens the Error Message Form indicating error messages for the particular job. For more details on the Error Message Form, refer to the section 'Error Message Form' on page 72.

Connection Block

In the Connection Block the name of the job you are currently connected to is displayed.

Selection Block

The Selection Block contains the following fields:

- **Job Name**

  This name (up to eight characters) identifies a job in the system. Only this field can be modified in the query mode.

- **Job ID**

  This field displays the number used for identifying the specified job.

Command Block

The Command Block contains the following buttons:

- **Cancel**

  Exits the Task Log Form. If you press this button, the Task Log Form will be closed and the Job Management Form will appear.

- **Cancel Last Task**

  This button allows you to cancel the most recently completed task, thereby removing any data changes made by that task from the database. You can cancel all of the tasks associated with a job, but each task must be cancelled individually and in the reverse order of how it was performed.

- **Clear Task Errors**

  This function clears the errors for the selected task in the Task Information Block and sets the error number in the **Errors** field to zero.

- **Clear Job Errors**

  This function clears the errors for all tasks of the specified job.

- **Clear Task Trace**

  This function clears the trace messages for the selected task in the Task Information Block.

- **Clear Job Trace**

  This function clears the trace messages for all tasks of the specified job.

Task Information Block

The following parameters are shown in the Task Information Block:

- **Task ID**

  This is a chronological number to record the tasks performed.

- **Task Name**

  It is the name of a particular task. This name is generated automatically by the system according to the specified task.

- **Creation**

  This field indicates the date and time for the creation of the task.

- **Creation Username**

  Shows the username of the operator who has created the respective task.

- **Errors**

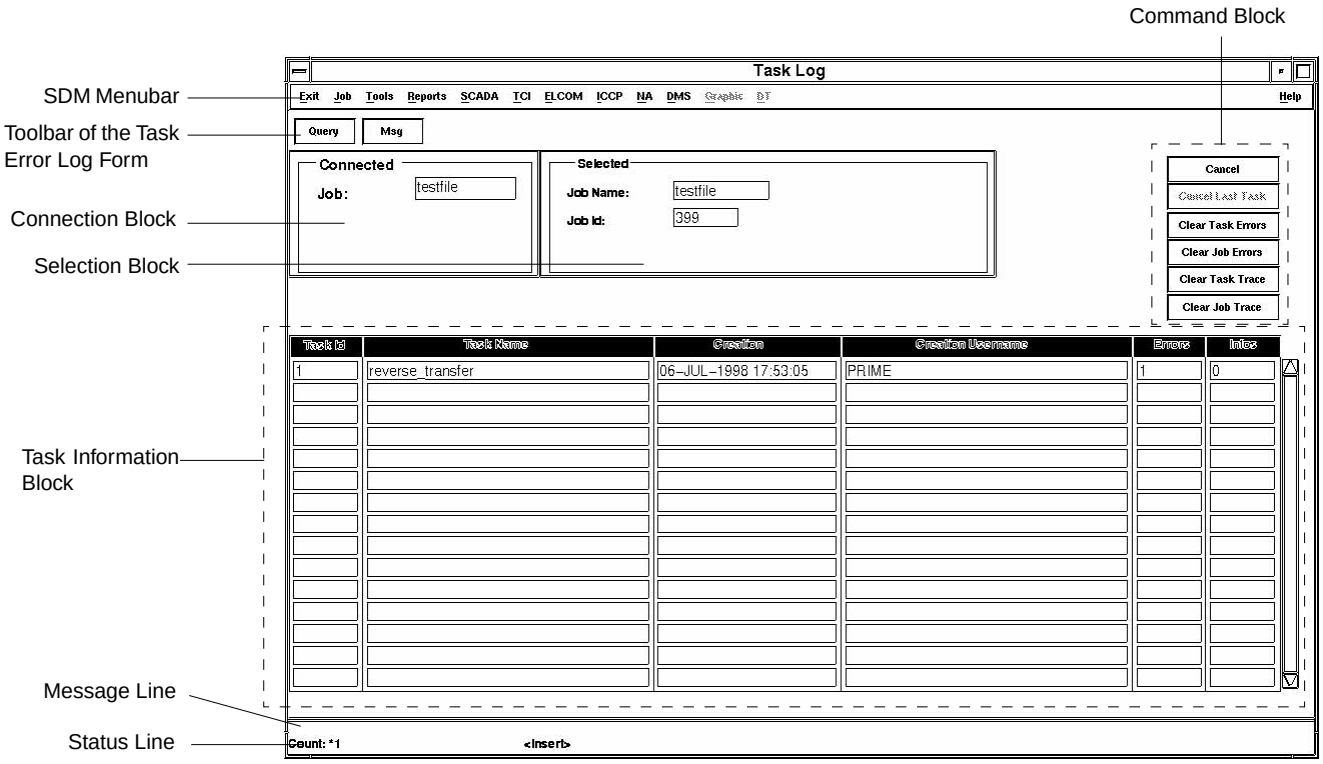
  The number of errors appeared for the specified task.

- **Infos**
  The number of informational messages appeared for the selected task.

Task Error Log Form

The Task Error Log Form allows you to view the chronology of the tasks containing errors for a particular job. The form can be selected under the menu **Job** in the SDM Menubar. Each task which contains errors and its identifying parameters are shown in one line of the Task Information Block. There is a scrollbar at the right side of the list to scroll the list, as there can be more tasks defined than one page can show.

