SWIFT Format Plug-in
User's Guide

Version 3.4

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SWIFT

S.W.I.F.T. SCRL is the abbreviation for Society for Worldwide Interbank Financial Telecommunication, Societé Coopérative à Responsibilité Limitée. SWIFT's purpose is to provide technology-based communication services across all financial markets through member banks so that they can profitably meet their own and their end-customers' needs.

In a financial perspective, standards enable financial institutions to move from manual to automated initiation and processing of financial transactions. The message text standards have been developed to support the business transactions of S.W.I.F.T. users. To ensure that the multitude of practices and conventions of users are in harmony, financial messages transmitted via the S.W.I.F.T. network must adhere to the message text standards.

There are important benefits because of standardization of messages. These include:

- automation,
- reduced risk of errors and misunderstandings,
- reduced operating costs,
- improved productivity,
- increased efficiency in processing of messages (routing and preparation),
- faster and more cost effective account reconciliation, and
- the ability to maintain more comprehensive management information.

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SWIFT messages are represented by a three-digit number, for example, ***MT 112***.

- The first digit defines the **message category**, indicating the general usage of the message. Here, Category 1 refers to Customer Payments & Cheques.

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- The second digit of the message type indicates the **message group**. For example, Message group 1 refers to Cheque Payments.

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- The third digit indicates the particular **type of message**, representing a specific function of the message. In our example, Message type 2 refers to Status of a Request for Stop Payment of a Cheque.

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See Also:

Terminology
Creating a SWIFT Format
Entering the SWIFT Specification
SWIFT External Message UI
SWIFT External Format UI
Saving a SWIFT Message Format

Terminology

Sequence

Each message type contains zero, one or more sequences. A sequence is a group of related information made up of one or more fields and/or sub-sequences. A sequence may or may not be delimited. For delimiting a sequence use a start indicator and end indicator or start indicator alone.

SubSequence

A subsequence is a sequence nested within another sequence. The fields contained within each subsequence can be either discrete (non-generic) or generic.

Generic Field

A generic field is used to describe groups of business data that are common throughout the messages. It is then made unique by the addition of a qualifier. Generic fields allow for the consistent identification of data in a logical and structured way. Each generic field will always have the same meaning across all sensitive messages.

Non-Generic Field

A non-generic field, unlike a generic field, is used for one purpose only.

Qualifier

A qualifier is one that gives a complete meaning about a generic field. Qualifiers allow the identification of the type of data.

See Also:

SWIFT
Creating a SWIFT Format

Creating a SWIFT Format

A SWIFT message format can be created in the designer either from

- Existing SWIFT message format, or
- Empty message format

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When using an existing format, the same set of sequences and fields are available for the newly created format. Though the mandatory elements cannot be changed, the user has the option of enabling or disabling the optional sequences and fields as per requirement. The existing SWIFT formats are available as XML files in the location <installation dir>\config\swift\format.

When using an empty message format, the user has to add each sequence and field as per the specification. This happens when the format has to be entered the first time, after which the format can be saved and used to build other formats using the first option.

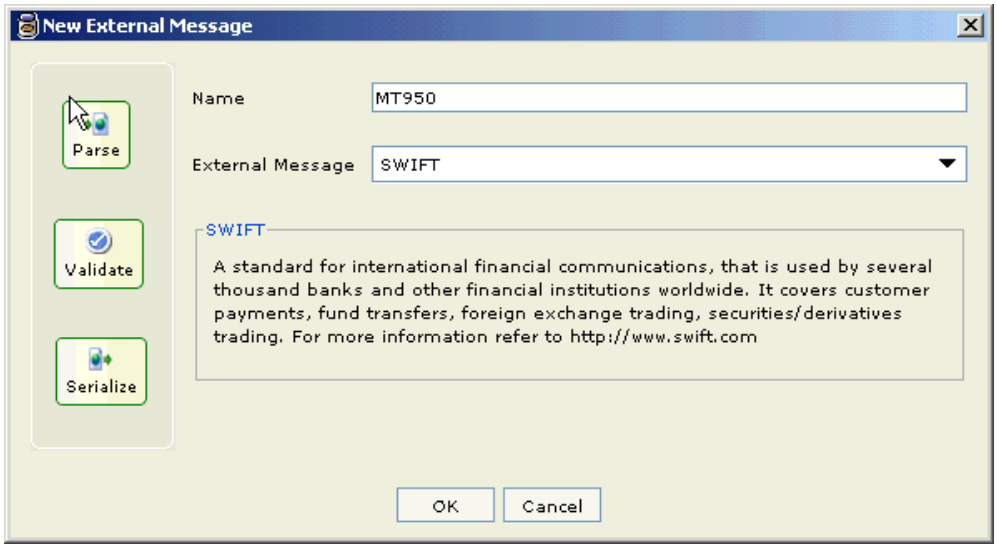
See Also:

Creating a SWIFT Format based on an existing SWIFT message format
Creating a SWIFT Format from an empty message format
Saving a SWIFT Message Format

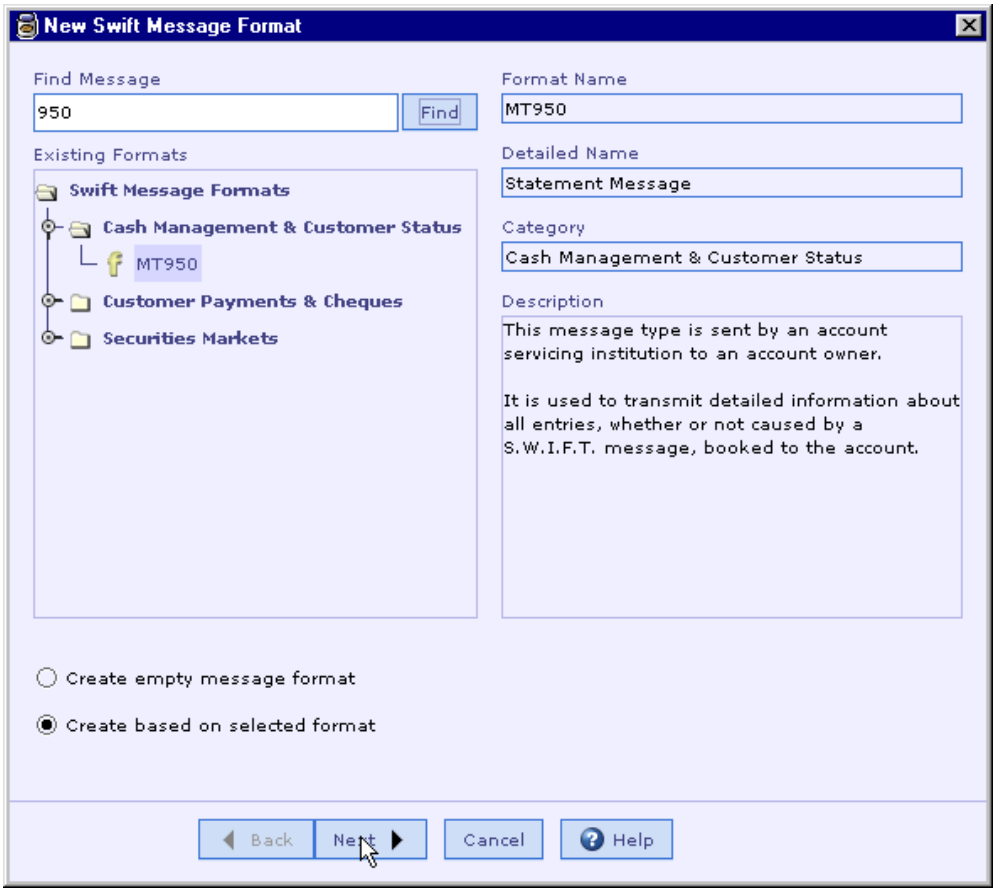
Creating a SWIFT Format Based on an Existing SWIFT Message Format

1. Right-click the Cartridge node in the Designer. Select the **New External Message** menu item from the context menu to create a SWIFT external format.

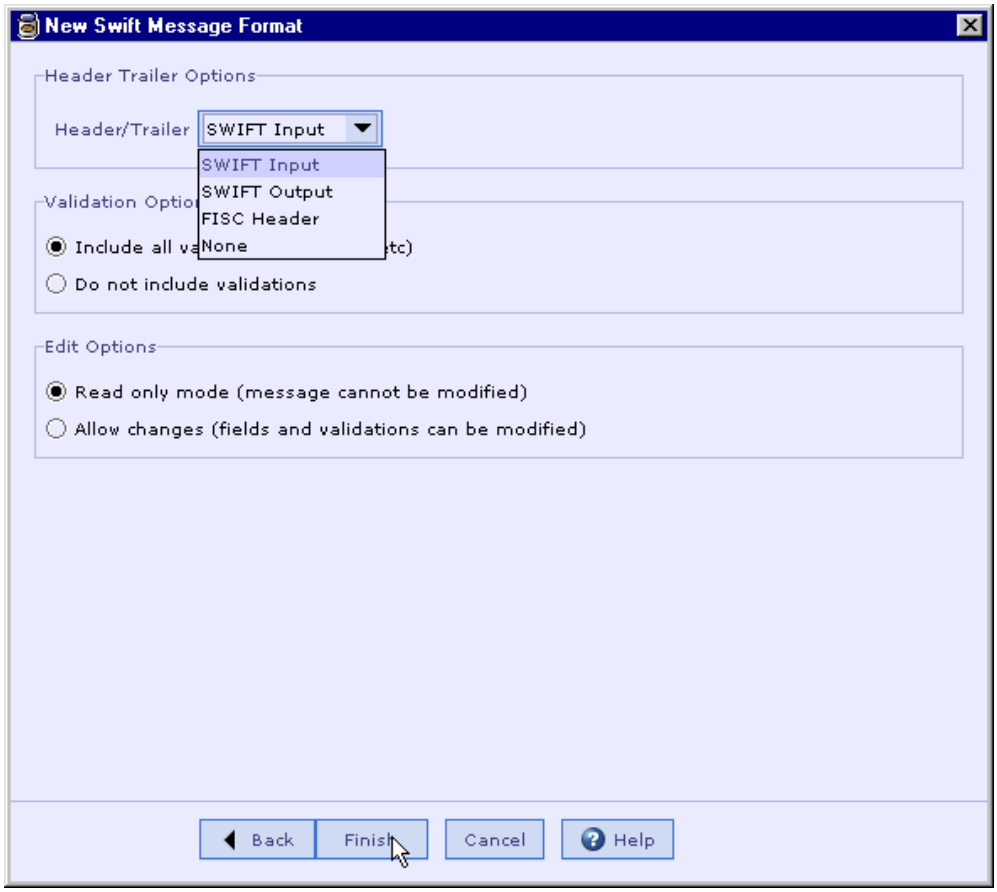
2. In the **New External Message** dialog that appears enter the **Transformation Name** and select **SWIFT** from the **External Message** listbox . Click OK.



3. In the **New Swift Message Format** dialog that appears, select an existing format based on which the new format is to be created. Select **Create based on selected format** radio button. Click **Next**.



4. In the next dialog that appears you have various options to choose Header/Trailer, Validation and Edit options as shown in the following picture:



5. As seen in the above picture, you have the option to include specific Header/Trailer (SWIFT Input/SWIFT Output/FISC Header(custom) or no Header/Trailer) from the list box. (Note that if you choose SWIFT Input or SWIFT Output, the Basic Header and Application Header appearing in the Header section UI of the message are set as mandatory. The Header/Trailer fields cannot be modified/removed from UI). You have the option to include or not to include validations. You also have the option to create the message format in Read Only mode or editable mode. After selecting the required options, click **Finish** button.

6. The new format is created in the Designer as shown below.

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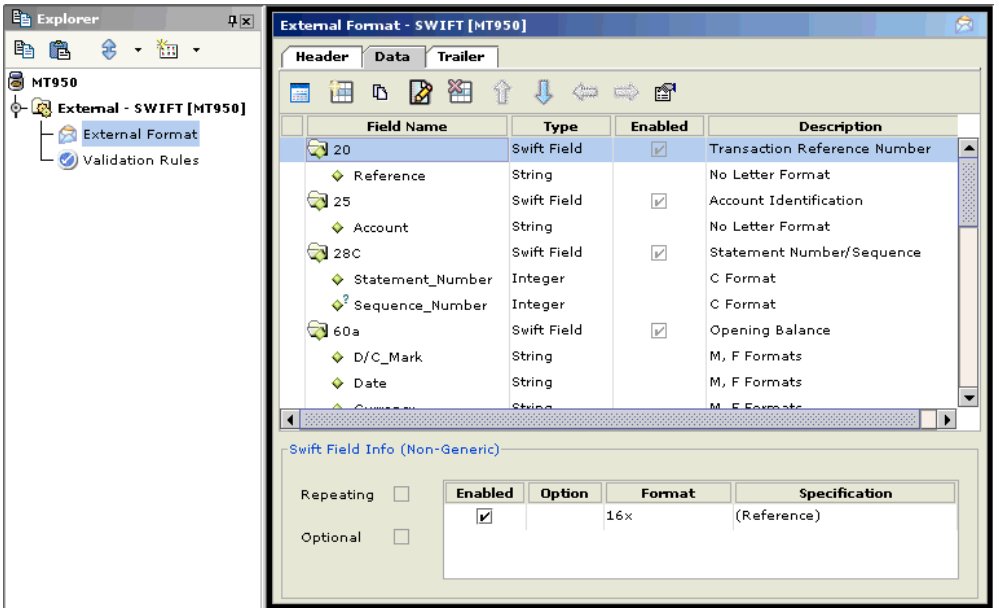

7. Note that the Design Element UI tool bar buttons in the figure are disabled thereby not allowing the user to modify the format as we have chosen Read Only mode in the Edit options.

8. The **Enabled** column of the format table allows the user to pick from the optional fields, qualifiers and options for the format. By default all the optional entities are enabled. To enable a qualifier, select the field in the format table and select or deselect the check box in the **Enabled** column for the qualifiers displayed in the **SWIFT Field Info (Generic)** panel below the table.

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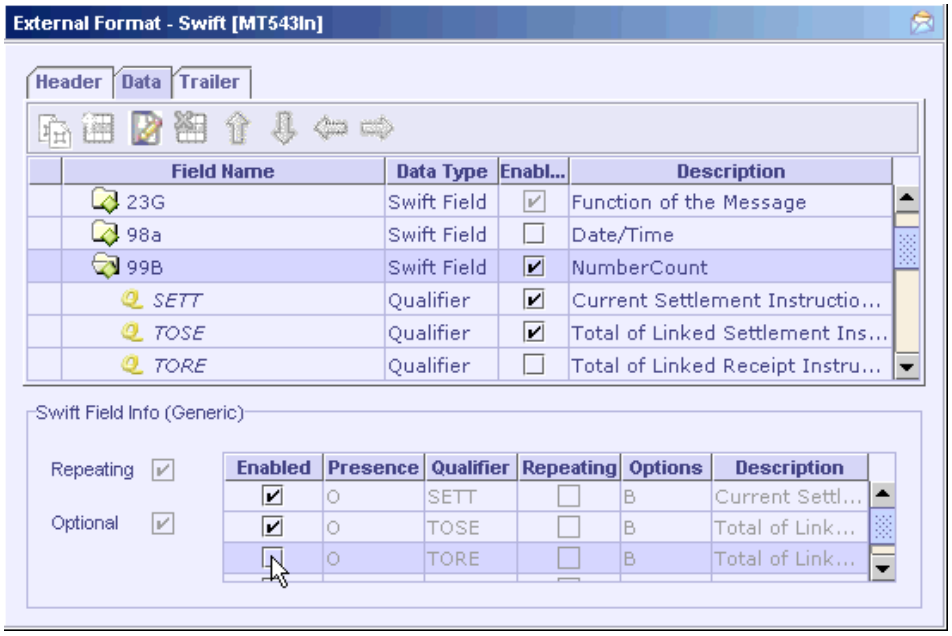
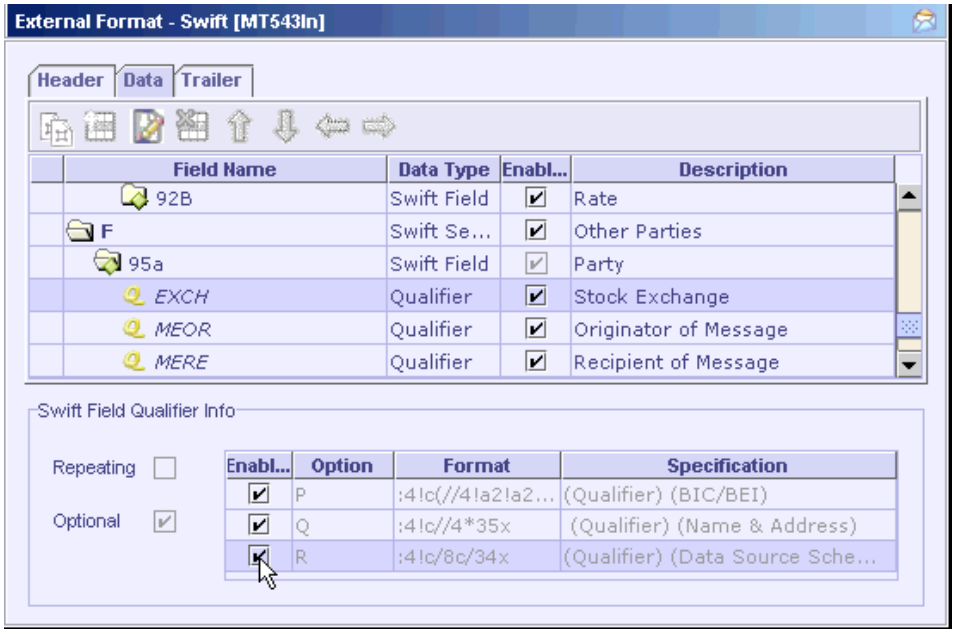
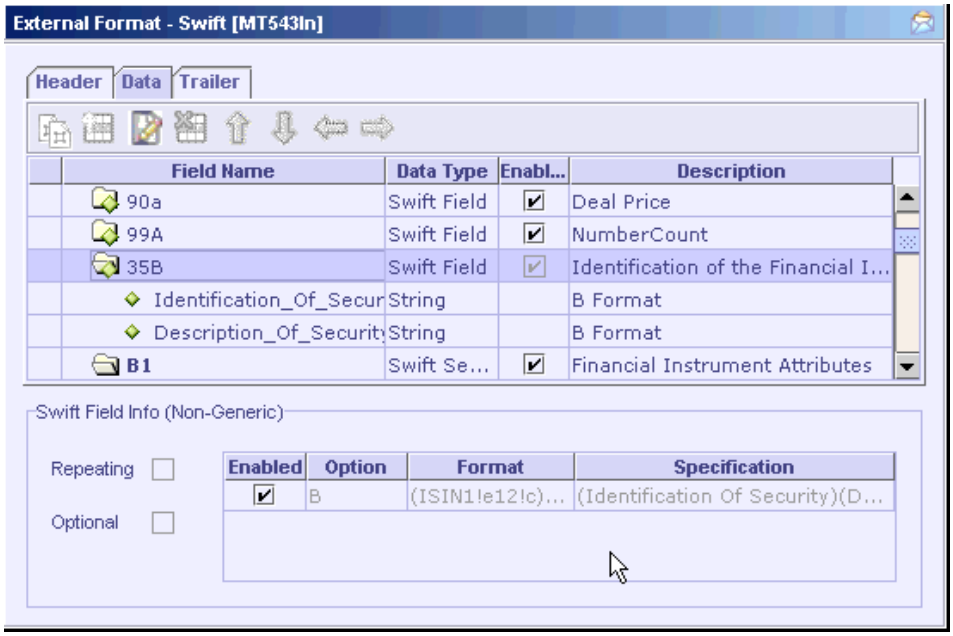


Similarly to pick the options for a qualifier, select the qualifier in the table and select or deselect the check box in the **SWIFT Field Qualifier Info** panel below.