FIGURE 33 Basic Structure of the Task Error Log Form

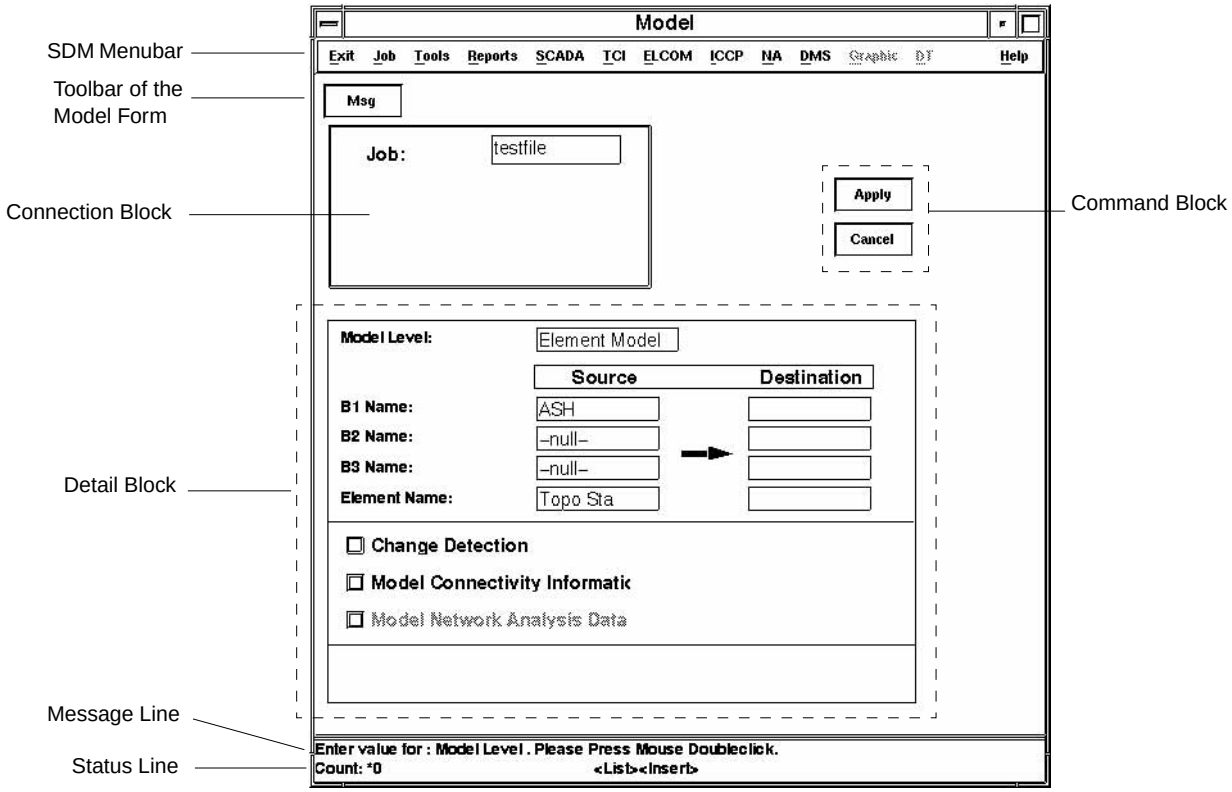


This form is identically constructed as the Task Log Form. The difference is that only the tasks which involve errors are displayed and the **Cancel Last Task** button is always disabled.

Model Form

The Model Form can be selected from the menu **Tools** in the SDM Menubar and from other SDM forms (refer to the description of the concerned SDM form for details). It provides facilities that allow you to duplicate an entire data hierarchy (for example, an entire substation, an entire switchbay, etc.) in the database.

FIGURE 34 Basic Structure of the Model Form



The Model Form is composed of the following components:

- SDM Menubar
- Message Line
- Status Line

  These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section ’SDM Basics’ on page 3 in this document.

- Toolbar of the Model Form
- Detail Block

  These form components are described in detail in the following sections.

Connection Block

In the Connection Block the name of the job you are currently connected to is displayed.

Command Block

The Command Block of the Model Form differs from the standard Command Block contained in a SDM form (see section 'Command Block' on page 26 for details). It contains the following buttons:

- **Apply**

  Creates the object according to the entered data.
- **Cancel**

  Exits the Model Form. If you press this button, the Model Form will be closed and the Job Management Form will appear.

☞ *Note:*

If you have not applied your entries by pressing the button **Apply** *in the Command Block, they will be dismissed.*

Toolbar of the Model Form

The Model Form contains a toolbar that differs from the standard SDM Toolbar (see section 'SDM Toolbar' on page 21 for details). It provides the following button:

- **Msg**

  Opens the Error Message Form to show error messages of the concerned job. For more details on the Error Message Form, refer to the section 'Error Message Form' on page 72.

Detail Block

The Detail Block provides the following attributes:

- **Model Level**

  Contains the model level, i.e., the hierarchical level of the data hierarchy to be copied.
- **Change Detection**

Checkbox to select whether changes shall be detected and recorded in the change log.

- **Model Connectivity Information**

  Checkbox to select whether the connectivity information of the model data hierarchy shall be copied.

- **Model Network Analysis Data**

  Checkbox to select whether the network analysis data of the model data hierarchy shall be copied.

The attributes **B1 Name** ... **Element Name** form a tabular list with two columns (**Source** and **Destination**). The attributes **B1 Name** ... **Element Name** in the column **Source** specify the technological address of the data to be copied. The attributes **B1 Name** ... **Element Name** in the column **Destination** specify the technological address for the new data hierarchy that shall be created from the copy.

If you specify the technological address of the source data, you may enter values for the attributes **B1 Name** ... **Element Name** in the column **Source** either directly or by selection from a list of values. If you specify the technological address of the destination data, values of the attributes **B1 Name** ... **Element Name** in the column **Destination** can only be entered directly.

☞ *Note:*

Depending on the selected Model Level (see description of the attribute **Model Level** *on page 66), some of the subsequently described attributes may be protected and not be available for data entry. This applies both to attributes of the column* **Source** *and* **Destination***.*

- **Source**
  - **B1 Name**

    Specifies the name of the source B1-block.

☞ *Note:*

The input field of this attribute will be accessible for all Model Levels.

  - **B2 Name**

    Specifies the name of the source B2-block.