To pick the options for a non-generic field, select the field in the table and select or deselect the check box in the **Enabled** column of the options displayed in the **SWIFT Field Info (Non-Generic)** panel below the table.



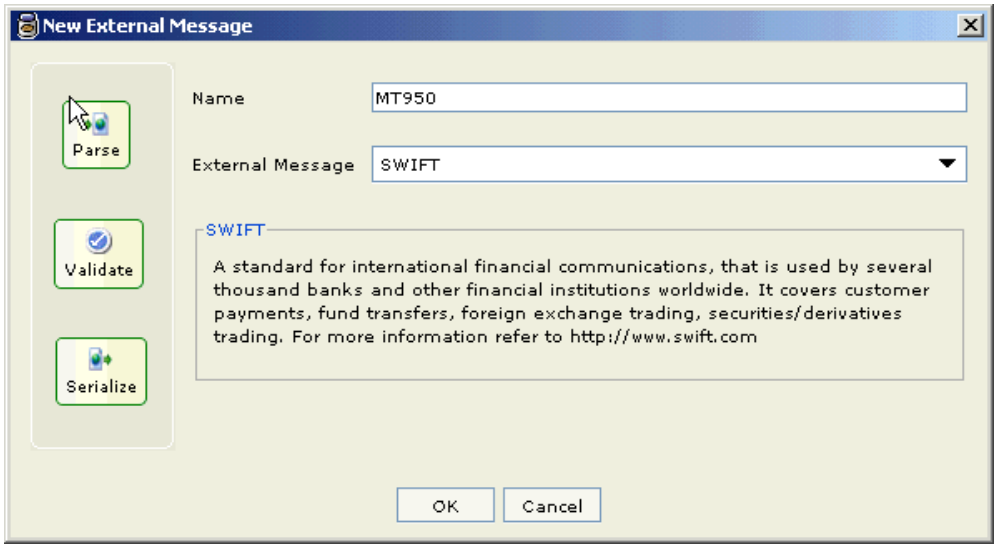
See Also:

[Creating a SWIFT Format from an empty message format]
[Entering the SWIFT Specification]
[Saving a SWIFT Message Format]

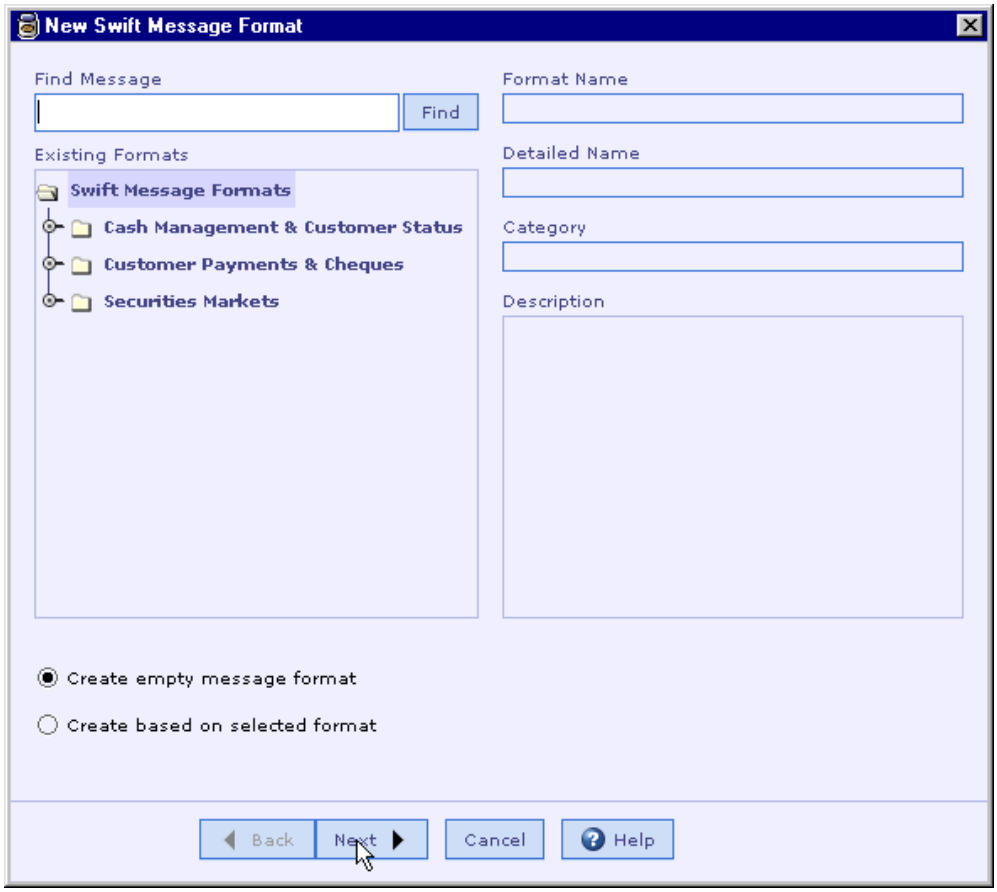
Creating a SWIFT Format from an empty message format

1. Right-click the Cartridge node in Designer and select the **New External Message** menu item from the context menu to create a SWIFT external format.

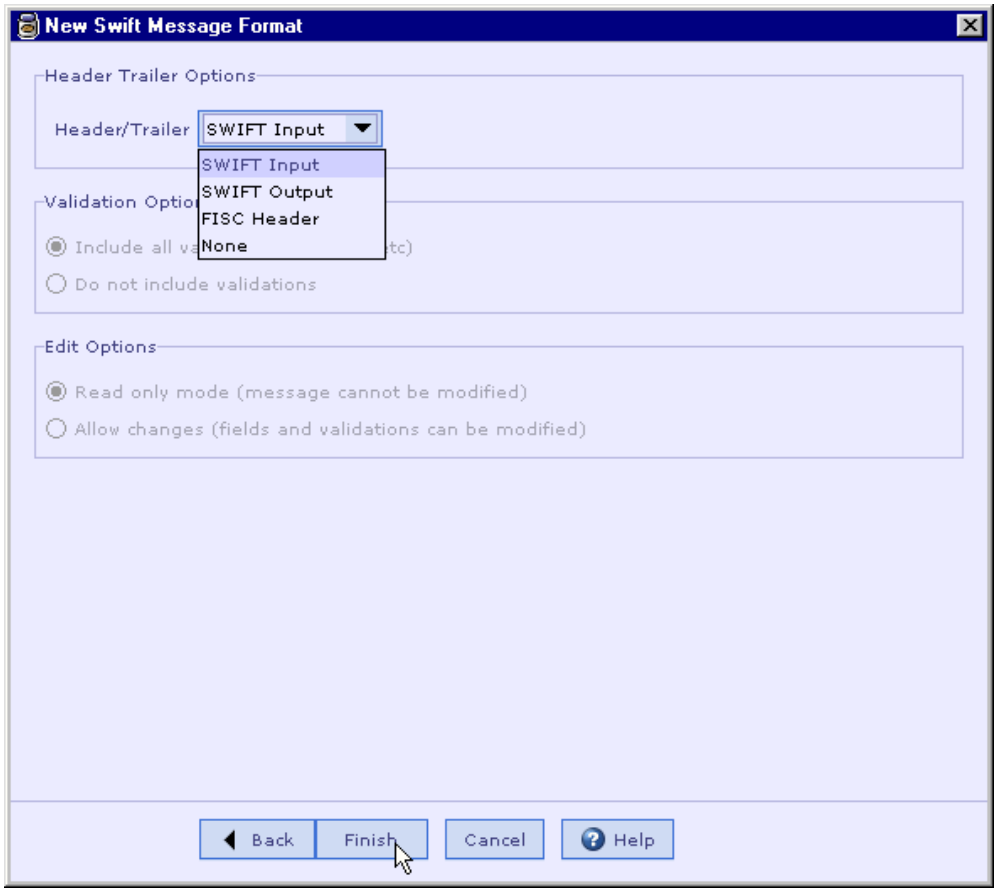
2. In the **New External Message** dialog that appears, enter the **Transformation Name** and select **SWIFT** from the **External Message** listbox. Click OK.



3. In the **New Swift Message Format** dialog that appears, select **Create empty message format** radio button. Click **Next.**



4. In the next dialog box that appears see that the “Validation Options” and “Edit Options” pane are disabled as they are not applicable in this case. You have the option to include specific Header/Trailer (SWIFT Input/SWIFT Output/FISC Header(custom) or no Header/Trailer as shown in the following picture. (Note that if you choose SWIFT Input or SWIFT Output, the Basic Header and Application Header appearing in the Header section UI of the message are set as mandatory. The Header/Trailer fields cannot be modified/removed from UI).



5. After selecting the required Header/Trailer from the list box, click **Finish** button.

6. An empty message format is created as shown below.

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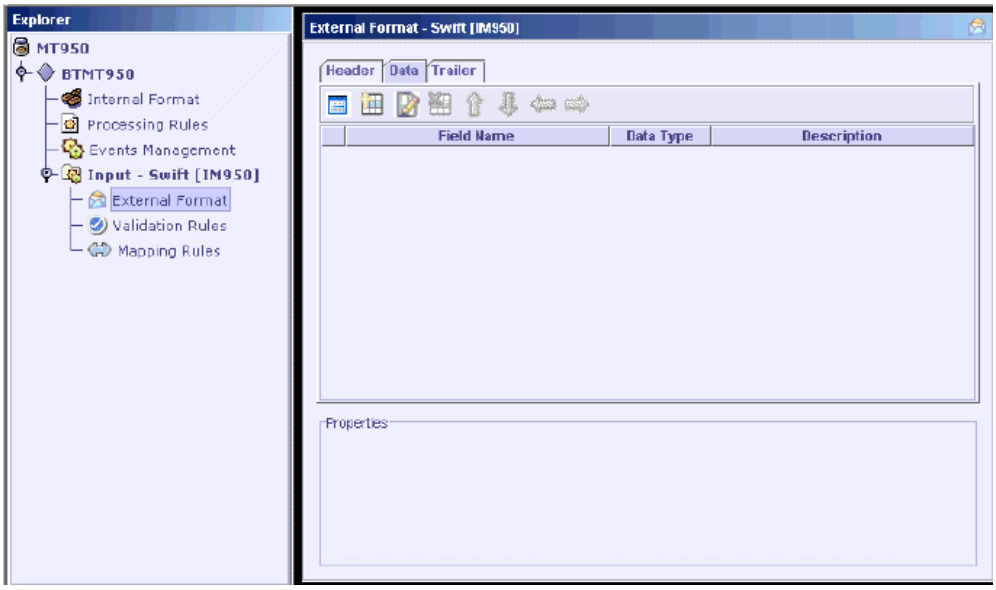


See Also:

Creating a SWIFT Format based on an existing SWIFT message format
Entering the SWIFT Specification
Saving a SWIFT Message Format

Entering the SWIFT Specification

A SWIFT message is composed of sequences and fields. A sequence is a group of related information made up of one or more fields and/or sub-sequences. A field may be either generic or non-generic.
The user can construct a SWIFT message in the External Format UI by adding sequences/fields and specifying properties for them.

See Also:

Terminology
SWIFT External Format UI
SWIFT Sequence
Adding a SWIFT Sequence
Adding a SWIFT Field
Updating a SWIFT Field
Customize Field
Removing a SWIFT Field
Adding Copy of Fields
Adding validations for a sub-field
Removing validations from a sub field

SWIFT Sequence

A **Sequence** is a group of related information, delimited in most of SWIFT message formats. However, there are a few formats, which have sequences without delimiters. The Designer provides for creating sequences with or without delimiters. Furthermore, the sequences with delimiters either have only the start delimiter, or both the start and end delimiters, depending on the format's specification. An example of each of the three cases is as follows.

See Also:

Sequence Without Delimiters
Sequence With Start and End Delimiters
Sequence With Start Delimiter

Sequence Without Delimiters

Consider the message MT101. An extract of the format is given below.

Status	**Tag**	**Field Name**	**Content/Options**
Mandatory Sequence A General Information			
M	20	Sender's Reference	16x

.....
.....

O	25	Authorisation	35x
----->**Mandatory Repetitive Sequence B Transaction Details**			
M	21	Transaction Reference	16x
O	21F	F/X Deal Reference	16x

.....
.....

O	36	Exchange Rate	12d
-----|			

Note sequences A and B of this format. They have neither the start delimiter nor the end delimiter. To add such a sequence, see Add a SWIFT Sequence without Delimiters.

See Also:

Sequence With Start and End Delimiters
Sequence With Start Delimiter

Sequence With Start and End Delimiters

Consider the message MT543. An extract of the format is given below.

Status	Tag	Qualifier	Generic Field Name	Detailed Field Name	Content/Options
Mandatory Sequence A General Information					
M	16R			Start of Block	GENL
M	20C	SEME	Reference	Sender's Reference	:4!c//16x

.....
.....
.....

-----> Repetitive Optional Subsequence A1 Linkages					
M	16R			Start of Block	LINK
O	22F	LINK	Indicator	Linkage Type Indicator	:4!c/[8c]/4!c
O	13A	LINK	Number Identification	Linked Transaction	:4!c//3!c
M	20C	4!c	Reference	(see qualifier description)	:4!c//16x
M	16S			End of Block	LINK
-----| End of Subsequence A1 Linkages					
M	16S			End of Block	GENL

End of Sequence A General Information **Mandatory Sequence B Trade Details**					
M	16R			Start of Block	TRADDET
O	94B	TRAD	Place	Place of Trade	:4!c/[8c]/4!c[/30x]
----->					

.....
.....
.....

Note that in the above format, the sequences A and A1 have the 'Start of Block' field 16R and the 'End of Block' field 16S to indicate a sequence. To add such a sequence, see Adding a SWIFT Sequence with Start and End Delimiters.

See Also:

Sequence Without Delimiters
Sequence With Start Delimiter

Sequence With Start Delimiter

Consider the message MT300. An extract of the format is given below.

Status	**Tag**	**Field Name**	**Content/Options**
Mandatory Sequence A General Information			
M	15A	New Sequence	(CrLf)
M	20	Sender's Reference	16x
O	21	Related Reference	16x

.....
.....
.....

Mandatory Sequence B Transaction Details			
M	15B	New Sequence	(CrLf)
M	30T	Trade Date	8!n
M	30V	Value Date	8!n
M	36	Exchange Rate	12d

……
……
……

Optional Sequence C Optional General Information			
M	15C	New Sequence	(CrLf)
O	29A	Contact Information	4*35x

……
……
….

Note that the above message has the start indicator field 15***X*** – New Sequence for the sequences A, B, C, etc. But there is no end indicator. To add such a sequence, see Adding a SWIFT Sequence with Start Delimiter.

See Also:

Sequence Without Delimiters
Sequence With Start and End Delimiters

Adding a SWIFT Sequence

A sequence is a group of related information made up of one or more fields and/or sub-sequences. A sequence may or may not be delimited. Three types of SWIFT sequences can be added. They are

Sequence Without Delimiters
Sequence With Start and End Delimiters
Sequence With Start Delimiter

See Also:

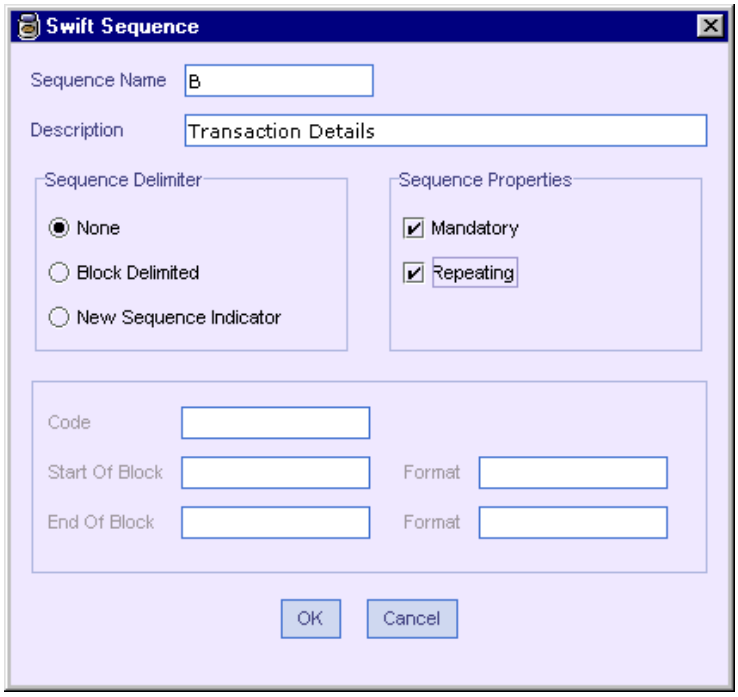
Adding a SWIFT Sequence without Delimiters

[Adding a SWIFT Sequence with Start and End Delimiters]
[Adding a SWIFT Sequence with Start Delimiter]
[Adding a SWIFT Field]
[Adding Copy of Fields]

Adding a SWIFT Sequence without Delimiters

1. Click the **Add New Sequence** button in the toolbar of the **External Format - SWIFT** UI.

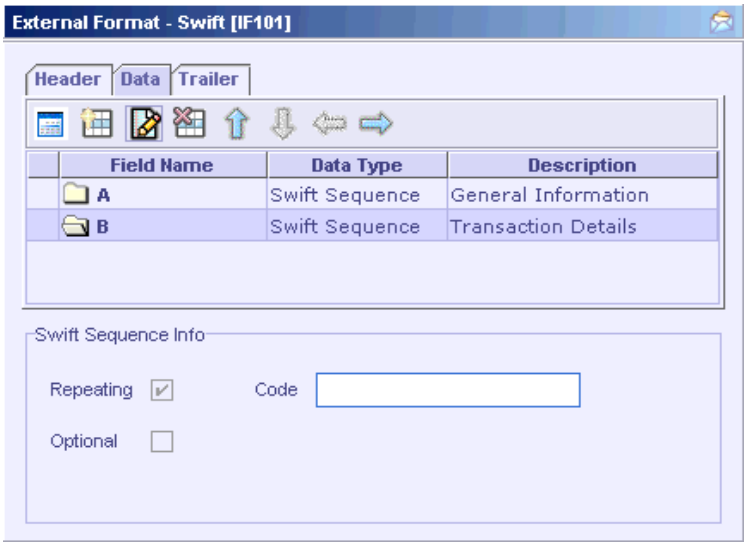
2. The SWIFT Sequence dialog appears. Enter the Sequence Name and Description.



3. Select None in **Sequence Delimiter**. Select the Mandatory and Repeating properties of the sequence as required.

4. For this case, the last section about the delimiters and their format is not required and hence disabled. Click OK.

5. The new sequence is added to the format as shown below.



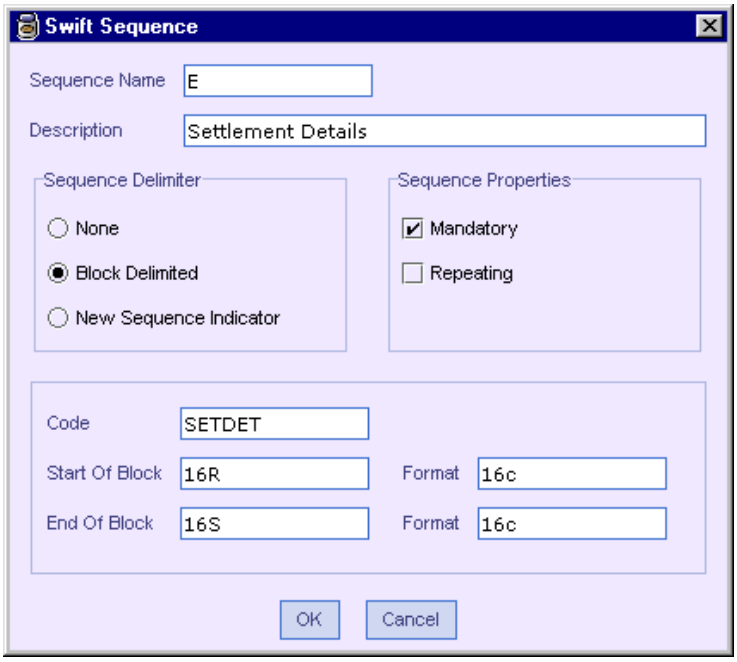
See Also:

Sequence Without Delimiters
Adding a SWIFT Sequence with Start and End Delimiters
Adding a SWIFT Sequence with Start Delimiter

Adding a SWIFT Sequence with Start and End Delimiters

1. Click the **Add New Sequence** button in the toolbar of the **External Format - SWIFT** UI.

2. The **SWIFT Sequence** dialog appears. Enter the **Sequence Name** and **Description**.

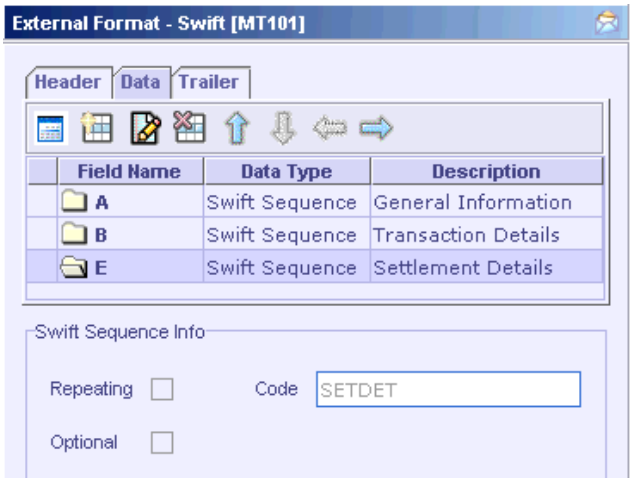


3. Select Block Delimited in **Sequence Delimiter**. Select the Mandatory and Repeating properties of the sequence as per the specification.

4. The **Start Of Block** and **End Of Block** text fields are automatically populated with values 16R and 16S and the corresponding formats are populated with value 16c when the **Sequence Delimiter** is specified in the step above. They can be modified if required.

5. Enter the code (In case of block delimited sequence, only if you give Code you will be able to add the sequence, so Code is mandatory not optional) in the **Code** text field. Click OK.

6. The sequence is added to the format as below.



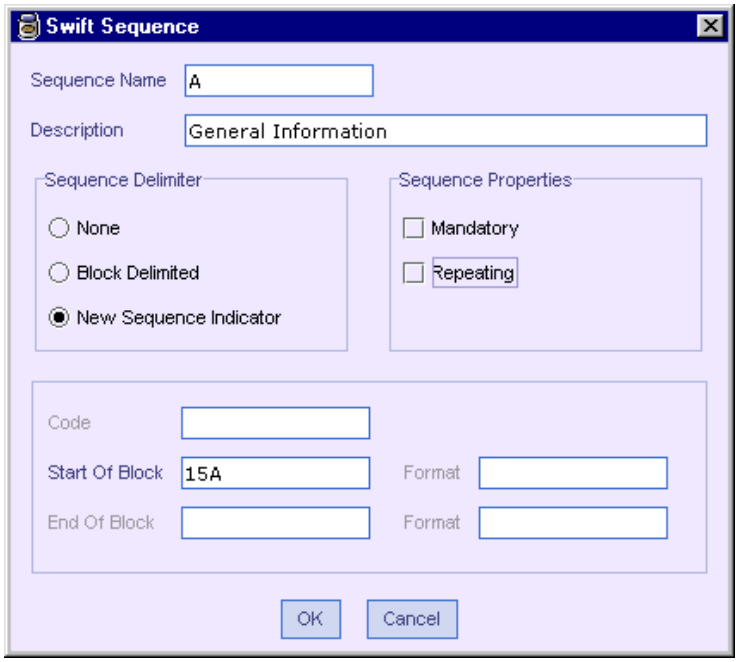
See Also:

Sequence With Start and End Delimiters
Adding a SWIFT Sequence without Delimiters
Adding a SWIFT Sequence with Start Delimiter

Adding a SWIFT Sequence with Start Delimiter

1. Click the **Add New Sequence** button in the toolbar of the **External Format - SWIFT** UI.

2. The **SWIFT Sequence** dialog appears. Enter the **Sequence Name** and **Description**.



3. Select New Sequence Indicator in **Sequence Delimiter**. Select the Mandatory and Repeating properties of the sequence as per the specification.

4. The **Start Of Block** text field is automatically populated with value 15A when the **Sequence Delimiter** is specified in the step above. This can be changed to your requirement. The **End Of Block** and **Code** are not relevant for this case and hence disabled. Click OK.

5. The sequence is added to the format as in the previous cases.

See Also:

Sequence With Start Delimiter
Adding a SWIFT Sequence without Delimiters
Adding a SWIFT Sequence with Start and End Delimiters

Adding a SWIFT Field

Two types of SWIFT fields can be added in the SWIFT External Format UI.

Generic Field- It is used to describe group of business data that are common throughout the messages. It is then made unique by the addition of a qualifier.

Non Generic Field- Unlike a generic field, is used for one purpose only.

See Also:

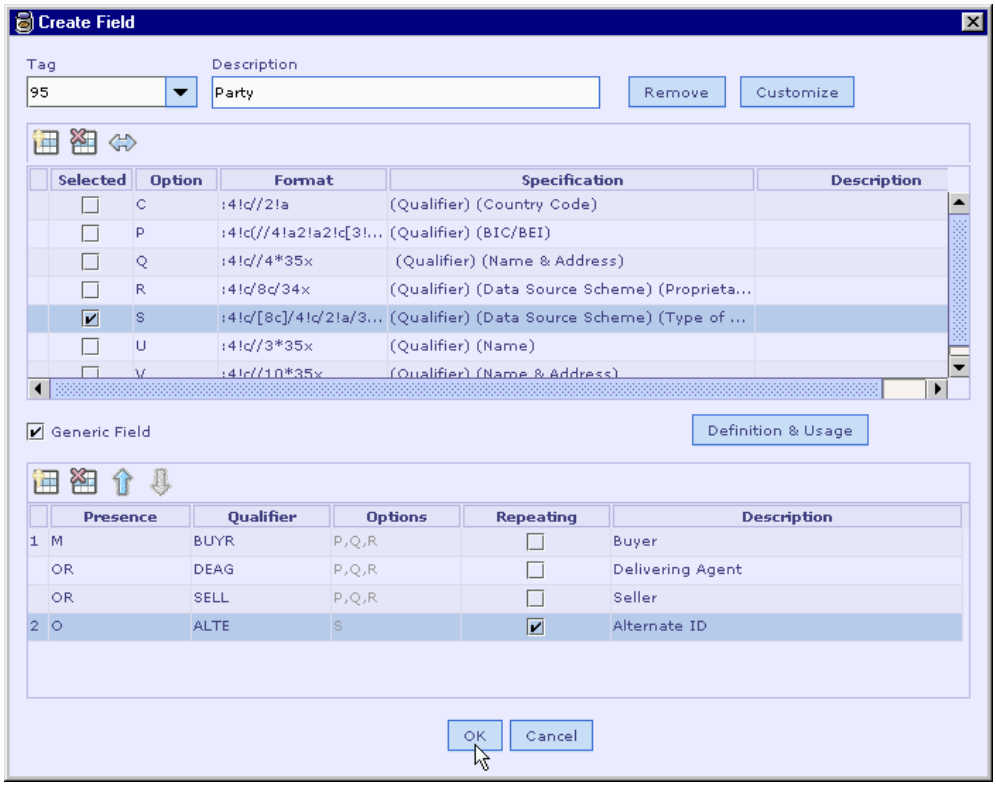
Terminology
Adding a new Generic Field
Adding a Non-Generic Field
Updating a SWIFT Field
Removing a SWIFT Field
Customize Field
Adding validations for a sub-field
Removing validations from a sub field
Adding Copy of Fields
Adding a SWIFT Sequence

Adding a New Generic Field

Generic fields are used to describe the groups of business data that are common throughout the messages. A generic field value always starts with a colon (**:**), followed by a Qualifier (of format 4!c), followed by zero or more sub-fields. To add a generic field to the format follow the steps given below.

1. Click the **Add New SWIFT Field** button in the toolbar of the **External Format - SWIFT** UI. The **Create Field** dialog appears.

2. Enter the field tag in the **Tag** combo box and press **Enter**. The toolbar buttons of the options and qualifiers table are now enabled.



3. Enter the description of the field in the **Description** text field.

4. For customizing a field, refer section Customize Field.

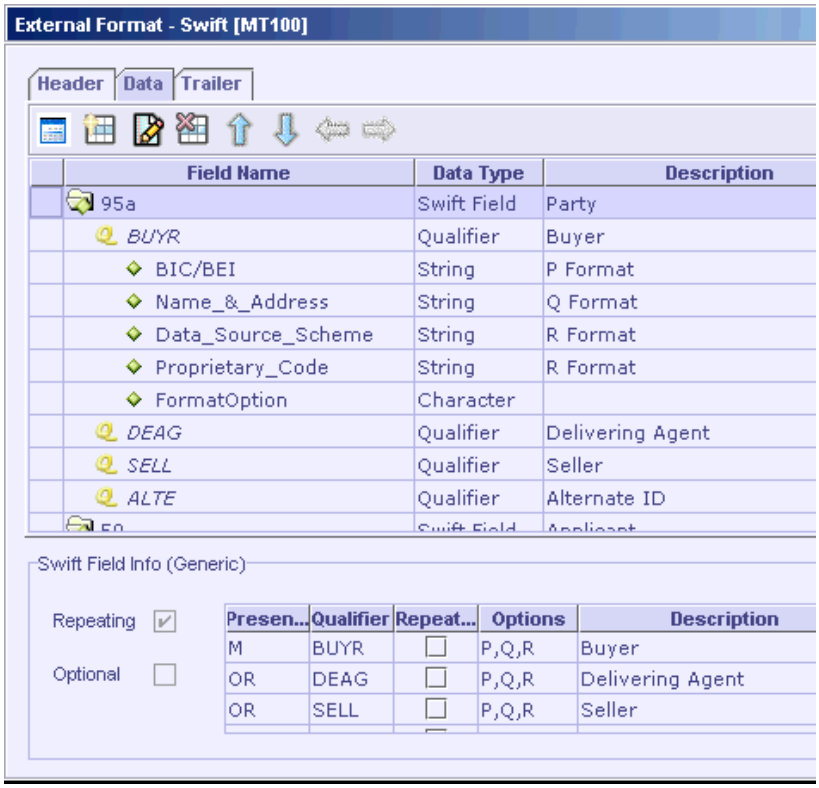
5. Add the Options for the field.

6. Make sure the **Generic Field** check box is selected.

7. Add the Qualifiers and map them to the Options of the field.

8. For a field existing already, the description and Options are automatically populated when the field is selected from the **Tag** list. But the Qualifiers have to be added, each time a field is added to the message format.

9. Click OK. The field is added to the format as found in the **External Format - SWIFT** UI. Note that the field shows a unique collection of subfields of the options selected for a Qualifier.



See Also:

Adding a Non-Generic Field

Adding Field Options

1. Click the **Add New Options** button in the **Create Field** or **Modify Field** dialog.

2. A new row is added in the options table. Enter the Option, its format, specification and description in the respective columns.

3. When a row is added, the option name by default is populated in the alphabetical order, considering the option name of the last row. For the first time, it is populated as A. This can be changed as required. To know how to enter the format, refer the section Entering an Option Format. To enter the specification, refer Entering an Option Specification.

4. For a generic field, the checkbox in the **Selected** column is not enabled at this point, as qualifiers are not yet added. Only on adding the qualifiers the column is

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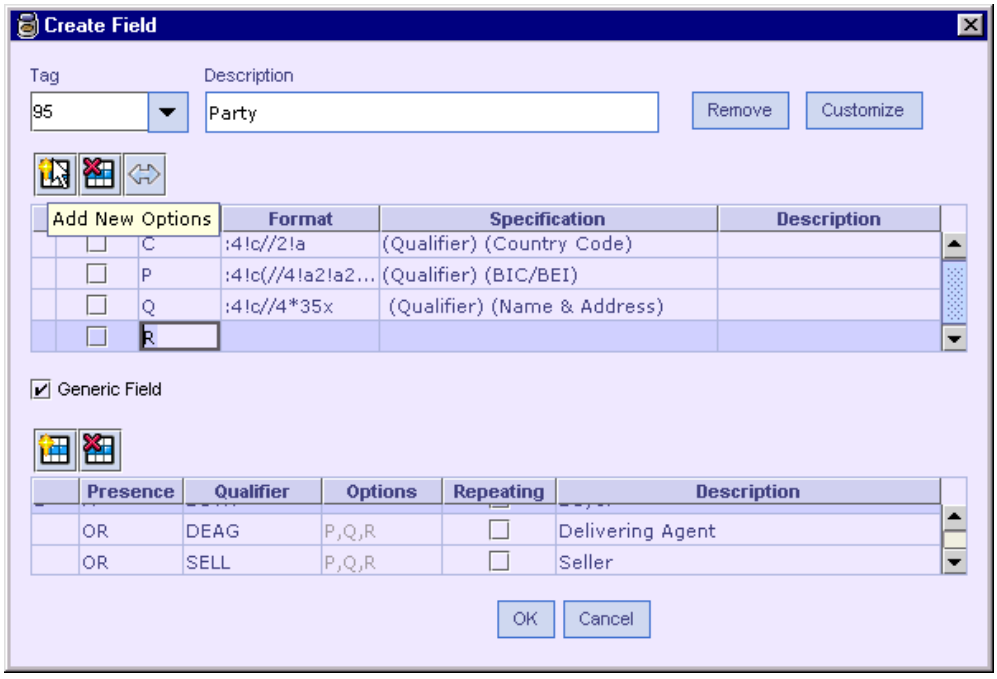
enabled, so as to allow the mapping of the qualifier with the Option. See Adding Qualifiers and Associating them with Options.



See Also:

Adding a New Generic Field

Entering an Option Format

1. The following table shows how to specify the length of a field and the characters allowed while specifying the format for a field. A few examples are also given at the end of the table.

Restrictions on Length		Types of Characters Allowed	
nn	Maximum length	n	Digits only
nn-nn	Minimum and maximum length	a	Alphabetic letters, upper case only
		c	Alphabetic letters (upper case) and digits

		h	only Hexadecimal letters A through F (upper case) and digits only
Nn!	Fixed length	x	Any character of the permitted character set upper and lower case
		y	Any character of the EDIFACT level A character set as defined in ISO 9735 upper case only
		z	Any character as defined by the Information Service
nn*nn	Maximum number of lines times maximum line length	e	Blank space
		d	Decimal format

Examples	
2n	= up to 2 digits
3!a	= always 3 letters upper case only
4*35x	= up to 4 lines of up to 35 characters each
16-64h	= at least 16 and up to 64 hexadecimal digits

2. Use of square brackets [ ] around the format of a particular subfield indicates that the subfield is optional within that field. For example, in the following figure, format of option S is specified as :4!c/[8c]/4!c/2!a/30x. Here, the format corresponding to the sub-field Data Source Scheme is given as [8c], making the sub-field optional.

3. The formats within the brackets **( )** should be treated as a single unit. In the following figure, note option P. The format is :4!c(//4!a2!a2!c[3!c]). The **( )** brackets separates :4!c from the rest, thus implying only two sub-fields with formats 4!c and //4!a2!a2!c[3!c]. If the brackets were missed, the format //4!a2!a2!c[3!c] would not apply for a single sub-field BIC/BEI as in the figure. Instead it would imply four sub-fields with formats 4!a, 2!a, 2!c and 3!c.

Selected	Option	Format	Specification	Description
☐	C	:4!c//2!a	(Qualifier) (Country Code)	
☑	P	:4!c(//4!a2!a2!c[3!c])	(Qualifier) (BIC/BEI)	
☑	Q	:4!c//4*35x	(Qualifier) (Name & Address)	
☑	R	:4!c/8c/34x	(Qualifier) (Data Source Scheme...	
☐	S	:4!c/[8c]/4!c/2!a/30x	(Qualifier) (Data Source Scheme...	

4. Refer Mapping Formats with Specification (Sub-fields) to know how to perform the same using the designer.

5. A generic field always starts with a colon (**:**), followed by a Qualifier of format 4!c followed by zero or more sub-fields. There is no such rule for a non-generic field.

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See Also:

Adding a New Generic Field

Entering an Option Specification

The specification of a field should describe the field's format, and is given as a list of its constituent subfields. Each sub-field is separated from the next by using the **( )** brackets. For example, the format of field 95C is :4!c//2!a. As per this format, there are 2 subfields, one with format 4!c and the next with 2!a. The specification should be entered to represent these two subfields namely, Qualifier and Country Code as (Qualifier)(Country Code).

Selected	Option	Format	Specification	Description
☐	C	:4!c//2!a	(Qualifier) (Country Code)	
☑	P	:4!c(//4!a2!a2...	(Qualifier) (BIC/BEI)	
☑	Q	:4!c//4*35x	(Qualifier) (Name & Address)	
☑	R	:4!c/8c/34x	(Qualifier) (Data Source Scheme...	
☐	S	:4!c/[8c]/4!c/...	(Qualifier) (Data Source Scheme...	

Consider the following case.

Format Pattern **[A] SEPERATOR [B] SEPERATOR [C]** where A, B, C represent formats of sub-fields.

Specification **(Sub-Field1) (Sub-Field2) (Sub-Field2)**

In this format pattern, the specification for subfields B and C are the same. ie, **Sub-Field2**. If this pattern is entered, only one instance of **Sub-Field2** will be created, though the format indicates 3 subfields, which is not correct. In order to

avoid this, the specification of the subfields should be made distinct. (Here, the specification for subfields **B** and **C**). This is shown in the following example.

Example

Field	69a OPTION A
Format	:4!c//8!n/8!n
Specification	(Qualifier)(Date)(Date)
Format in Designer	:4!c//8!n/8!n
Specification in Designer	(Qualifier)(Start Date)(End Date)

Field 69a present in message format MT564 refers to Period. Its two subfield specifications Date are changed to imply their meaning as Start Date and End Date.