☞ *Note:*

The input field of this attribute will be accessible only if the selected Model Level is B2, B3 or Element.

  - **B3 Name**

    Specifies the name of the source B3-block.

☞ *Note:*

The input field of this attribute will be accessible only if the selected Model Level is B3 or Element.

– **Element Name**

Specifies the name of the source element.

☞ *Note:*

The input field of this attribute will be accessible only if the selected Model Level is Element.

■ **Destination**

– **B1 Name**

Specifies the name of the destination B1-block.

☞ *Note:*

The input field of this attribute will be accessible for all Model Levels.

– **B2 Name**

Specifies the name of the destination B2-block.

☞ *Note:*

The input field of this attribute will be accessible only if the selected Model Level is B2, B3 or Element.

– **B3 Name**

Specifies the name of the destination B3-block.

☞ *Note:*

The input field of this attribute will be accessible only if the selected Model Level is B3 or Element.

– **Element Name**

Specifies the name of the destination element.

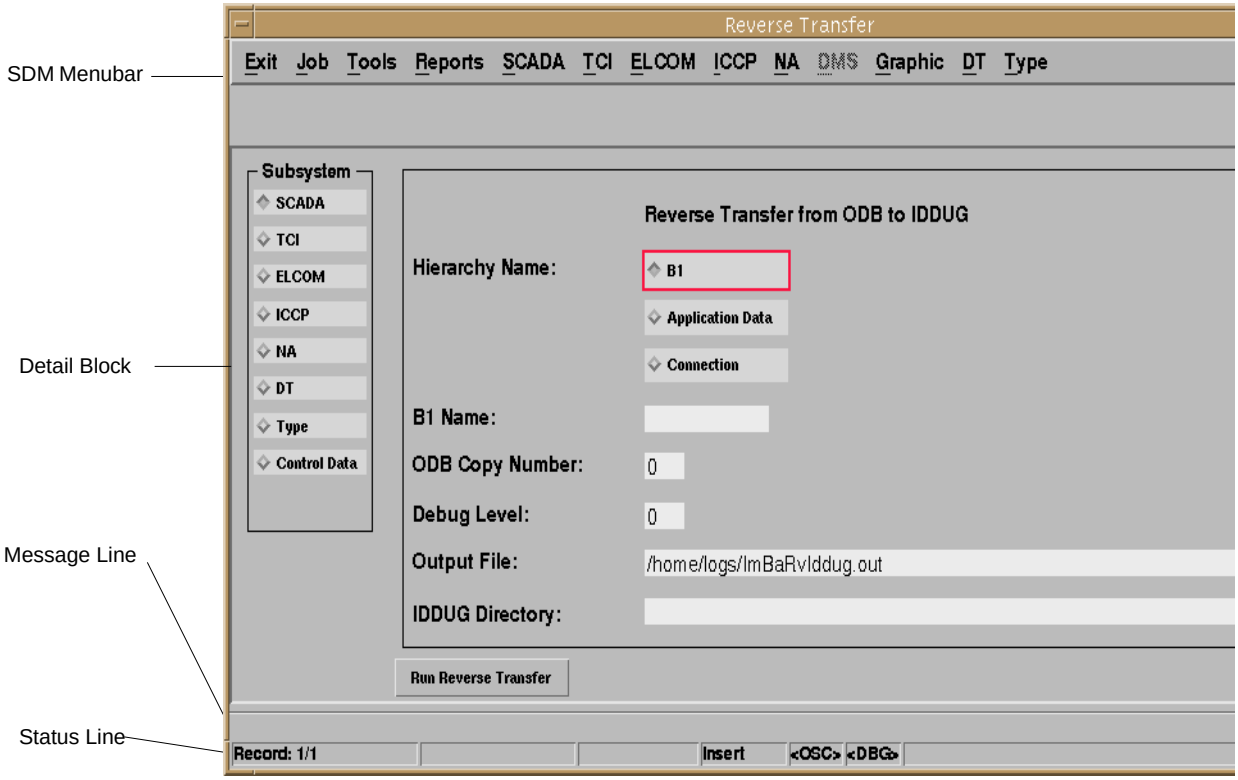
☞ *Note:*

The input field of this attribute will be accessible only if the selected Model Level is Element.

Reverse Transfer Form

The Reverse Transfer Form can be selected from the menu **Tools** in the SDM Menubar and from other SDM forms (refer to the description of the concerned SDM form for details). It provides facilities that allow you to create IDD files for ASCII data import from the data of the Operational Database (ODB).

FIGURE 35 Basic Structure of the Reverse Transfer Form



The Reverse Transfer Form is composed of the following components:

- SDM Menubar
- Message Line
- Status Line

  These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section ’SDM Basics’ on page 3 in this document.

- Detail Block

  This form component is described in detail in the following section.

Detail Block

The Detail Block of the Reverse Transfer Form provides the following attributes:

- **Subsystem**

  Radiobuttons for selection of the subsystem:
  - **SCADA**
  - **TCI**
  - **Elcom**
  - **ICCP**
  - **NA**
  - **DT**
  - **Type**
  - **Control Data**

- **Hierarchy Name**

  Radiobuttons for selection of B1 or Application Data or Connection (if B1 or Application Data is selected, then a field for input of a B1 name is provided). These radiobuttons are only provided, if subsystem SCADA has been selected.

- **B1 Name**

  Field for input of a B1 name.

- **ODB Copy Number**

  Field for input of the number of the ODB copy (preset as 1)

- **Debug Level**

  Field for setting a debug level (preset as 0).

- **Output File**

  Shows the name of the output file that contains messages that have occurred during the reverse transfer task (preset).

- **IDDUG Directory**

  Field for entering the full pathname of the IDD file that will be created.

- **Run Reverse Transfer**

  Press the button **Run Reverse Transfer** to activate the reverse transfer.