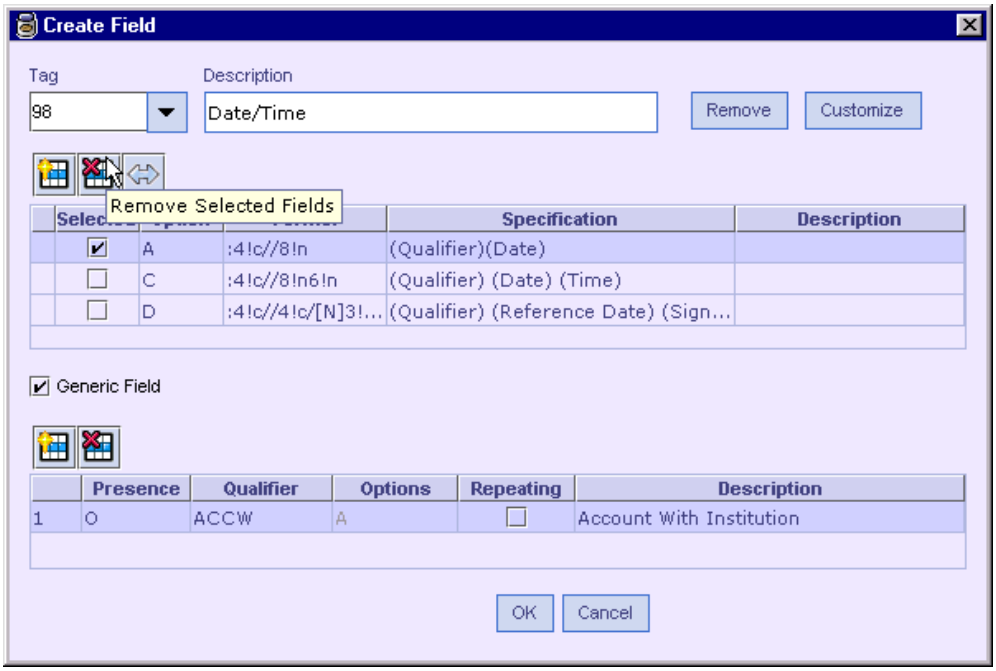
See Also:

Adding a New Generic Field

Removing Field Options

1. Select the Option to be removed in the options table of the **Create Field** or **Modify Field** dialog.

2. Click the **Remove Selected Fields** button.



The option is removed from the options table. If there is any qualifier associated with the removed option, in the case of a generic field, map it to the correct option or remove it.

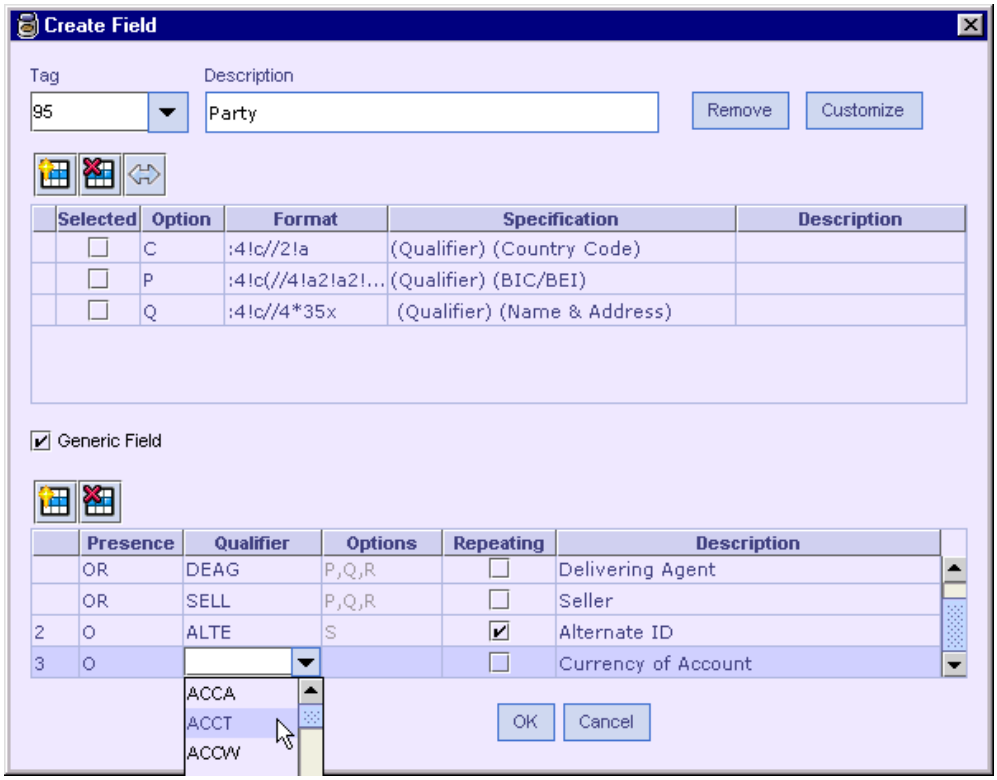
See Also:

Adding a New Generic Field

Adding Qualifiers and Associating them with Options

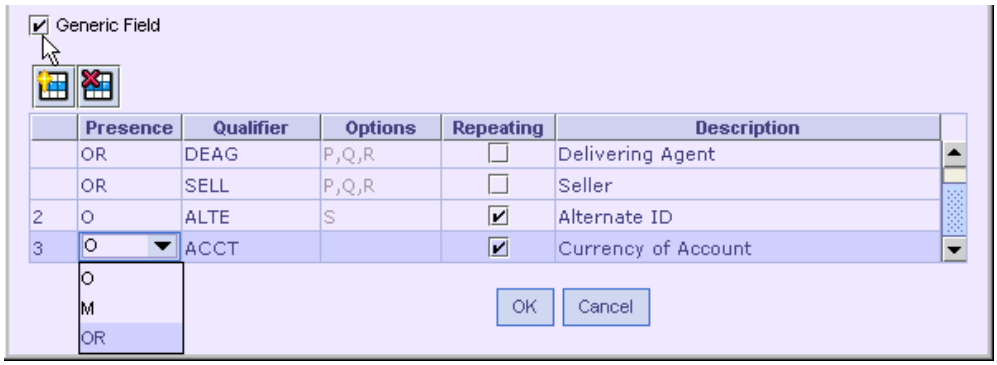
1. Click the **Add New Qualifier** button in the **Create Field** dialog.

2. A new row is added to the qualifiers table.

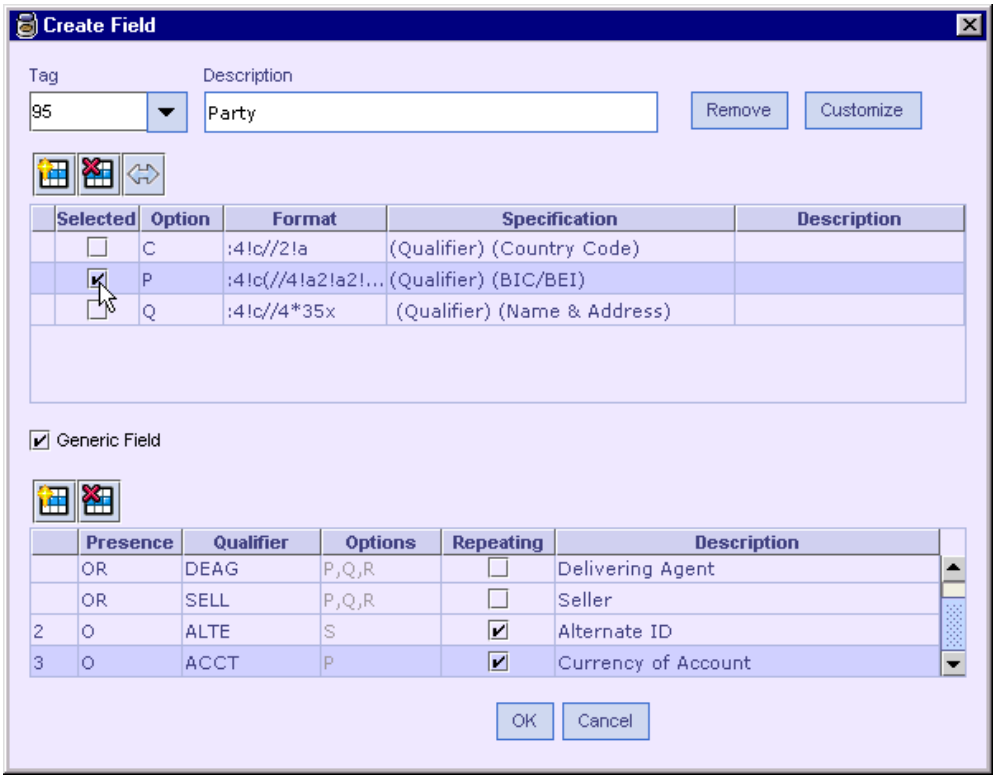


3. Select the required **Qualifier** from the drop-down list as shown above. The **Description** is automatically populated on selecting the **Qualifier**.

4. Select the **Presence** of the Qualifier among **O** (Optional), **M** (Mandatory), **OR** (OR). See Specifying OR option for a Qualifier to specify OR presence. Also select **Repeating** checkbox if the qualifier is repeating as per the specification.



5. Map the options to the qualifier. To map, select the qualifier row. Select the options that apply to this qualifier by selecting the checkbox in the **Selected** column of the required options, as shown below.



6. On selecting the options, they appear in the **Options** column in the qualifier table.

See Also:

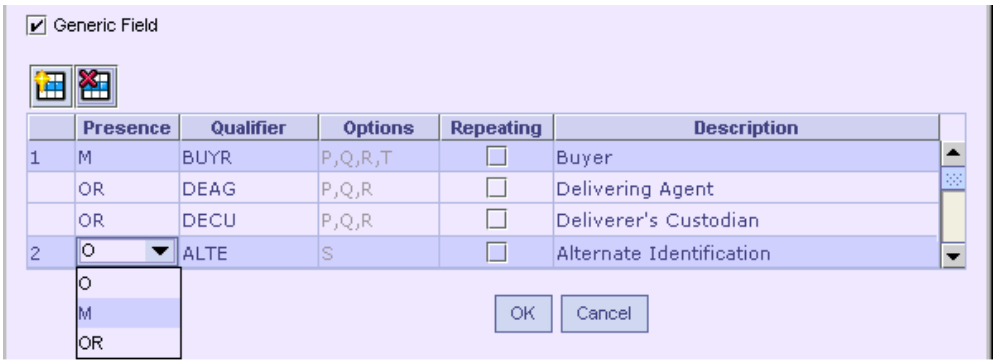
Adding a New Generic Field

Specifying OR Option for a Qualifier

The OR option, allows grouping of qualifiers. This is useful when one of the many possible qualifiers can appear for a field option as per the specification. For example, field 95a allows one among a group of qualifiers BUYR, DEAG, DECU, etc.

Follow the steps given below to specify the OR option,

1. Add a qualifier to the table as mentioned in the above section. Select one of the allowed qualifiers (in the OR group) from the drop-down list. Say, BUYR in our example. Specify its presence either as (M) Mandatory or (O) Optional as per the specification.
2. Add the next qualifier in the group, here DEAG, and specify its presence as OR from the drop-down list.



3. Repeat the above step until all the qualifiers in the group have been added.

4. As per the above figure, one among the qualifiers BUYR, DEAG, DECU is mandatory, as specified for the first qualifier of the group.

5. Note that the qualifiers in the OR group are under the serial number 1 in the figure. The OR qualifiers are not assigned serial number for each row. Only the qualifier added outside the group, i.e., with an O or M presence is assigned the next serial number.

See Also:

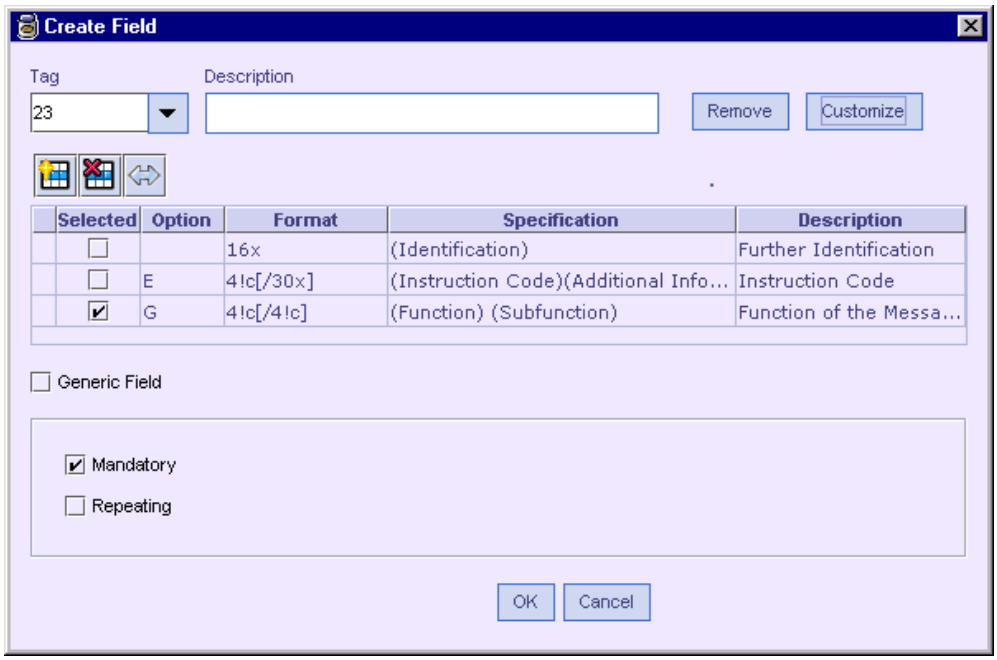
Adding a Non-Generic Field
Adding Copy of Fields
Adding a SWIFT Sequence
Adding validations for a sub-field

Adding a Non-Generic Field

A Non-Generic field, unlike a generic field, is a discrete data item used for one purpose only. To add a non-generic field to a message format, follow the steps given below.

1. Click the **Add New SWIFT Field** button in the toolbar of the **External Format - SWIFT** UI. The **Create Field** dialog appears.

2. Enter the field tag in the **Tag** text field and press **Enter**. The toolbar buttons for the options table are now enabled.



3. Enter the description of the field in the **Description** text field.

4. Add the Options for the field.

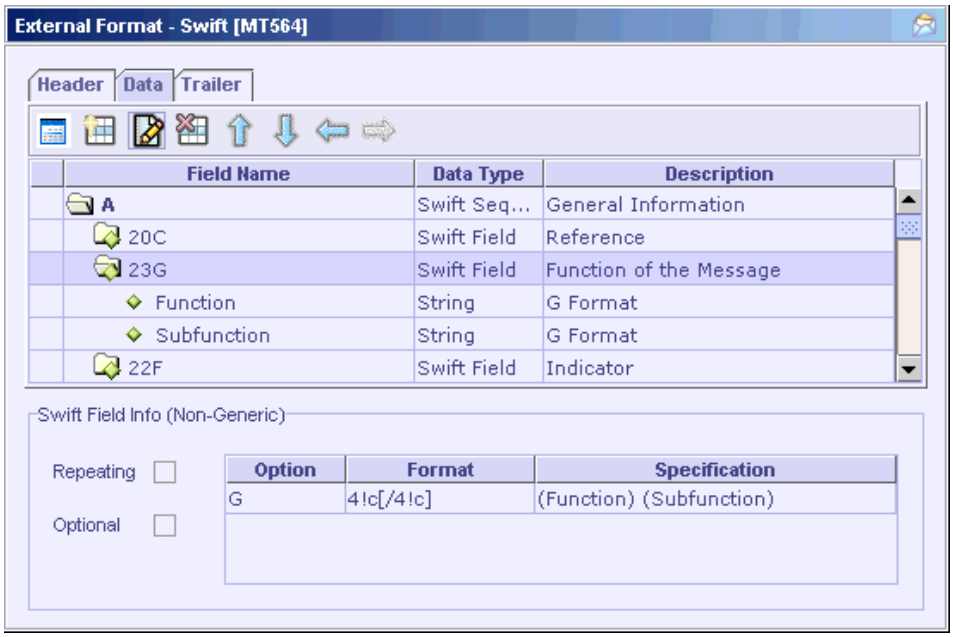
5. Uncheck the **Generic Field** check box.

6. The lower panel having the field properties appears now. Select the **Mandatory** check box if the field is mandatory and select the **Repeating** check box if the field is repeating.

7. Select the required options by selecting the check box in the **Selected** column of the options table. Note that this column is enabled only on step 5.

8. For a field existing already, the description and Options are automatically populated when the field is selected from the **Tag** list. Note that the required options have to be selected and the properties (**Mandatory** and **Repeating**) have to be set, each time a field is added to a message format.

9. Click OK. The field is added to the format as found in the **External Format - SWIFT** UI. The field shows a unique collection of subfields of the options selected.



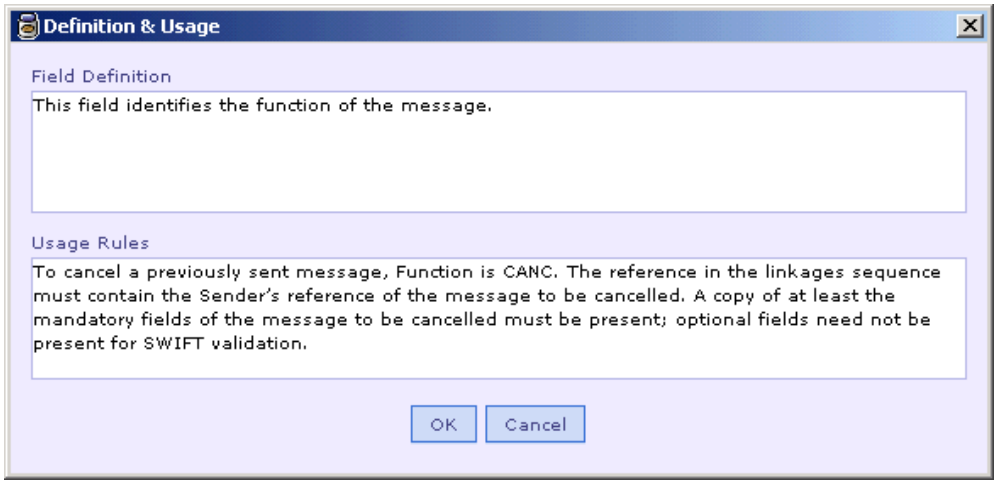
See Also:

Specifying Field Definition and Usage
Mapping Formats with Specification (Sub-fields)
Representing Complex Formats in Designer
Adding a new Generic Field
Adding Copy of Fields
Adding a SWIFT Sequence

Specifying Field Definition and Usage

A field's definition and usage can be specified by clicking the

button in the Create Field or Modify Field dialog. For example field definition and usage of field '23G' in MT519 can be specified as shown below.



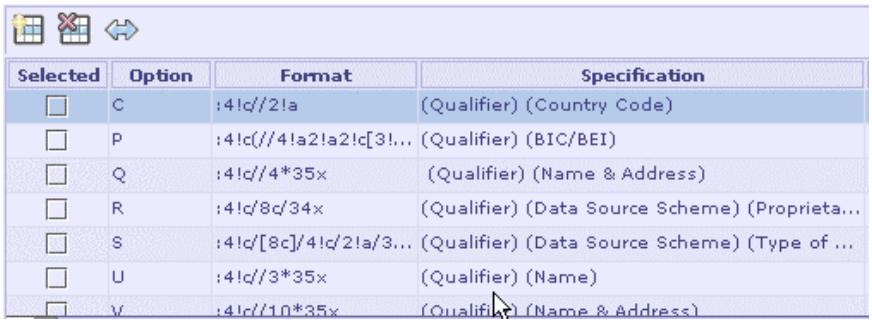
See Also:

Adding a new Generic Field
Adding a Non-Generic Field

Mapping Formats with Specification (Sub-fields)

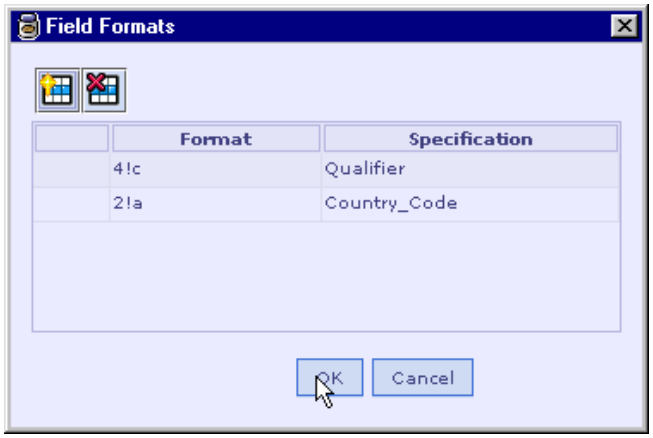
There should be a one-to-one correspondence between the format and the specification mentioned for a field. Only then, Designer will be able to interpret the sub-fields and their individual formats. The following steps ensure that Designer maps the format and specification of sub-fields correctly. If necessary, formats can be merged or split-up as explained below.