- **Cancel**

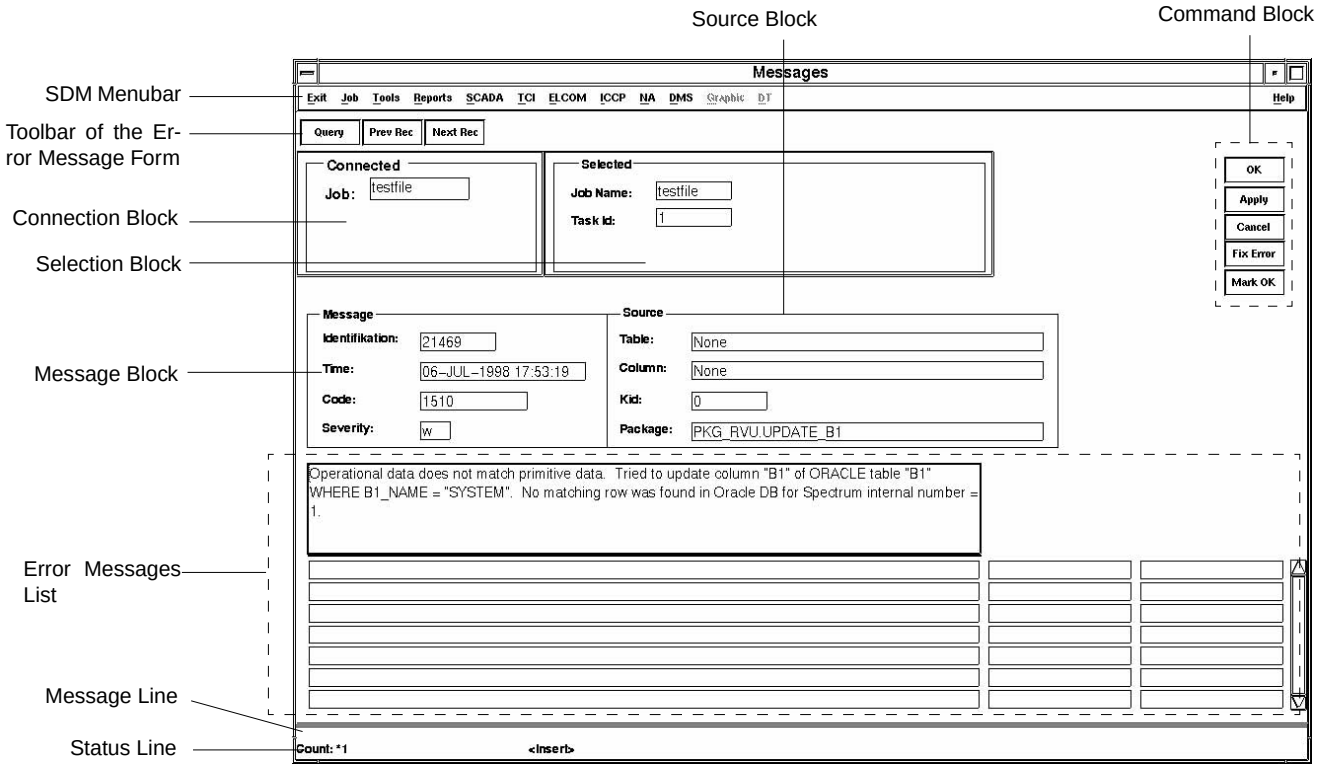
  Exits the Reverse Transfer Form. If you press this button, the Reverse Transfer Form will be closed and the Job Management Form will appear.

Additionally, if the subsystem **TCI** is selected, radio buttons for **create RTU data** and **create TCI data** are displayed for selection. Further, if **Control Data** is selected, 3 radio buttons for **Create Control Data Files** (for reverse-trasferring control data from ODB to IDD), **Load Control Data into SDB** (from IDD), and **with AD** (AD data also processed) can be selected.

Error Message Form

The Error Message Form allows you to view an error message and, depending on your needs, allows you to correct the error or to mark the error as okay. This form can be selected from the menu **Tools** in the SDM Menubar of the Job Management Form and from each of the individual application data forms (via the **Msg** button) described in detail in chapter 6.

FIGURE 36 Basic Structure of the Error Message Form



The Job Interlock Form is composed of the following components:

- SDM Menubar
- Message Line
- Status Line

  These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section ’SDM Basics’ on page 3 in this document.

- Toolbar of the Error Message Form
- Connection Block
- Selection Block
- Command Block
- Message Block
- Source Block
- Error Messages List

  These form components are described in detail in the following sections.

Connection Block

In the Connection Block the name of the job you are currently connected to is displayed.

Selection Block

The Selection Block contains the following fields:

- **Job Name**

  This name (up to eight characters) identifies a job in the system.
- **Task Id**

  This field displays a number used for identifying a specified task.

Command Block

The Command Block contains the following buttons:

- **OK**

  Enters into the database all changes made since the last ‘Apply’, exits the current form and returns to the place from which it was called. It is practically the combination of the buttons ‘**Apply**’ and ‘**Cancel**’.
- **Apply**

  Enters into the database all changes made since the last ‘**Apply**’.
- **Cancel**

  The Cancel function behaves differently, depending on what mode the form is in.

  If the form is in Normal mode, pressing ‘**Cancel**’ exits the current form and returns to the place from which it was called.
- **Fix Error**

As the name implies, the **Fix Error** button provides a handy way of navigating to the erroneous data so that you can correct the problem.

If you choose to fix the data, be sure to delete the error message too.

- **Mark OK**

  One of the features of the SDM database is the ability, in most cases, to override data constraints. And for those situations, when data deviates from the norm, the **Mark OK** button has to be used.

  Marking a message okay not only moves the message out of the error message table, it also turns off that error for that record for all times. Once an error is marked okay, it will never again be issued for that data record.

Toolbar of the Error Message Form

- **Query**

  This button has the function to query the database and get the error messages for a job specified in the **Job Name** field.