1. Select the required row in the options table in the **Create Field** or **Modify Field** dialog and click the **Map format with Specification** button to bring out the **Fields Format** dialog.



Selected	Option	Format	Specification
☐	C	:4!c//2!a	(Qualifier) (Country Code)
☐	P	:4!c(//4!a2!a2!c[3!...	(Qualifier) (BIC/BEI)
☐	Q	:4!c//4*35x	(Qualifier) (Name & Address)
☐	R	:4!c/8c/34x	(Qualifier) (Data Source Scheme) (Proprieta...
☐	S	:4!c/[8c]/4!c/2!a/3...	(Qualifier) (Data Source Scheme) (Type of ...
☐	U	:4!c//3*35x	(Qualifier) (Name)
☐	V	:4!c//10*35x	(Qualifier) (Name & Address)

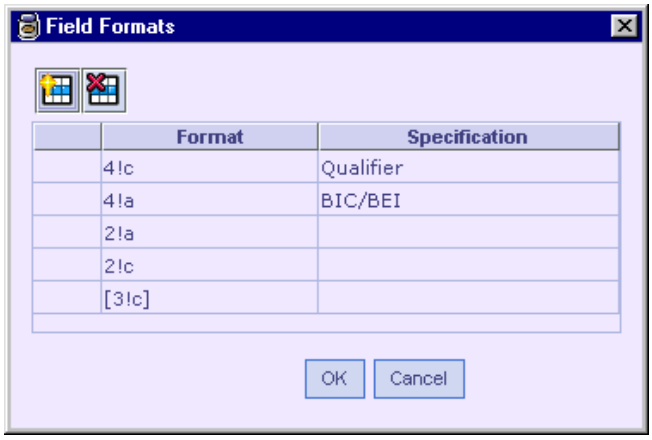
2. The selected row has a simple format and specification. Hence there is no ambiguity for Designer in mapping the format with the specification. Designer shows the correct mapping in this case



3. But in complex cases, where there is ambiguity in resolving the format and specification of sub-fields, Designer is clueless and the mapping needs to be done by the user. Consider the following case.

☐	P	:4!c//4!a2!a2!c[3!c]	(Qualifier)(BIC/BEI)

4. The **Field Formats** dialog for this case shows



5. Note that there is no one-to-one correspondence between the **Format** and the **Specification**. In the above figure, all the formats that have no specification actually belong to BIC/BEI sub-field. Hence in order to correct the mapping, those formats have to be merged for the specification BIC/BEI.

6. Select the rows to be merged and click the **Merge Selected Formats** button.

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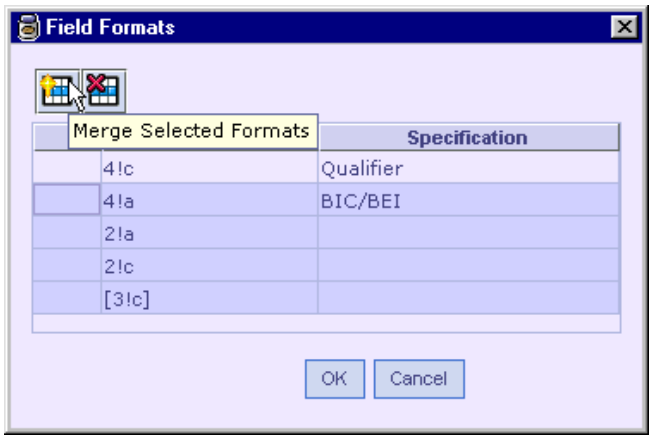

7. The mapping is now correct. Click OK.

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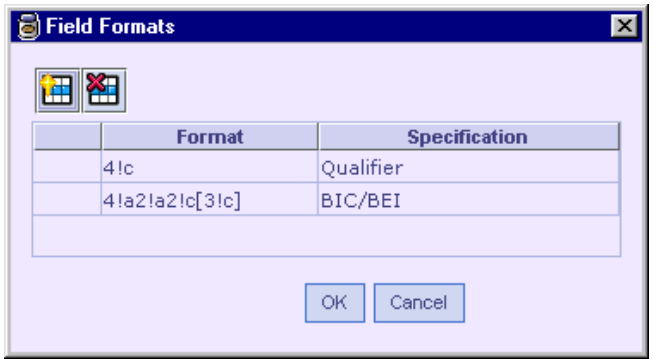

8. The format of option P in options table now looks like

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Selected	Option	Format	Specification
☐	C	:4!c//2!a	(Qualifier) (Country Code)
☐	P	:4!c(//4!a2!a2!c[3!c])	(Qualifier) (BIC/BEI)
☐	Q	:4!c//4*35x	(Qualifier) (Name & Address)
☐	R	:4!c/8c/34x	(Qualifier) (Data Source Scheme) (...

9. Note the **( )** brackets added in the format after merging. These brackets can also be entered in the format directly, without going through the **Fields Format** dialog.

10. The reverse is also possible in the **Fields Format** dialog. i.e., formats can be split up.

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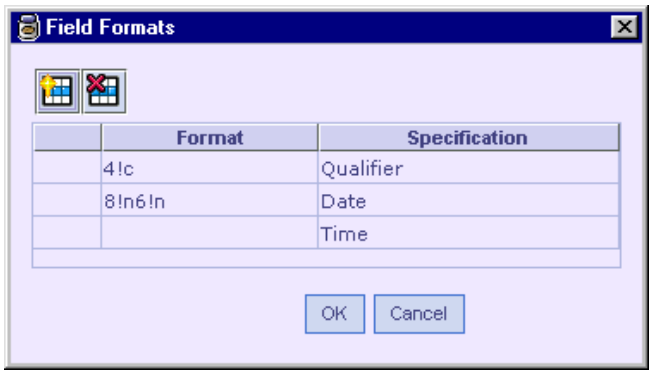

11. Note that the format is missing for Time.

12. Select the row to be split-up and click the **Split Selected Format** button.

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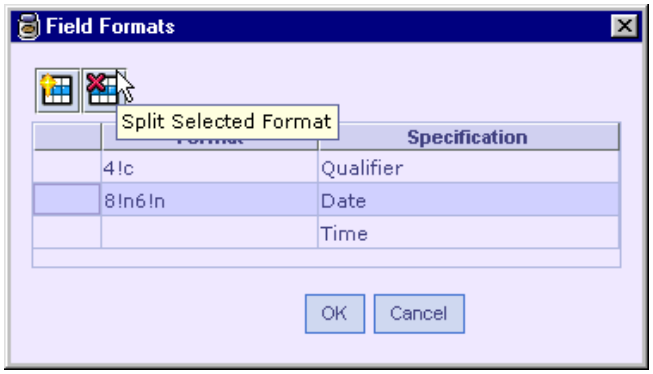
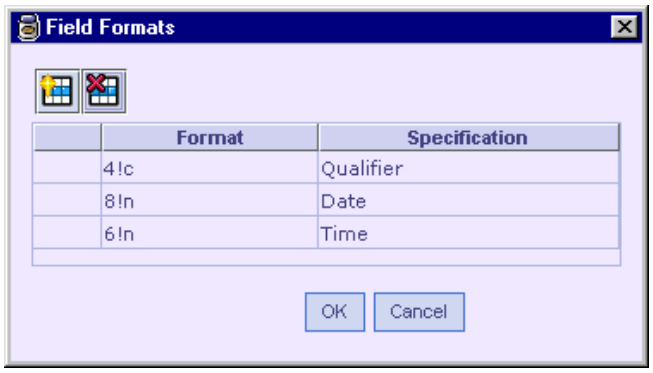


13. The format now looks correct as below. Click OK.



Use of brackets ( ) around a set of (two or more) formats indicates that they should be treated as a single unit. Consider the format:4!c(//4!a2!a2!c[3!c]). The ( ) brackets separates :4!c from the rest, thus implying only two sub-fields with formats 4!c and //4!a2!a2!c[3!c]. If the brackets were missed, the format //4!a2!a2!c[3!c] would not apply for a single sub-field BIC/BEI as in the figure. Instead it would imply four sub-fields with formats 4!a, 2!a, 2!c and 3!c.

See Also:

Adding a new Generic Field
Adding a Non-Generic Field
Representing Complex Formats in Designer

Representing Complex Formats in Designer

Some field formats mentioned in the SWIFT specification need to be changed to represent them in Designer. Those formats are explained below. Note that while changing the format, the corresponding specification should also be changed to reflect the format as shown in the following cases.

Conventions

A, B refer to independent sub-fields.
(e.g.) in the format ([ISIN1!e12!c])CRLF[4*35x]
A is [ISIN1!e12!c] and **B** is [4*35x]

A1, A2 refer to parts of a sub-field.
(e.g.) if **A** is [/1!a][/34x] then
A1 is [/1!a] and **A2** is [/34x]

SEP means SEPERATOR.

Format Pattern	**[A] SEP [B]**
Representation in Designer	A [SEP B] | B

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This format implies that,

1. Either **A** and **B** are present or only **A** is present.
2. Only **B** is present.

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Here the separator does not belong to (cannot be associated with) either of the two formats (**A** and **B**). The separator appears only if both are present. In the grammar **[A] SEP [B]** there is no way to represent such a requirement without ambiguity. Consider the formats [A SEP][B] and [A][SEP B] – they do not represent the fact that separator should appear only if both **A** and **B** are present.

Since the grammar cannot convey the meaning correctly, the SWIFT specification provides additional information as part of the description or clarifies it elsewhere in the document. Hence such information should be correctly correlated with the format in Designer, so that the application interprets the format, the way it should.

Note

The parser tries out the first format and if it fails, tries the second (and so on). Because of this, the order of the formats (that are ORed) is important and should always be maintained. In general, the one with more number of fields should appear first.

Example

Field	35B
Format	([ISIN1!e12!c])CRLF[4*35x]
Specification	(Identification Of Security)(Description Of Security)
Format in Designer	(ISIN1!e12!c)([CRLF4*35x]) | 4*35x
Specification in Designer	(Identification Of Security)(Description Of Security) | (Description Of Security)

Note that the field specification is also changed to match the format.

Present in Message Formats: MT541, MT543, MT524, MT521, MT531, MT520, MT522, MT523, and MT530

Format Pattern **[A1] [A2] SEP [B]**

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Representation in Designer **[A1 [A2] SEP] B | [A2 SEP] B**

This format implies that

1. Either **A1, A2** and **B** are present, or **A1** and **B** are present, or only **B** is present.
2. **A2** and **B** are present, or only **B** is present.

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In this format pattern the separator does not belong to either of the two formats (**A** and **B**). Also format **A** is further divided into parts **A1** and **A2**. The separator appears only if **A1** or **A2** are present or both **A1** and **A2** are present. If only format **B** is present the separator does not appear. The order of the formats is important and should always be maintained.

Example

Field	82a – OPTION A
Format	[/1!a][/34x]CRLF4!a2!a2!c[3!c]
Specification	(Party Identifier)(BIC)
Format in Designer	[/1!a[/34x]CRLF])(4!a2!a2!c[3!c]) | ([/34xCRLF])(4!a2!a2!c[3!c])
Specification in Designer	(Party Identifier)(BIC) | (Party Identifier)(BIC)

Present in Message Formats: MT521, MT531, MT520, MT522, MT523, MT530

Other Fields Having Similar Pattern:
82a - Options A, D
83a - Options A, D
88a - Options A, D
87a - Options A, D
85a - Options A, D
53a - Options A, D
54a - Options A, D
57a - Options A, D
58a - Options A, D
52a - Options A, D
56a - Options A, D
51a - Options A, D
42a - Options A, D
88D

Format Pattern [A1] [A2] [SEP B]

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Representation in Designer [A1[A2]SEP]B | A1[A2] | [A2 SEP] B | A2

This format implies that

A1, A2 and **B** are present, or **A1** and **B** are present, or only **B** is present.
A1 and **A2** are present, or only **A1** is present.
A2 and **B** are present, or only **B** is present.
Only **A2** is present.

In this format pattern the separator does not belong to either of the two formats (**A** and **B**). In this case, format **A** is further divided into two parts **A1** and **A2**. The separator appears only if either one or both of **A1** and **A2** is/are present and format **B** is also present. Presence of format **B** is essential for the separator to appear. The order of the formats is important and should always be maintained.

Example

Field	82a – OPTION B
Format	([/1!a][/34x])[CRLF35x]
Specification	(Party Identifier)(Location)
Format in Designer	([/1!a[/34x]CRLF])35x | (/1!a[/34x])| ([/34xCRLF])35x | /34x
Specification in Designer	(Party Identifier) (Location) | (Party Identifier) | (Party Identifier) (Location) | (Party Identifier)

Present in Message Formats: MT521, MT531, MT520, MT522, MT523, MT530

Other Fields Having Similar Pattern:
82a - Option B
88a - Option B
87a - Option B
53a - Option B
54a - Option B
57a - Option B
52a - Option B

Format Pattern A SEP B

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where A is of the format nooflines*maxlinelength (Maximum number of lines times maximum line length).

Representation in Designer (maxlinelength) SEP B |
(2*maxlinelength) SEP B |... |
(maxnooflines*maxlinelength) SEP B

This format implies that

A minimum of one line is present in format **A** along with format **B**.

Number of lines that range between 1 and maximum number possible is present in format **A** along with format **B**.
Maximum number of lines that is possible is present in format **A** along with format **B**.

In this format pattern, format **A** can have multiple lines in its data, which are separated by CRLF. Format **A** and Format B are also separated by CRLF. In order to differentiate between the data for format **A** and data for format **B** we have followed the above conversion pattern. In this case, format **A** is represented as a combination of the number of possible lines and the maximum length per line. The order of the formats is important and should always be maintained.

Example

Field	41a – OPTION D
Format	(4*35x)CRLF14x
Specification	(Name & Address)(Code)
Format in Designer	(35x)CRLF14x|(2*35x)CRLF14x|(3*35x)CRLF14x| (4*35x)CRLF14x
Specification in Designer	(Name & Address)(Code) |(Name & Address)(Code) | (Name & Address)(Code) |(Name & Address)(Code)

Present in Message Format: MT710

See Also:

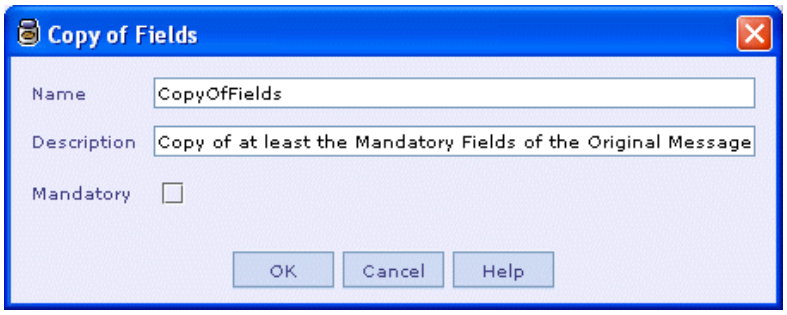
Adding a new Generic Field
Adding a Non-Generic Field
Mapping Formats with Specification (Sub-fields)

Adding Copy of Fields

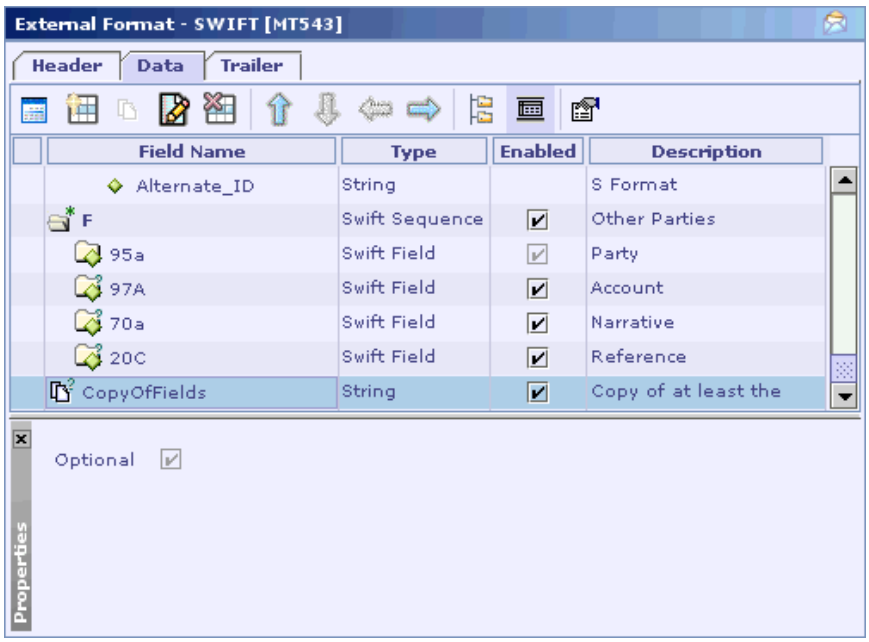
In some SWIFT messages a set of fields need to be treated as single entity. For e.g. in common group messages (MTnxx), a copy of the fields that occurred in the original message may occur at the end. The entire set should be treated as a single field. To support this we need to add a separate field 'Copy of Fields'.

1. To add 'Copy of Fields' select the button in the toolbar.

2. The dialog shown below will be displayed.



3. Specify the properties for 'Copy of Fields' in the dialog. Select 'OK' to add it.



From the above diagram it can be seen that the ‘Copy of Fields’ gets added as the last field in the message with the occurrence property.

Note:

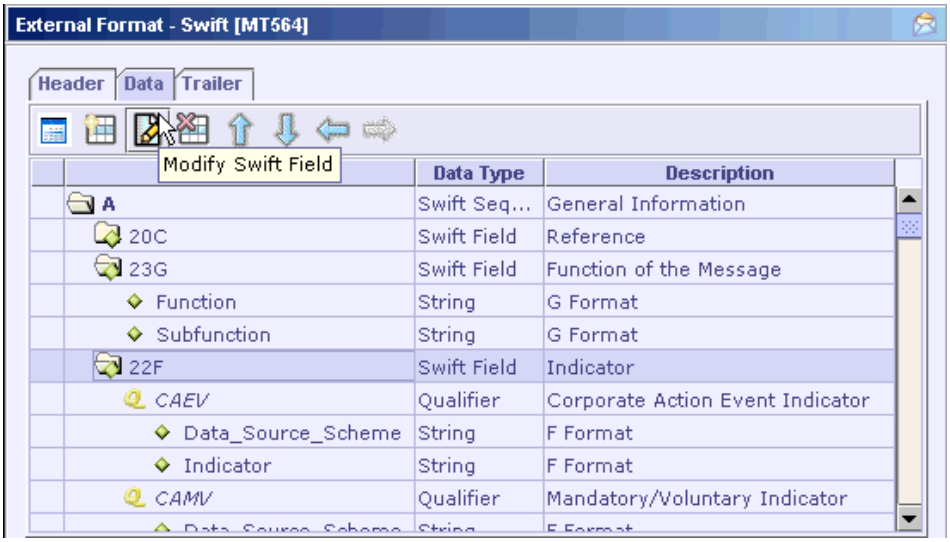
The ‘Copy of Fields’ of fields should be the last field in the message.
It should be a top-level field. It should not be nested within a sequence.

See Also:

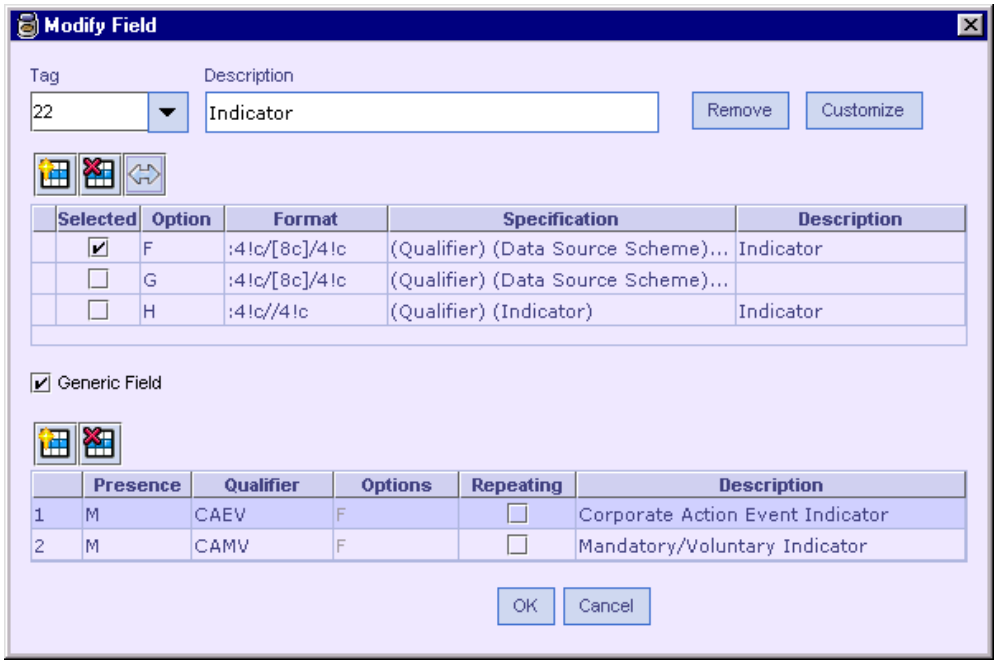
Adding a SWIFT Sequence
Adding a SWIFT Field
Updating a SWIFT Field
Removing a SWIFT Field

Updating a SWIFT Field

1. Select the field to be modified in the **External Format - SWIFT** UI and click the **Modify SWIFT Field** button in the toolbar.



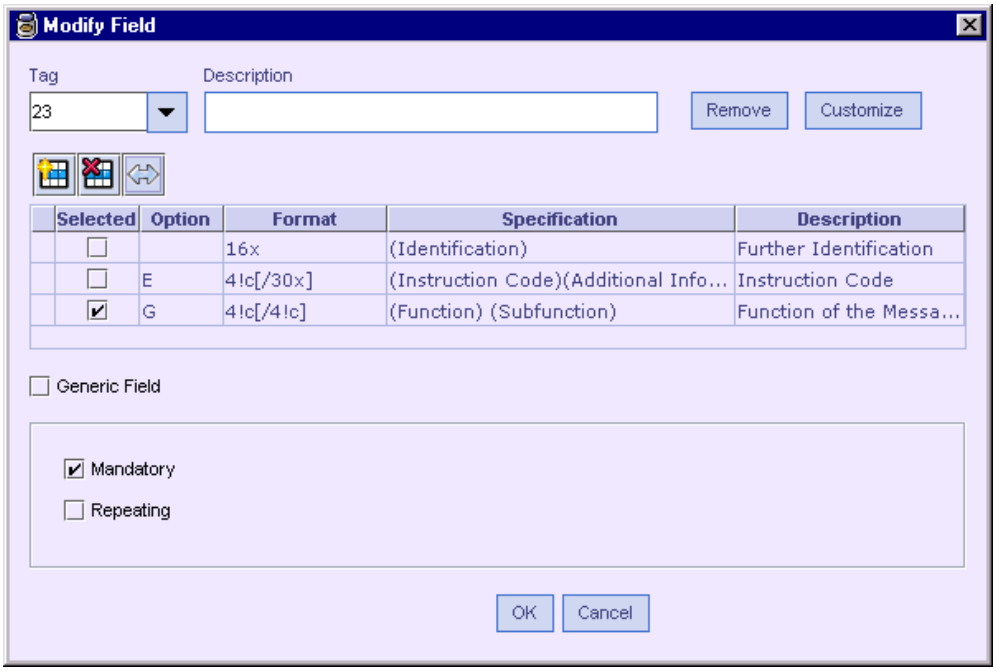
2. The **Modify Field** dialog appears with the selected field in the **Tag** drop-down box.



3. The options available for the field are populated in the options table, with the apt options selected. Add any missing option if needed, refer Adding Field Options. Select the required options.

4. For a generic field, the **Generic Field** check box appears checked and the qualifiers are populated in the qualifiers table with the properties set. Add qualifiers further if needed. Refer Adding Qualifiers and Associating them to the Options.

5. For a non-generic field, the dialog looks as below. The **Generic Field** check box appears unchecked and the properties **Mandatory** and **Repeating** are checked or unchecked as set previously. Modify the properties if necessary.



6. Click the **Remove** button to remove the selected field from the **Tag** list, subsequently from the **External Format - SWIFT** UI.

7. To change the suffix, refer the section Customize Field.

See Also:

Adding a SWIFT Field
Adding a SWIFT Sequence
Removing a SWIFT Field

Customize Field

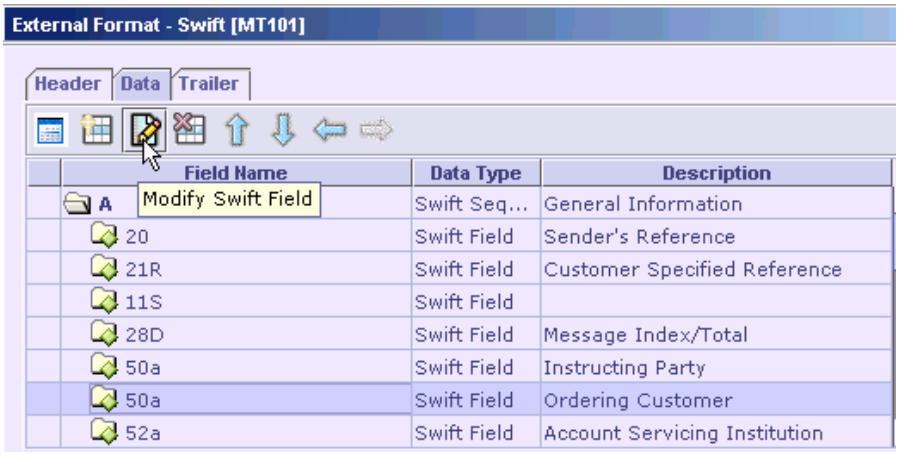
Consider the message format **MT101**.

Status	Tag	Field Name	Content/Options	*No.*
Mandatory Sequence A General Information				
M	20	Sender's Reference	16x	*1*
O	21R	Customer Specified Reference	16x	*2*
M	28D	Message Index/Total	5n/5n	*3*
O	50a	Instructing Party	C or L	*4*
O	50a	Ordering Customer	G or H	*5*
O	52a	Account Servicing Institution	A or C	*6*

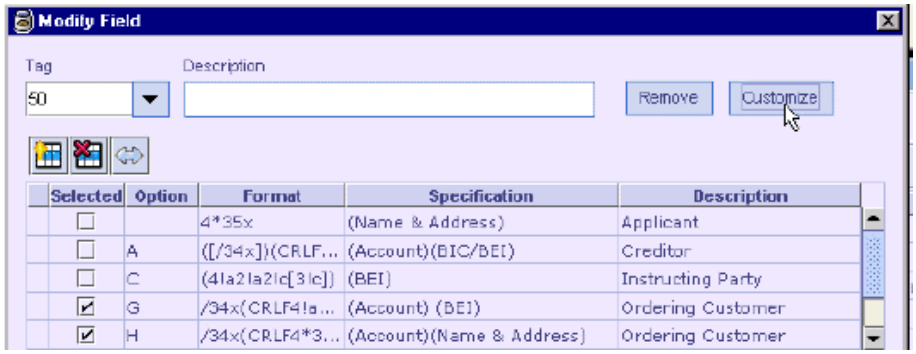
…….
…….
…….

Note that the field 50a appears twice consequently. When such a data format is entered in the designer and validated, the designer shows an error that the field is duplicated. Hence in order to avoid this, the suffix **a** needs to be changed. Anyhow, this will not affect the format of the field. To change the suffix:

1. Click the **Add New SWIFT Field** button in the **External Format - SWIFT** UI to bring the **Create Field** dialog. Or select the row to change the suffix (if the field is already added) and click the **Modify SWIFT Field** button to bring the **Modify Field** dialog.

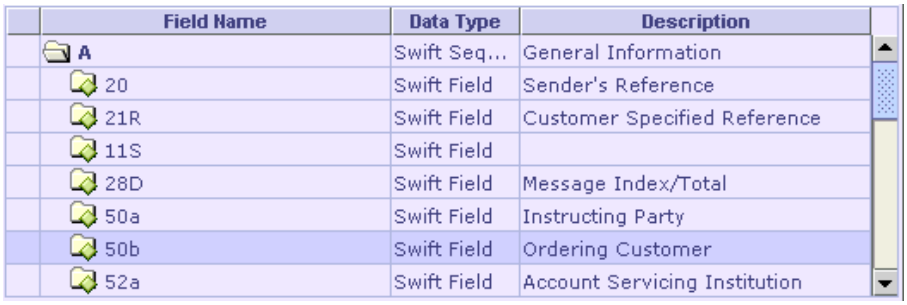


2. In the **Create Field / Modify Field** dialog that appears, click the **Customize** button.



3. In the **Customize Field** dialog that appears enter the suffix and click OK.

4. Click OK in the **Create Field / Modify Field** dialog. Now the **External Format - SWIFT** UI shows the field with the suffix entered.



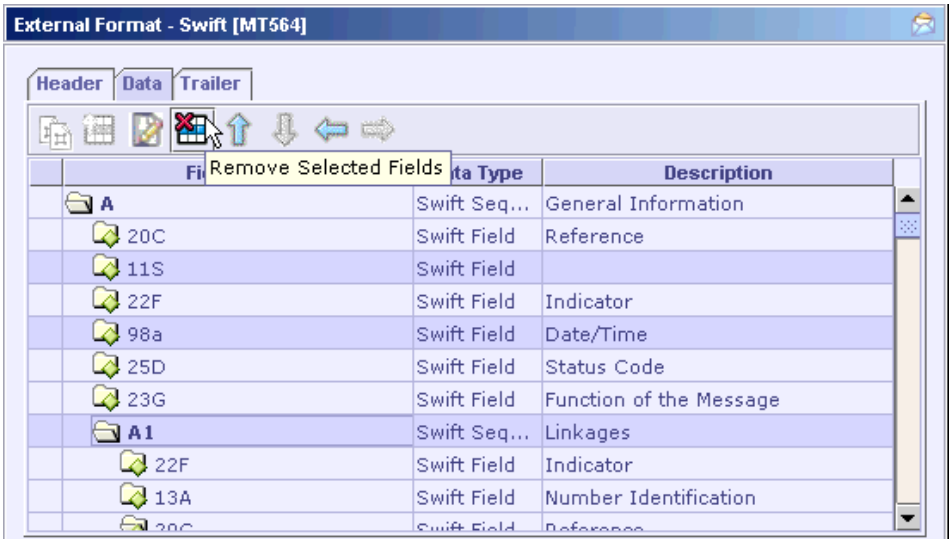
Field Name	Data Type	Description
A	Swift Seq...	General Information
20	Swift Field	Sender's Reference
21R	Swift Field	Customer Specified Reference
11S	Swift Field	
28D	Swift Field	Message Index/Total
50a	Swift Field	Instructing Party
50b	Swift Field	Ordering Customer
52a	Swift Field	Account Servicing Institution

See Also:

Adding a new Generic Field
Adding a Non-Generic Field
Removing a SWIFT Field

Removing a SWIFT Field

1. Select the fields to be removed in the **External Format - SWIFT** UI and click the **Remove Selected Fields** button in the toolbar. The fields are removed from the format.



2. Sequences can also be removed by clicking this button. But sub-fields cannot be removed.

3. A field can also be removed by clicking the **Remove** button in the **Create Field** or **Modify Field** dialog.

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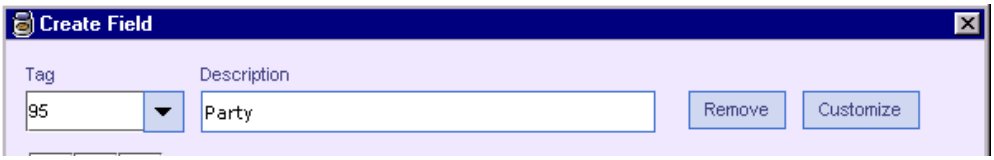


This removes the field from the **Tag** list.

See Also:

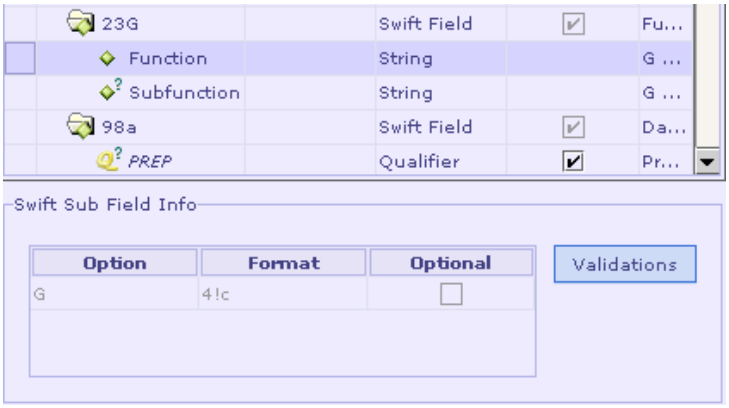
Adding a SWIFT Field
Updating a SWIFT Field
Adding a SWIFT Sequence

Adding validations for a sub-field

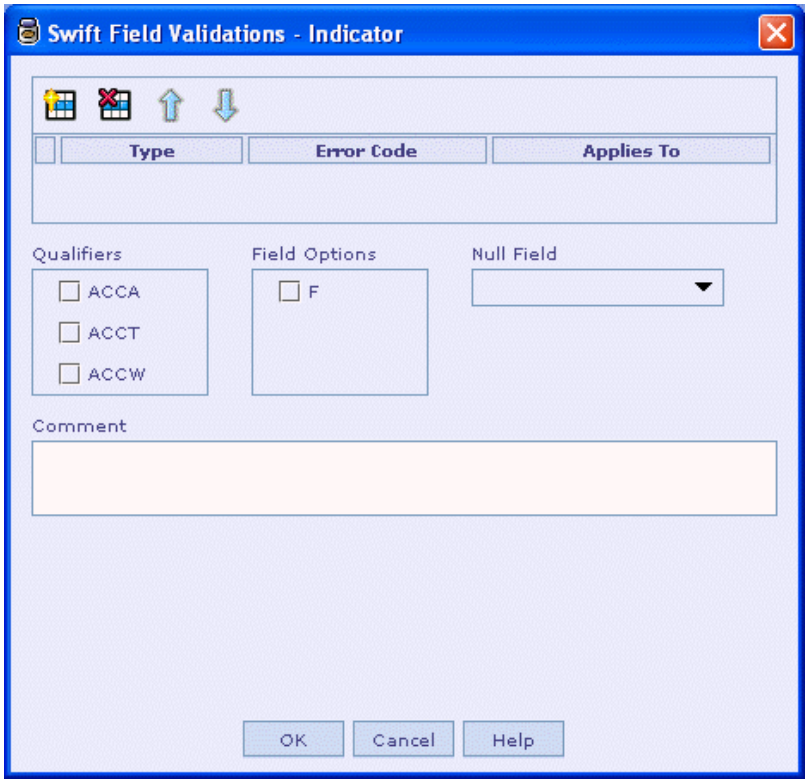
While adding a swift field you can also add validations for the sub-fields of the swift field. The validation types that are currently supported are

CODE
Time Offset
BIC
C05
DATE
T14
Decimal
T26
Currency Code
Country Code and
Party Identification

1. Select a swift sub field in Swift External Format UI. In the 'Swift Sub Field Info' properties panel click the 'Validations' button.



2. The **Swift Field Validations** dialog will be displayed.



3. In the top tool bar select the button to add a new validation.

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4. The default type will be 'CODE'. Click the 'Type' column. The list of validation types will be displayed. Select the appropriate validation type.

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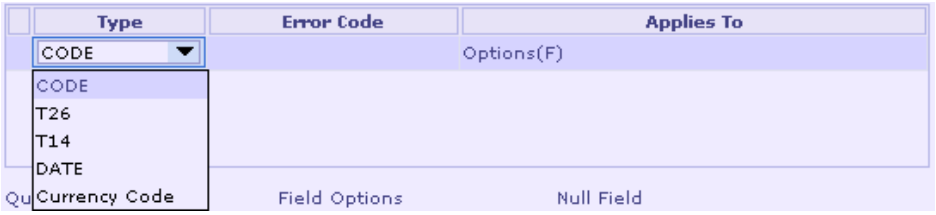


Note:

For the 'Format Option' sub field the validation button will not be enabled.

If a sub-field has validations the text of the validations button will be 'Red' in color.

If a sub-field does not have validation the text will be in normal color.

You can click the ' ', ' ' to move validation(s) up/down.

See Also:

Specifying properties common for all validations
Removing validations from a sub field
Adding a SWIFT Field

Specifying properties common for all validations

The properties that can be specified for a validation are

Type
Error Code
Field Options
Qualifiers (Applicable only for generic fields)
Null Field
Comment
Codes (Applicable only if 'Type' is 'CODE')
Date Format (Applicable only if 'Type' is 'DATE')
Sign Field (Applicable only if 'Type' is T14)
Currency Field (Applicable only if 'Type' is Decimal)
Formula (Applicable only if 'Type' is Formula)
Party Identification Codes (Applicable only if 'Type' is Party Identification)

Specifying Error Code

Specify the error code in the 'Error Code' column.

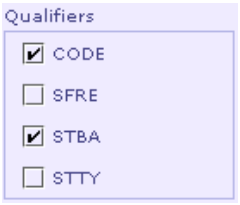
Type	Error Code	Applies To
CODE	K22	Options(F)

Specifying Field Options

In the field options list only those options that are applicable to the selected sub field will be displayed. By default all the displayed options will be selected when you add a validation. You can deselect among the option(s) that are not applicable for the validation.
Please note that at least one field option must be selected for a validation.

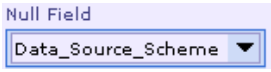
Specifying Qualifiers

This property is applicable only in case of generic fields. Only those qualifiers that contain the applicable field options will be displayed. Select the necessary qualifiers. Please note that at least one qualifier must be selected for a validation.



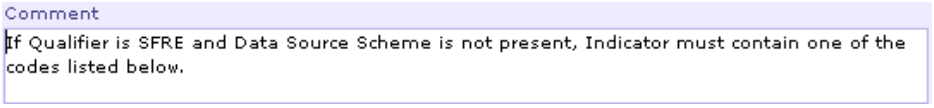
Specifying Null Field

This property specifies the field that should be 'null' for the validation to be applied. In the 'Null Field' combo box sub-fields of the swift field will be displayed. Note that the current field (i.e.) sub field for which validation is being applied will not be displayed. Similarly the 'Format Option' field will also not be displayed. You can select the appropriate field from the list.
This is an optional property.



Specifying Comment

Comment for the validation can be specified in the comment text area. This is an optional property.