- **Prev Rec**

  Moves the cursor to the previous record.

- **Next Rec**

  Moves the cursor to the next record in the current block. If no more records are found, this function creates a new blank record.

Message Block

- **Identification**

  This field displays a number used for identifying a specified message.

- **Time**

  This field indicates the date and time the messages were issued.

- **Code**

  The Code is a number assigned for the template used to produce this diagnostic message.

- **Severity**

  It is the severity of this diagnostic:

  w = warning;

  f = fatal and

  i = informational.

Source Block

- **Table**
  It is the Oracle table to which this message is referring.
- **Column**
  It is the Oracle column to which this message is referring.
- **Kid**
  It is the Oracle kid to which this message is referring.
- **Package**
  It is the name of the routine issuing this message

Error Messages List

This list contains the diagnostic message texts.

CHAPTER 5

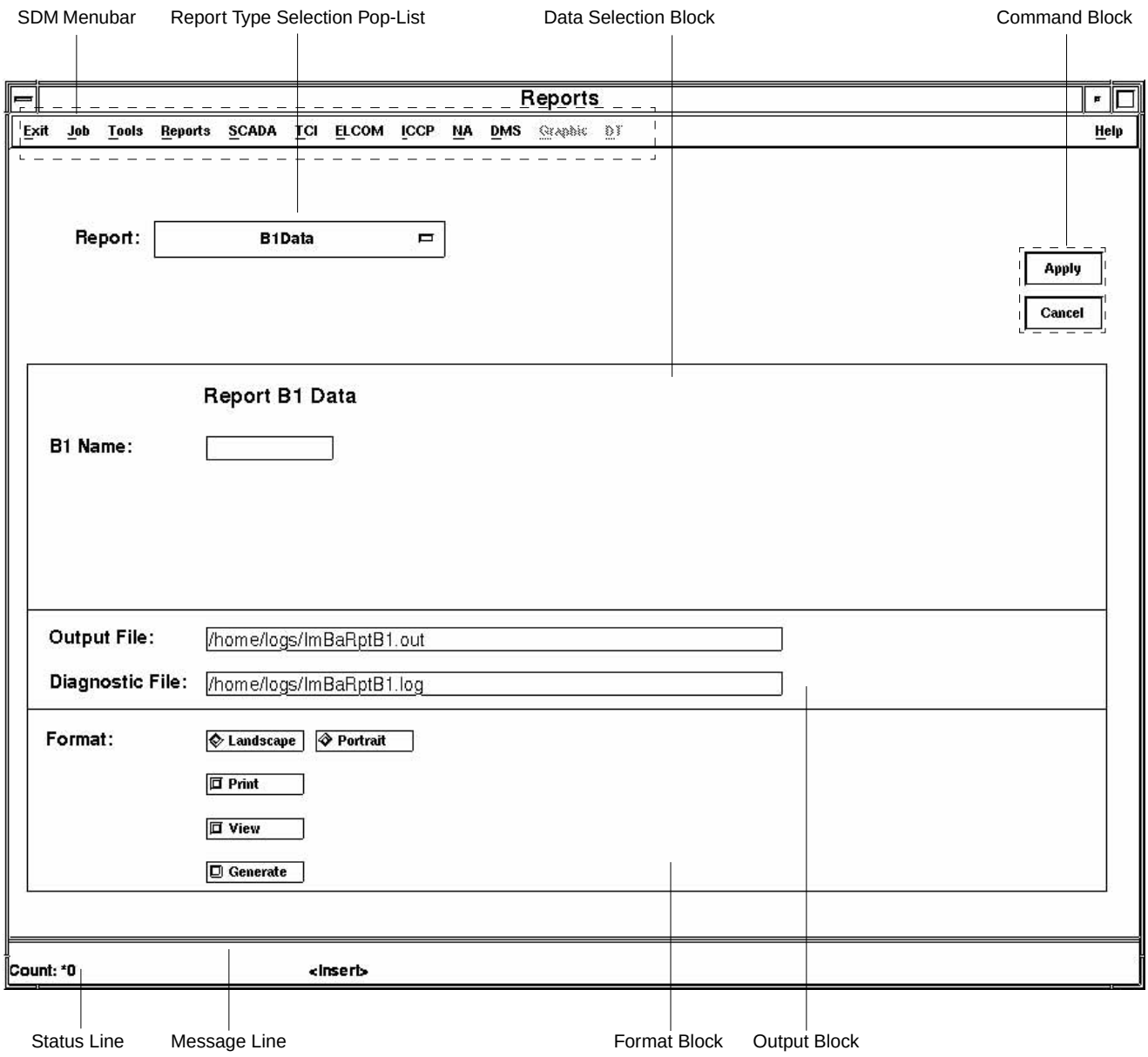
Reports

SDM provides a Report feature that allows you to summarize the content of a single source database table or a number of associated source database tables as a so-called “report”. The basic structure of a report and its appearance is preconfigured. Reports are activated via particular SDM forms. The forms for SCADA reports and SDM reports are described in this chapter, for a description of reports for other subsystems refer to the respective SDM Reference guides.

SCADA Report Form

This form can be opened by selecting the menu **Reports** in the SDM Menubar of the Job Management Form.

FIGURE 37 Basic Structure of the SCADA Report Form



The SCADA Report Form is composed of the following components:

- SDM Menubar
- Command Block
- Message Line
- Status Line

  These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section 'SDM Basics' on page 3 in this document.
- Report Type Selection Pop-List
- Data Selection Block
- Output Block
- Format Block

  These form components are described in detail in the following sections.

Report Type Selection Pop-List

The Report Type Selection Pop-List can be used to choose the type of the data to be reported. The following options are provided:

- **B1 Data**
- **AD Info Data**
- **Connection Data**
- **Network Group Data**
- **Network Group Isolation Data**
- **Block Type Data**
- **Element Type Data**
- **Archive Filter Data**
- **Archive TA Direct**
- **Archive TA Filter**
- **Archive Object Data**

Data Selection Block

Depending on the selected report type, fields for selecting the data to be reported are displayed.

Output Block

- **Output File**
  Specifies the pathname of the output file where the report is stored.
- **Diagnostic File**
  Specifies the pathname where the diagnostic information is stored.

Format Block

- **Page Orientation Group**

  The Page Orientation Group of the SCADA Report Form consists of a group of radio buttons that can be used to select different page orientations for a report. The following radio buttons are provided:

  – **Landscape**
  – **Portrait**

- **View Checkbox**

  When this checkbox is selected, the report currently available in the output file is displayed on the screen.

☞ *When the checkbox is selected, an input field is displayed, where the output terminal can be entered.*

- **Print Checkbox**

  When this checkbox is selected, the report currently available in the output file is printed.

☞ *When the checkbox is selected, an input field is displayed, where the printer can be entered.*

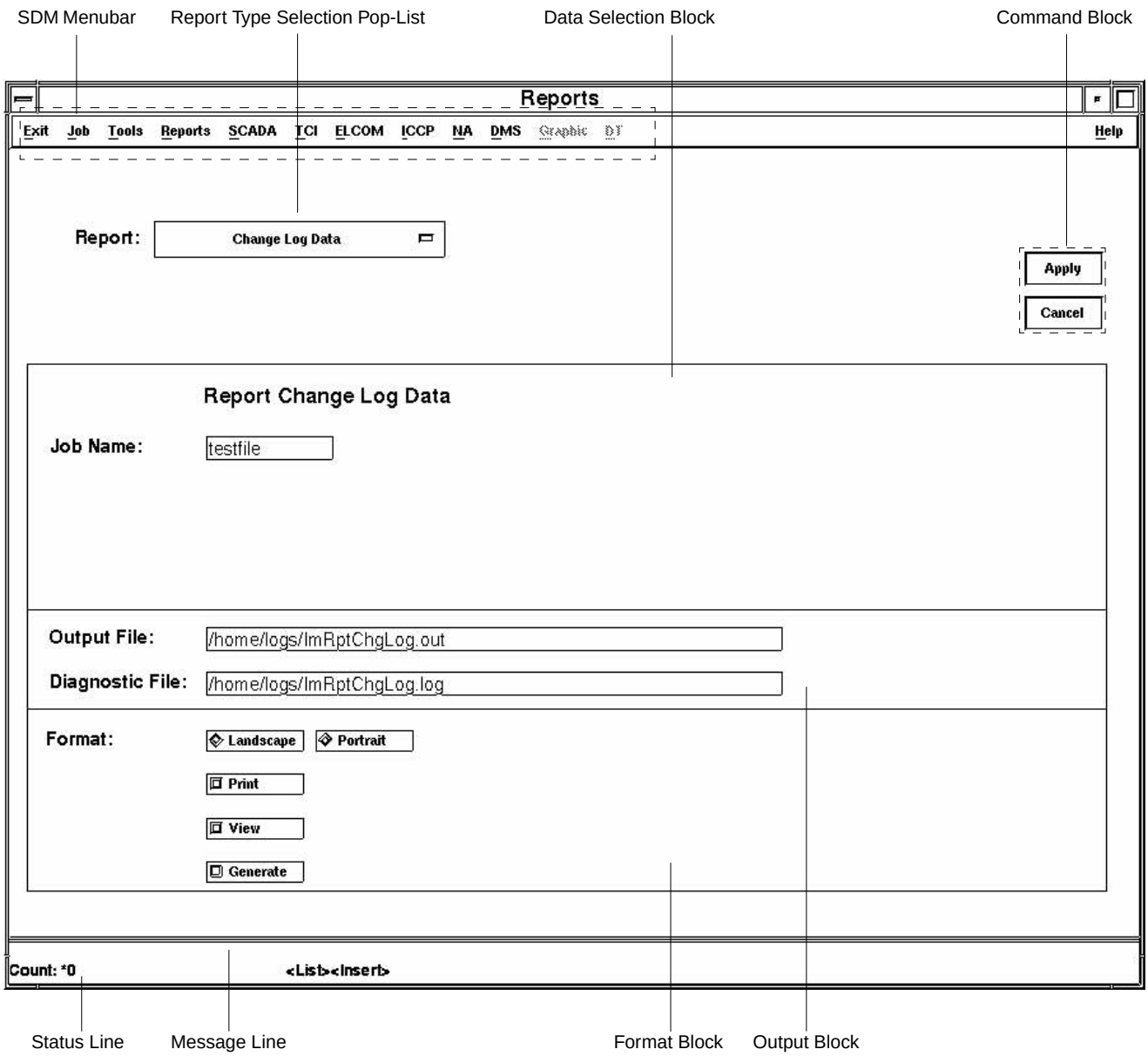
- **Generate Checkbox**

  When this checkbox is selected, a new report is generated and stored in the specified output file.

SDM Report Form

This form can be opened by selecting the menu '**Reports**' in the SDM Menubar of the Job Management Form.

FIGURE 38 Basic Structure of the SDM Report Form



The SDM Report Form is composed of the following components:

- SDM Menubar
- Command Block
- Message Line
- Status Line

  These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section 'SDM Basics' on page 3 in this document.
- Report Type Selection Pop-List
- Data Selection Block
- Output Block
- Format Block

  These form components are described in detail in the following sections.

Report Type Selection Pop-List

The Report Type Selection Pop-List can be used to choose the type of the data to be reported.

Data Selection Block

Depending on the selected report type, fields for selecting the data to be reported are displayed.

Output Block

- **Output File**

  Specifies the pathname of the output file where the report is stored.
- **Diagnostic File**

  Specifies the pathname where the diagnostic information is stored.