See Also:

Adding validations for a sub-field
Adding Code validation

Adding Code validation

Code validation is applicable in cases where a field's value should be one of a set of predefined values. The predefined values can be specified as codes.

1. Add a new validation.

2. Select 'Type' as 'CODE' in the 'Type' column.

3. Specify 'Error Code', 'Field Options', 'Qualifiers', 'Null Field' and 'Comment' properties as specified earlier.

Specifying Codes

The list of codes for the sub field is to be added to the 'Codes' Table. Note that at least one code should be added for a code validation.

Press the button to add a new code. Enter the actual code under 'Code' column. Enter the detailed name and description under 'Detail Name' and 'Description' columns.

For example in MT519 sub-field 'Function' of field 23G must contain the following codes

CANC and
NEWM

They can be added as shown below

Code	Detail Name	Description
CANC	Cancellation	This is a request to cancel a previously se...
NEWM	New	This is a new modification of registration ...

Pasting Codes From Clipboard

You can also use the button to paste a set of codes from clipboard. Copy a set of codes along with their detail names and description from the swift standard

documentation to an application like Excel. Copy the text from there to clipboard. Now click the button. The codes will be pasted.

Note:

The code, detailed name and description should be separated either by spaces or tabs. Only then the paste operation will paste the codes correctly. In cases where the detailed name itself is of two words separated by space the second word will be copied to the description column. In such cases you have to manually copy the second word back to detail name column.

	Code	Detail Name	Description
	CANC	Cancellation	This is a request to cancel a previously se...
	NEWM	New	This is a new modification of registration ...

Removing Codes

You can use the ' ' button to remove an existing code.

Note:

You can use the ' ' and ' ' buttons to move code(s) up/down.

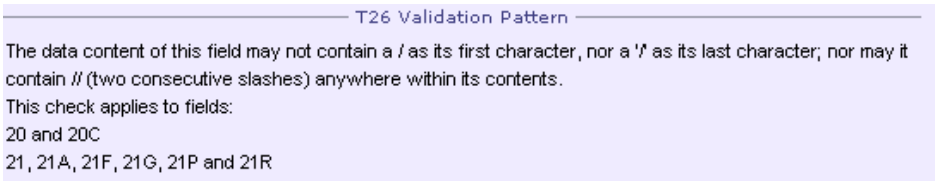
See Also:

Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Adding T26 Validation

T26 validation is applicable in cases where a field's value should not start or end with a slash '/' and not contain two consecutive slashes '//'.

1. Add a new validation.
2. Select 'Type' as 'T26' in the 'Type' column.
3. The error code will be automatically set as 'T26'. You need not change it.
4. Specify the qualifiers, field options, null field and comment properties as specified earlier.
5. The description and usage for this validation type will be displayed at the bottom.



See Also:

Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Adding T14 Validation

This validation is applicable for Amount\Rate\Balance\Number fields whose sign must be present when their value is non-zero.

1. Add a new validation.

2. Select 'Type' as 'T14' in the 'Type' column.

3. The error code will be automatically set as 'T14'. You need not change it.

4. Specify the qualifiers, field options, null field and comment properties as specified earlier.

5. From the Sign Field list-box displayed, select Sign.

In MT514 sub-field 'Rate' in field 92A has a validation that when Sign is present, Rate must not be zero. For this field, T14 validation can be added as shown below.

See Also:

Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Adding Date Validation

Date validations are applicable for Date/Time fields, whose value should be expressed, in a particular format (e.g. YYYYMMDD).

1. Add a new validation.

2. Select ‘Type’ as ‘DATE’ in the ‘Type’ column.

3. Specify the error code, qualifiers, field options, null field and comment properties as specified earlier.

Specifying Date Format

Specify the date format for the validation in the ‘Format’ combo box. Please note that this is a mandatory property.

In MT519 sub-field ‘Date’ in field 98a should be a valid date expressed as ‘YYYYMMDD’. For this field ‘DATE’ validation can be added and format specified as shown below.

See Also:

Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Adding Currency Code Validation

This validation is to verify that the currency code specified for a field is a valid ISO 4217 currency code.

1. Add a new validation.

2. Select ‘Type’ as ‘Currency Code’ in the ‘Type’ column.

3. The error code will be automatically set as ‘T52’. You need not change it.

4. Specify the qualifiers, field options, null field and comment properties as specified earlier.

5. The description and usage for this validation type will be displayed at the bottom.

See Also:

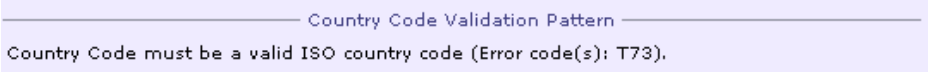
Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Adding Country Code Validation

This validation is to verify that the country code specified for a field is a valid ISO country code.

1. Add a new validation.
2. Select 'Type' as 'Country Code' in the 'Type' column.
3. The error code will be automatically set as 'T73'. You need not change it.
4. Specify the qualifiers, field options, null field and comment properties as specified earlier.

The description and usage for this validation type will be displayed at the bottom.



See Also:

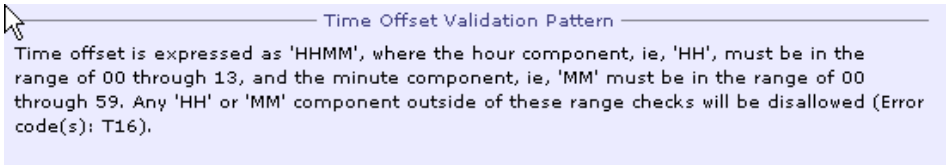
Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Adding Time Offset Validation

Time Offset validations are applicable for Time fields, whose value should be expressed, in a particular format HHMM and whose value should be within a particular range.

1. Add a new validation.
2. Select 'Type' as 'Time Offset' in the 'Type' column.
3. The error code will be automatically set as 'T16'. You need not change it.
4. Specify the qualifiers, field options, null field and comment properties as specified earlier.

The description and usage for this validation type will be displayed at the bottom.



See Also:

Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Adding BIC validation

This validation is to verify that the BIC/BEI specified for a field is a SWIFT registered address, either connected or not-connected.

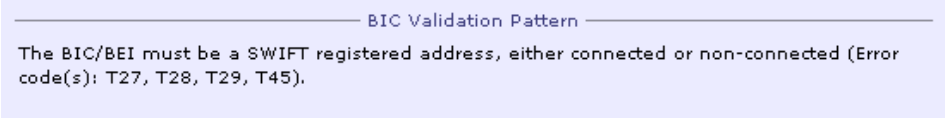
1. Add a new validation.

2. Select ‘Type’ as ‘BIC’ in the ‘Type’ column.

3. The error codes will be automatically set as ‘T27, T28, T29, T45’. You need not change it.

4. Specify the qualifiers, field options, null field and comment properties as specified earlier.

The description and usage for this validation type will be displayed at the bottom.



See Also:

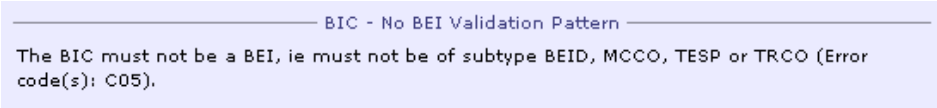
Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Adding C05 validation

This validation is to verify that the BIC specified for a field is not a BEI, ie must not be of subtype BEID, MCCO, TESP or TRCO

1. Add a new validation.
2. Select ‘Type’ as ‘C05’ in the ‘Type’ column.
3. The error code will be automatically set as ‘C05’. You need not change it.
4. Specify the qualifiers, field options, null field and comment properties as specified earlier.

The description and usage for this validation type will be displayed at the bottom.



See Also:

Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Adding Decimal Validation

This validation is applicable for ‘Amount’ field to validate that the number of digits following the comma must not exceed the maximum allowed for the specified currency.

1. Add a new validation.
2. Select ‘Type’ as ‘Decimal’ in the ‘Type’ column.
3. The error code will be automatically set as ‘C03’. You need not change it.
4. Specify the qualifiers, field options, null field and comment properties as specified earlier.
5. From the Currency Field list-box displayed, select Currency_Code.

In MT567, sub-field 'Amount' in field 19A has a validation that the number of digits following the comma must not exceed the maximum allowed for the specified currency. For this field, Decimal validation can be added as shown below.

See Also:

Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Adding Party Identification Validation

Party Identification is applicable in cases where a party can be identified using a set of predefined groups. The predefined groups can be specified as codes.

1. Add a new validation.

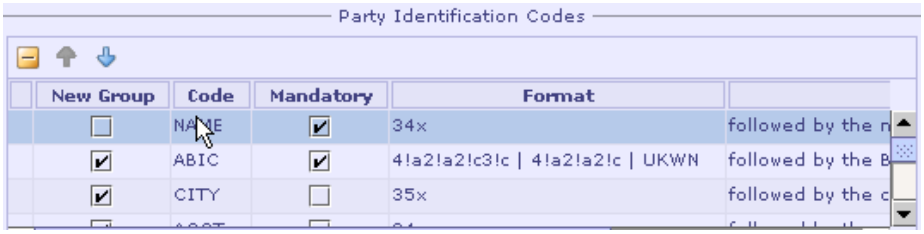
2. Select 'Type' as 'Party Identification' in the 'Type' column.

3. The error code will be automatically set as 'T78'. You need not change it.

4. Specify 'Field Options', 'Null Field' and 'Comment' properties as specified earlier.

Specifying Party Identification Codes

The list of codes for the sub field is listed in the 'Party Identification Codes' Table. You have the option to set a code as New Group and you can also make a code Mandatory by checking the required check-box as shown below:



Removing Codes

You can use the ' ' button to remove an existing Party Identification code. Note that atleast one code should be present for a Party Identification Code validation.

Note:

You can use the ' ' and ' ' buttons to move code(s) up/down.

See Also:

Specifying properties common for all validations
Adding validations for a sub-field
Removing validations from a sub field

Removing Validations from a Sub Field

1. Select the swift sub field and click the Validations button.

2. In the validations table of the Swift Field Validations dialog box, select the validation(s) that are to be removed.

3. Click the 'Remove Validation(s)' button ' ' to remove the selected validation(s).

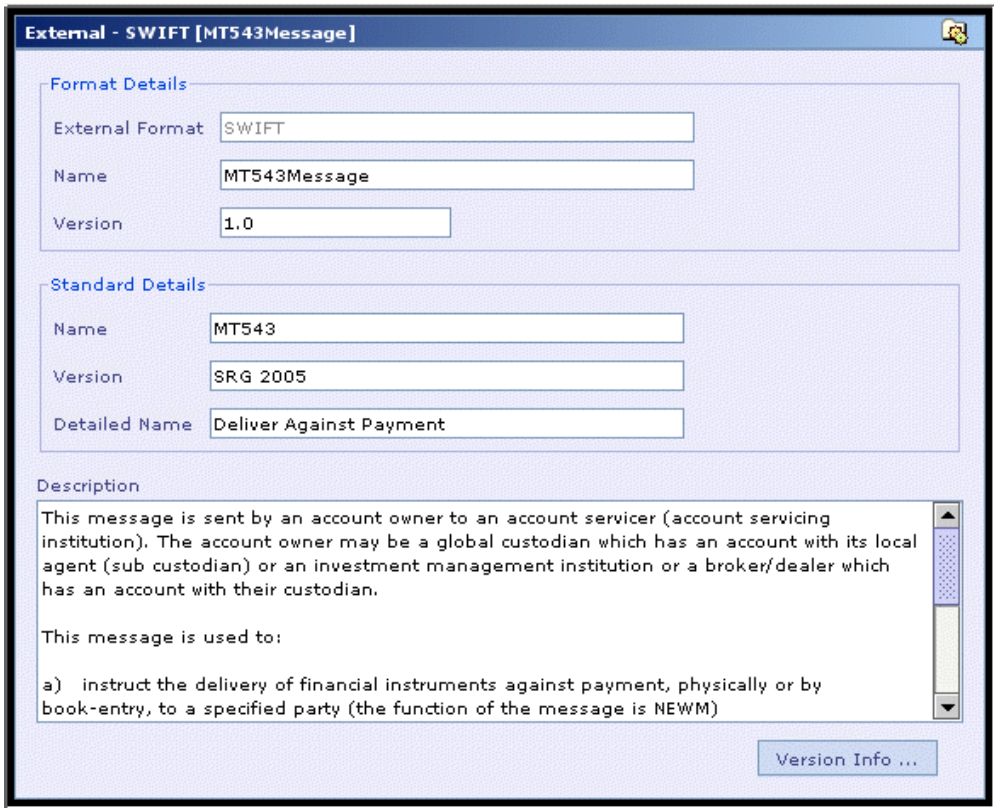
See Also:

Adding validations for a sub-field

SWIFT External Message UI

The following properties can be specified in the SWIFT External Message UI.

Format Name. This refers to name of the external format. (MT543ExternalMessage)
Version.
Standard Name. This refers to the actual name of the SWIFT message. (MT543)
Standard Version. This refers to the SRG version based on which the message was created. (SRG 2005)
Detailed Name. This refers to the detailed name of the SWIFT message. (Deliver Against Payment)



See Also:

SWIFT External Format UI
Creating a SWIFT Format
Entering the SWIFT Specification

SWIFT External Format UI

The **External Format – SWIFT** UI has 3 tabs – **Header**, **Data** and **Trailer** to represent the header block, text block and trailer block of the SWIFT message. The header and trailer types have to be specified while creating the external format. The header/trailer fields cannot be modified or removed.

See Also:

External Format – SWIFT (Header/Trailer)
Swift User Message (Data)
System/Service Message
Format Options
Creating a SWIFT Format
Entering the SWIFT Specification
SWIFT External Message UI
Expanding/Collapsing SWIFT Fields

External Format - SWIFT (Header/Trailer)

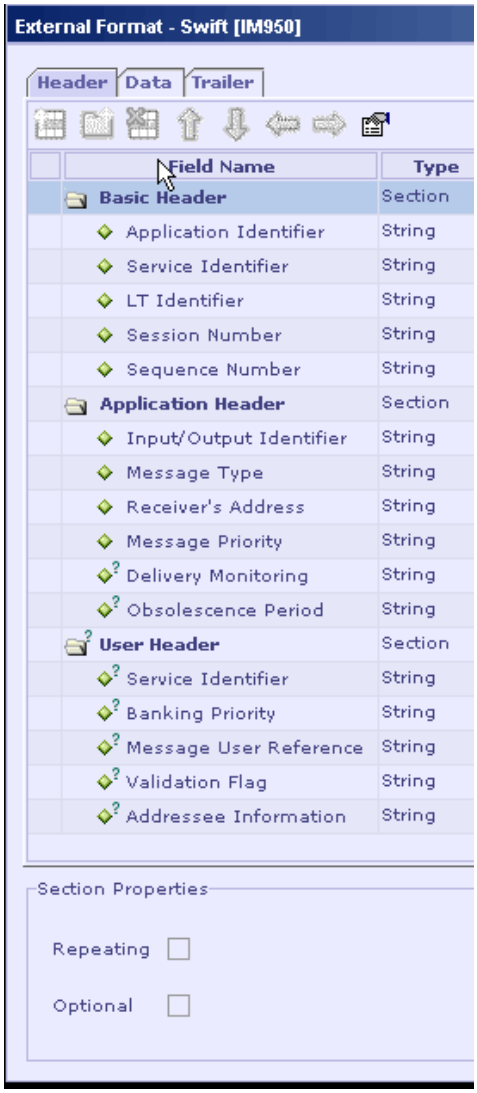
The **External Format - SWIFT (Header)** UI shows the pre-defined fields as per the Header/Trailer option chosen during creation. As noted earlier, you have the option to choose **SWIFT Input** / **SWIFT Output** / **SWIFT Input/Output** / **FICC Header** (Custom Header) / **None**, when creating the SWIFT external format.

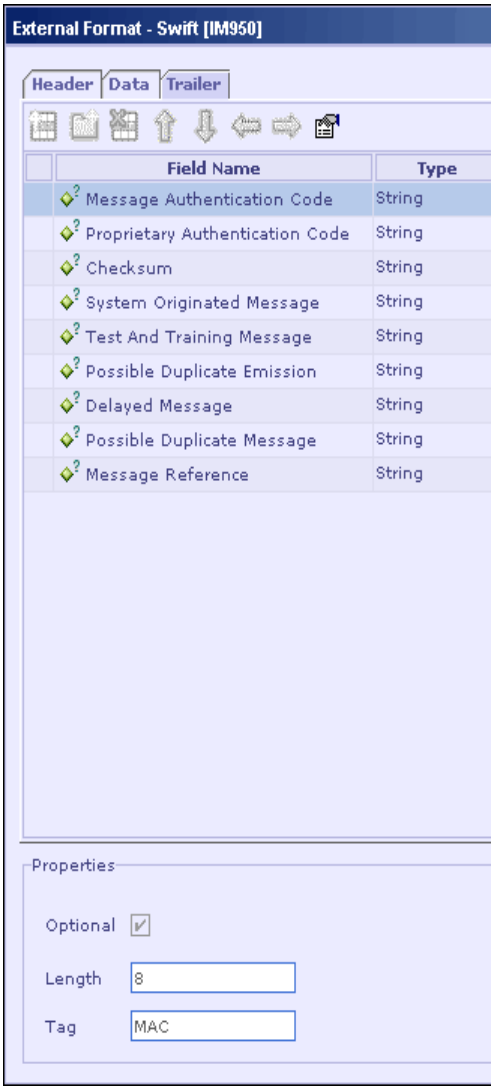
See Also:

SWIFT Input Header/Trailer
SWIFT Output Header/Trailer
SWIFT Input/Output Header/Trailer
FISC Header
Format Options
Swift User Message (Data)

SWIFT Input Header/Trailer

When you choose this option, the **Header** and **Trailer** panel has the following fields for a SWIFT external message format.





The Section Properties panel in the Header panel shows the properties of the header block, such as whether it is Repeating and Optional. The Properties panel shows the properties of a field (shown when a field is selected). It shows whether the field is Optional and it's Length. For fields of User Header block and Trailer, additionally the Tag of the field is shown. The fields cannot be added, altered or removed for Header and Trailer.

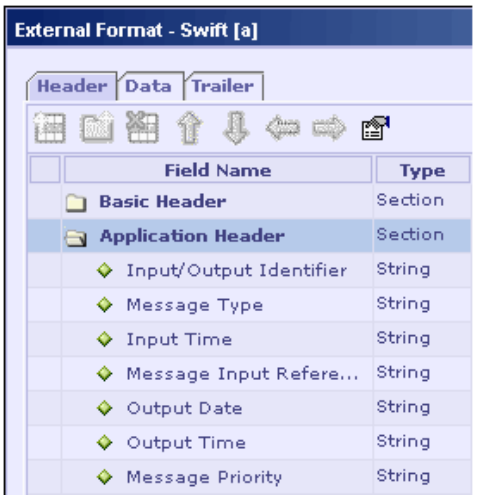
The field and section properties displayed are not editable.

See Also:

SWIFT Output Header/Trailer
SWIFT Input/Output Header/Trailer
FISC Header
Format Options
Swift User Message (Data)

SWIFT Output Header/Trailer

When you choose this option, the **Header** and **Trailer** panel has similar fields as that of a SWIFT Input Header/Trailer except for the Application Header block in Header section which has different set of fields as shown below.