Format Block

- **Page Orientation Group**

  The Page Orientation Group of the SDM Report Form consists of a group of radio buttons that can be used to select different page orientations for a report. The following radio buttons are provided:

- **Landscape**
- **Portrait**

■ **View Checkbox**

When this checkbox is selected, the report currently available in the output file is displayed on the screen.

☞ *When the checkbox is selected, an input field is displayed, where the output terminal can be entered.*

■ **Print Checkbox**

When this checkbox is selected, the report currently available in the output file is printed.

☞ *When the checkbox is selected, an input field is displayed, where the printer can be entered.*

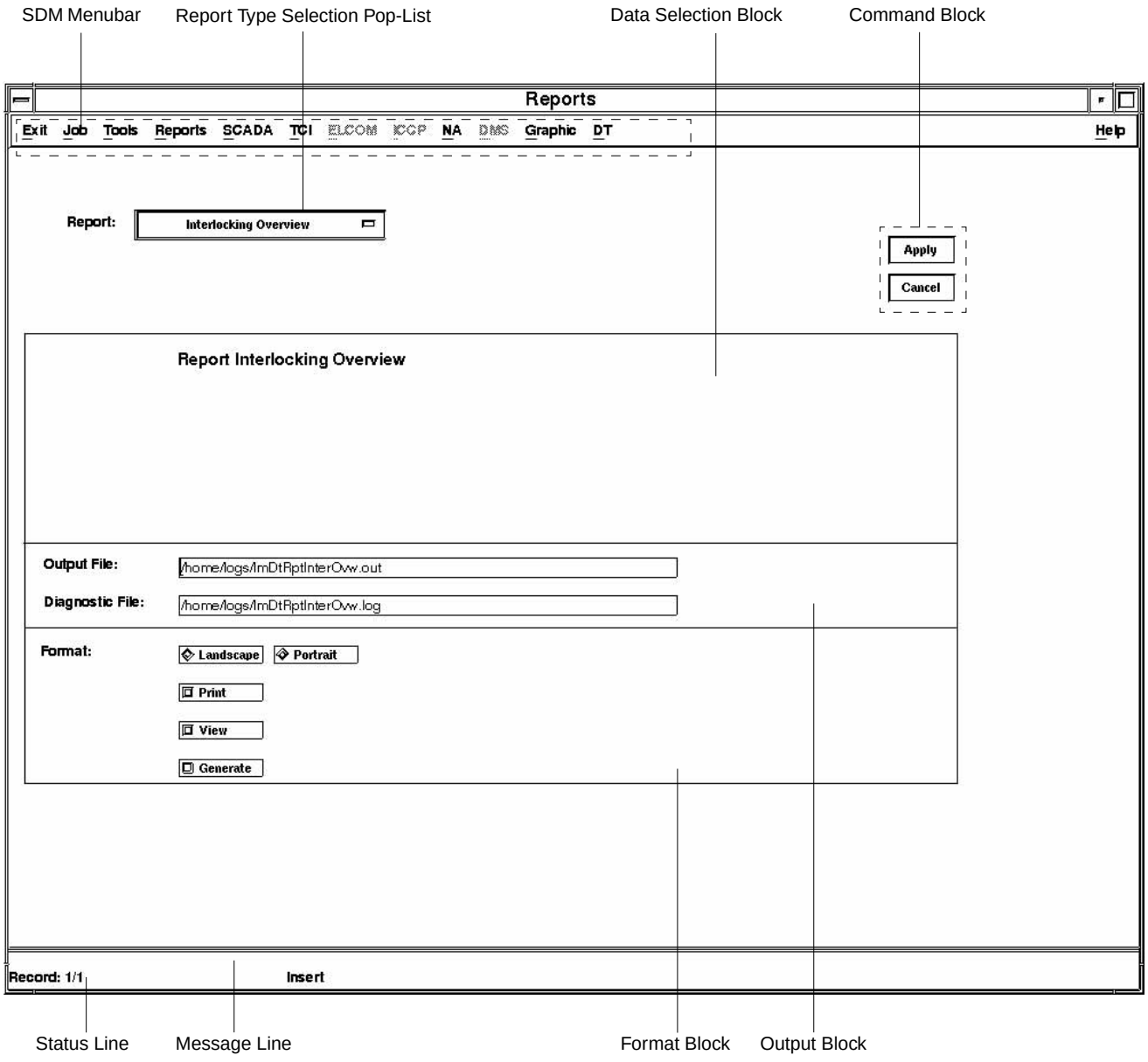
■ **Generate Checkbox**

When this checkbox is selected, a new report is generated and stored in the specified output file.

DT Report Form

This form can be opened by selecting item **DT Reports** of menu **Reports** in the SDM Menubar of the Job Management Form.

FIGURE 39 Basic structure of the DT Report Form



The Type Report Form is composed of the following components:

- SDM Menubar

- Command Block
- Message Line
- Status Line

  These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section 'SDM Basics' on page 3 in this document.
- Report Type Selection Pop-List
- Data Selection Block
- Output Block
- Format Block

  These form components are described in detail in the following sections.

Report Type Selection Pop-List

The Report Type Selection Pop-List can be used to choose the type of the data to be reported. The following options are provided:

- **Interlocking Overview**
- **Combinations Overview**
- **DT Table Details**
- **DT Type Details**
- **DT Group Detail**

Data Selection Block

Depending on the selected report type, fields for selecting the data to be reported are displayed.

Output Block

- **Output File**

  Specifies the pathname of the output file where the report is stored.
- **Diagnostic File**

  Specifies the pathname where the diagnostic information is stored.

Format Block

- **Page Orientation Group**

  The Page Orientation Group of the Type Report Form consists of a group of radio buttons that can be used to select different page orientations for a report. The following radio buttons are provided:

  – **Landscape**
  – **Portrait**

- **View Checkbox**

  When this checkbox is selected, the report currently available in the output file is displayed on the screen.

☞ *When the checkbox is selected, an input field is displayed, where the output terminal can be entered.*

- **Print Checkbox**

  When this checkbox is selected, the report currently available in the output file is printed.

☞ *When the checkbox is selected, an input field is displayed, where the printer can be entered.*

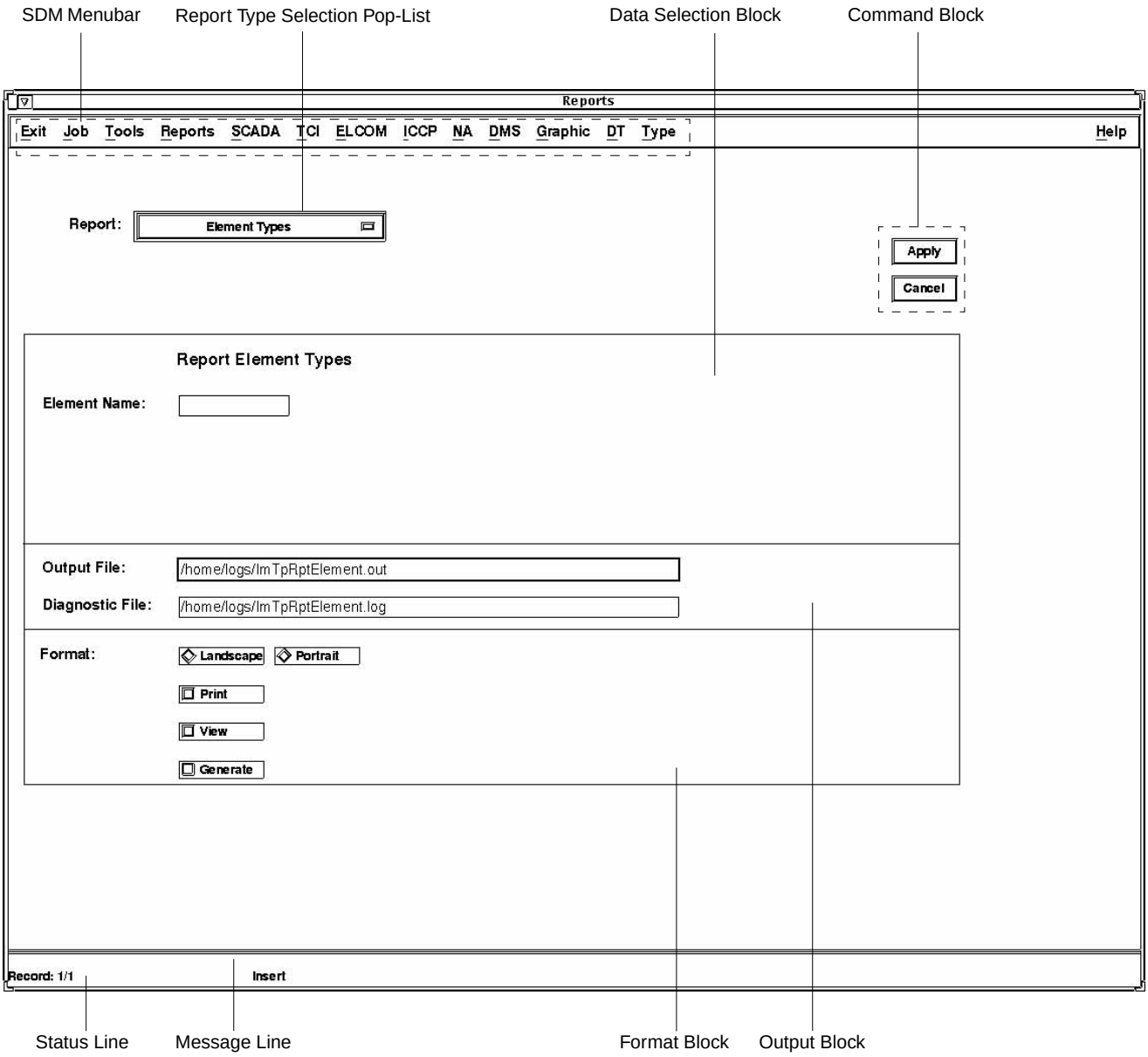
- **Generate Checkbox**

  When this checkbox is selected, a new report is generated and stored in the specified output file.

Type Report Form

This form can be opened by selecting item **Type Reports** of menu **Reports** in the SDM Menubar of the Job Management Form.

FIGURE 40 Basic structure of the Type Report Form



The Type Report Form is composed of the following components:

- SDM Menubar

- Command Block
- Message Line
- Status Line

  These form components are common in all SDM forms. For a detailed description, please refer to the corresponding sections in chapter 3, section 'SDM Basics' on page 3 in this document.
- Report Type Selection Pop-List
- Data Selection Block
- Output Block
- Format Block

  These form components are described in detail in the following sections.

Report Type Selection Pop-List

The Report Type Selection Pop-List can be used to choose the type of the data to be reported. The following options are provided:

- **Element Types**
- **Element Types with Used TAs**
- **Info Types**
- **Info Types with Used TAs**

Data Selection Block

Depending on the selected report type, fields for selecting the data to be reported are displayed.

Output Block

- **Output File**

  Specifies the pathname of the output file where the report is stored.
- **Diagnostic File**

  Specifies the pathname where the diagnostic information is stored.

Format Block

- **Page Orientation Group**

The Page Orientation Group of the Type Report Form consists of a group of radio buttons that can be used to select different page orientations for a report. The following radio buttons are provided:

- **Landscape**
- **Portrait**

■ **View Checkbox**

When this checkbox is selected, the report currently available in the output file is displayed on the screen.

☞ *When the checkbox is selected, an input field is displayed, where the output terminal can be entered.*

■ **Print Checkbox**

When this checkbox is selected, the report currently available in the output file is printed.

☞ *When the checkbox is selected, an input field is displayed, where the printer can be entered.*

■ **Generate Checkbox**

When this checkbox is selected, a new report is generated and stored in the specified output file.