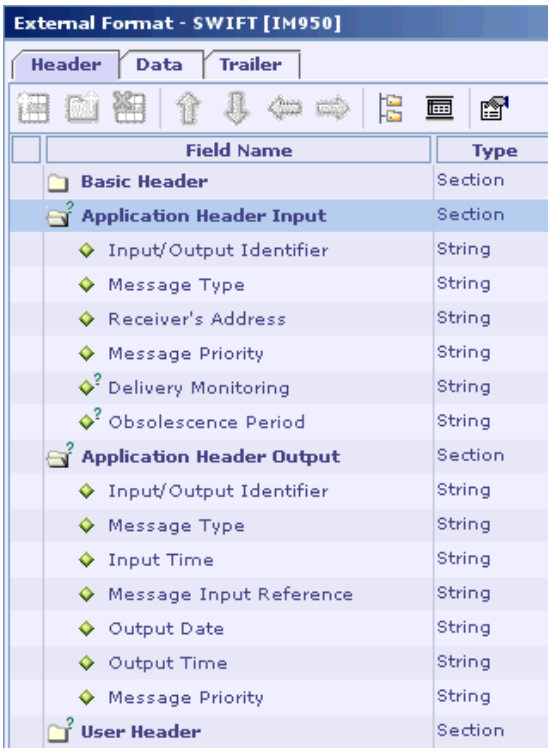


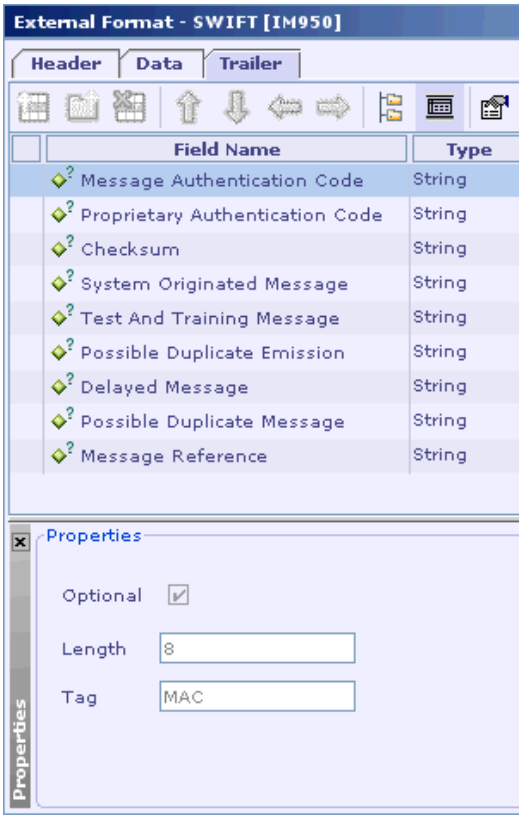
See Also:

SWIFT Input/Output Header/Trailer
FISC Header
Format Options
Swift User Message (Data)

SWIFT Input/Output Header/Trailer

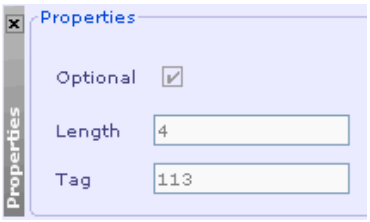
When you choose this option, the **Header** and **Trailer** panel has similar fields as that of a SWIFT Input Header/Trailer except for the Application Header block in Header section which is divided as Application Header Input and Application Header Output as shown below.





The Section Properties panel in the Header panel shows the properties of the header block, such as whether it is Repeating and Optional.

The Properties panel shows the properties of a field (shown when a field is selected). It shows whether the field is Optional and it's Length. For fields of User Header block and Trailer, additionally the Tag of the field is shown. The fields cannot be added, altered or removed for Header and Trailer.



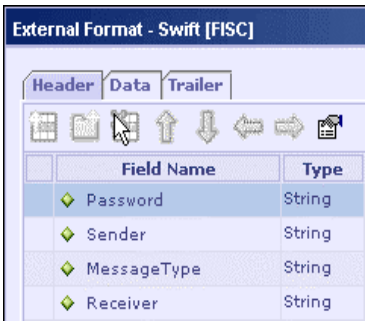
The field and section properties displayed are not editable.

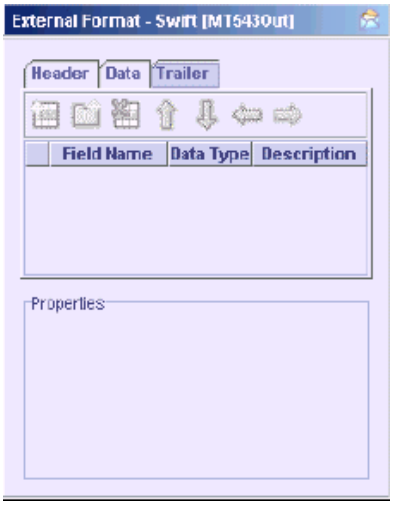
See Also:

FISC Header
Format Options
Swift User Message (Data)

FISC Header

When you choose this option, the **Header** and **Trailer** panel has the following fields for a SWIFT input/output message format.





The trailer has no fields and is blank in this case. Field properties **Optional** and **Length** are displayed in the **Properties** panel for the header.

Note:

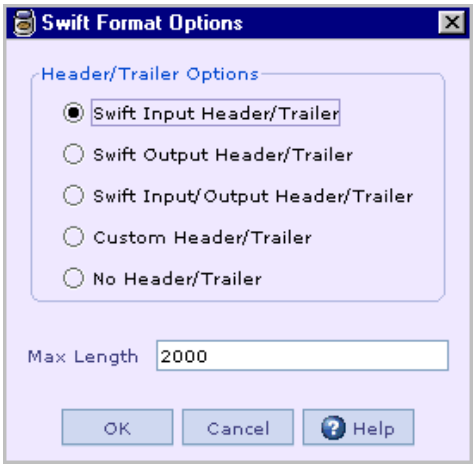
When you choose the option 'None', the Header and Trailer sections will be empty.

See Also:

SWIFT Input Header/Trailer
SWIFT Output Header/Trailer
Format Options
Swift User Message (Data)

Swift Format Options

You can change the Header/Trailer chosen during SWIFT Input/Output message creation by using this feature. Click the 'Format Options' button in the External Format UI. The **Swift Format Options** dialog box appears as shown below:



The same set of Header/Trailer options that were available during message creation is available here too. (Custom Header/Trailer corresponds to FICC Header).

You can set the maximum length for the message by entering the length value in the 'Max Length' text box. The value specified should be an integer value.

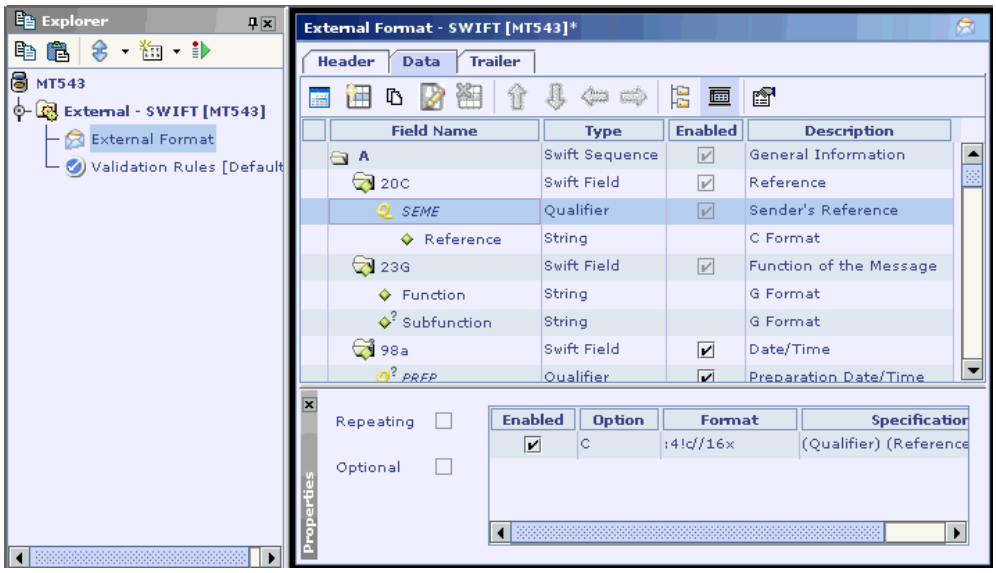
Max Length accepts values in the range '0 to 9999' and '10000'. During runtime, if the length of the input value exceeds the maximum length specified in format options, it generates error as 'Message Length exceeded'. For example, consider a message with maximum length value 10000. If the input value exceeds the length specified then error is thrown as "Message Length exceeded. Maximum length allowed '10,000', actual message length '10,115'.".

See Also:

SWIFT Input Header/Trailer
SWIFT Output Header/Trailer
SWIFT Input/Output Header/Trailer
FISC Header
Swift User Message (Data)

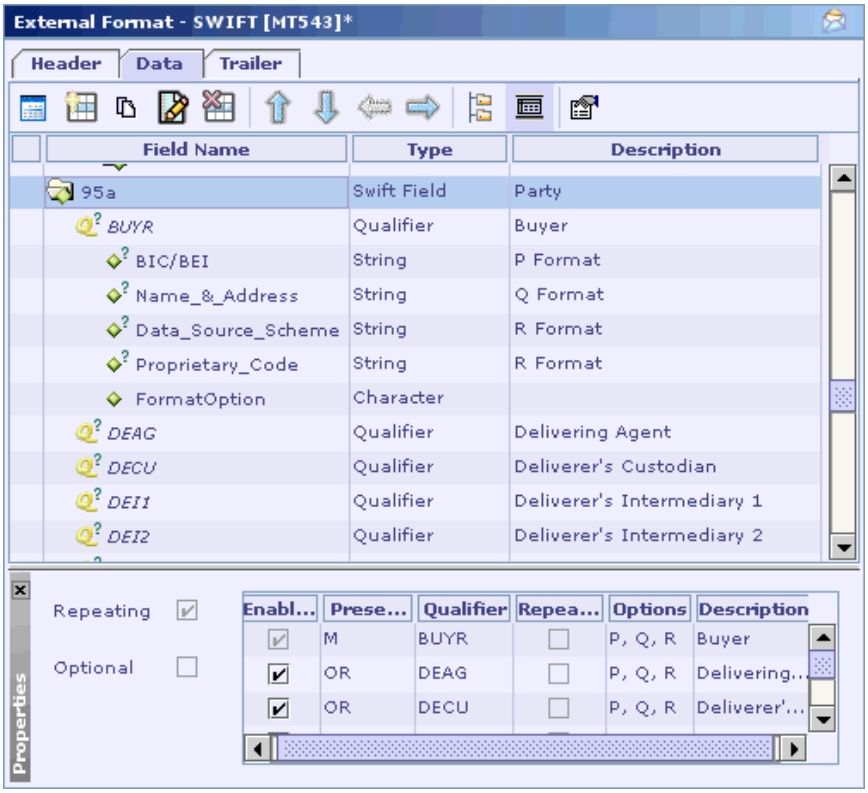
Swift User Message (Data)

The **External Format - SWIFT User message (Data)** UI looks as below. The message format is shown in the table at the top, and a panel at the bottom shows the properties of the row selected in the table. The properties panel dynamically changes as the row selected in the table changes.

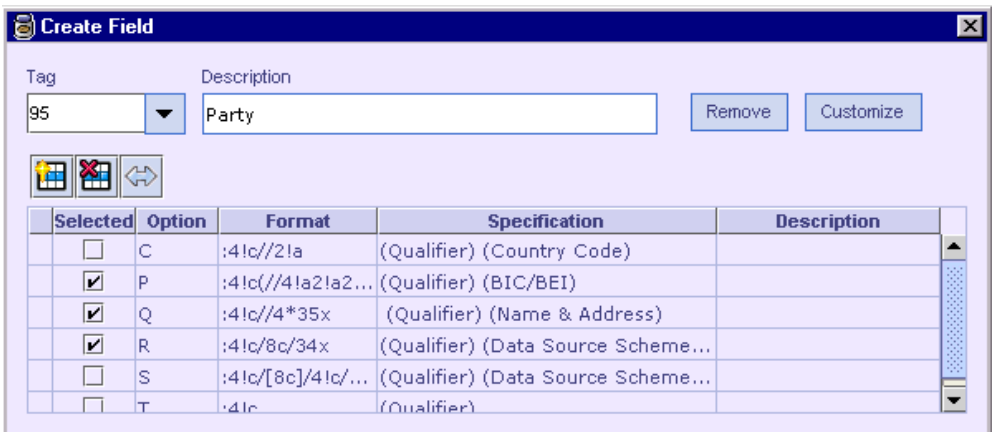


The message format (ie, the fields) is automatically populated when created from a pre-defined format. Only the optional fields can be enabled or disabled in this case.

Whereas, the table is blank when created from an empty message format and the tool bar buttons are enabled so as to add, modify and move the fields as required. In this case, there is no need for the **Enabled** column in the table and the properties panel, unlike the previous case, as the user adds the fields as and when required.



The sub-fields displayed under the fields are a collection of sub-fields in the options selected while creating or modifying the field (using the **Create Field** or **Modify Field** dialog). ie, in the above figure the qualifier BUYR lists the sub-fields of the selected options P, Q, R only though other options are also available (See figure below).



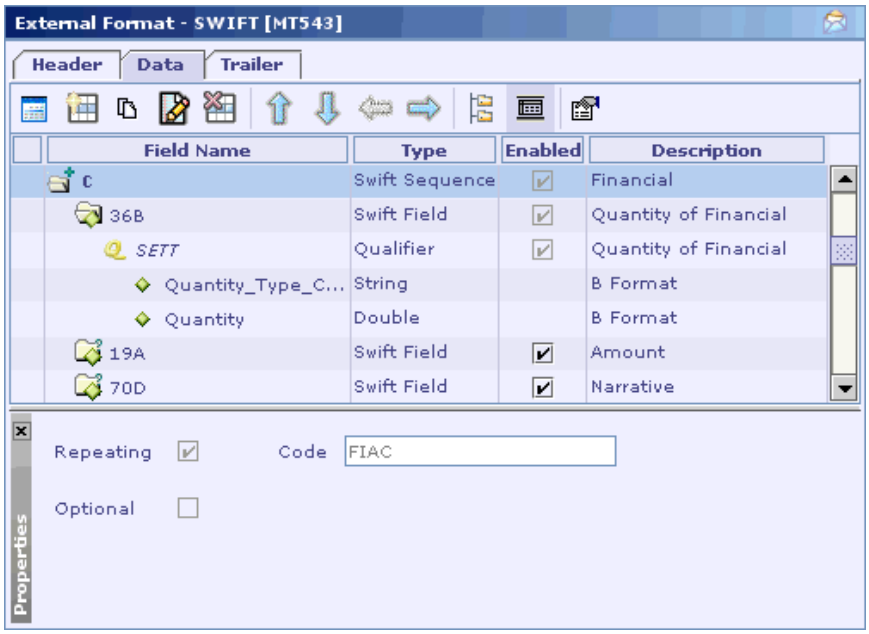
Note that the sub-fields of a generic field are displayed under the qualifier in the **External Format - SWIFT** UI, similar to a sequence or field. This is because, though the qualifier is also a sub-field, it distinguishes the generic field. Hence the rest of the sub-fields are shown under it.

See Also:

SWIFT Sequence Info
SWIFT Field Info (Generic)
SWIFT Field Qualifier Info
SWIFT Field Info (Non-Generic)
SWIFT Sub Field Info

SWIFT Sequence Info

When a SWIFT sequence is selected in the **External Format - SWIFT** UI, the bottom panel shows the properties of the sequence as shown below.



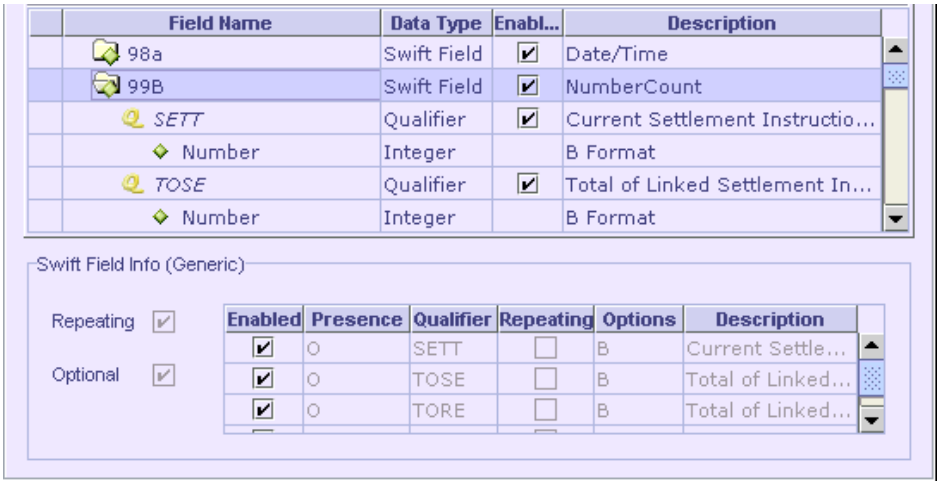
The panel shows whether the sequence is **Repeating** and it is **Optional** or not. The **Code** of the sequence if available is also displayed. The panel just displays the properties and the properties could not be edited here. To modify the properties, refer Updating a SWIFT Field section. This applies to sequences also.

See Also:

SWIFT Field Info (Generic)
SWIFT Field Qualifier Info
SWIFT Field Info (Non-Generic)
SWIFT Sub Field Info
Adding a SWIFT Sequence

SWIFT Field Info (Generic)

When a generic field is selected in the **External Format - SWIFT** UI, the bottom panel shows the properties of the field as below.



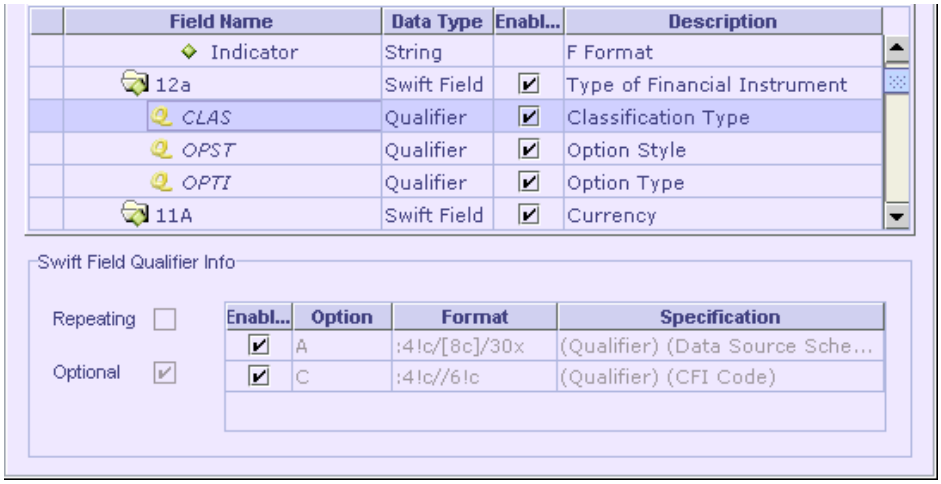
The check boxes **Repeating** and **Optional** show the field properties. For a generic field, the qualifiers are displayed in a table, along with their properties – **Presence** (O – Optional & M - Mandatory), **Repeating**, **Description** of the qualifier and the **Options** mapped to it. If the format is created from an existing one, an additional **Enabled** column is also shown, only which is editable. This is provided to allow the user to select the Qualifiers applicable for the field at that occurrence. To modify the field properties, refer Updating a SWIFT Field section.

See Also:

SWIFT Sequence Info
SWIFT Field Qualifier Info
SWIFT Field Info (Non-Generic)
SWIFT Sub Field Info
Adding a new Generic Field

SWIFT Field Qualifier Info

When a qualifier of a generic field is selected in the **External Format - SWIFT** UI, the bottom panel shows the properties of the qualifier.



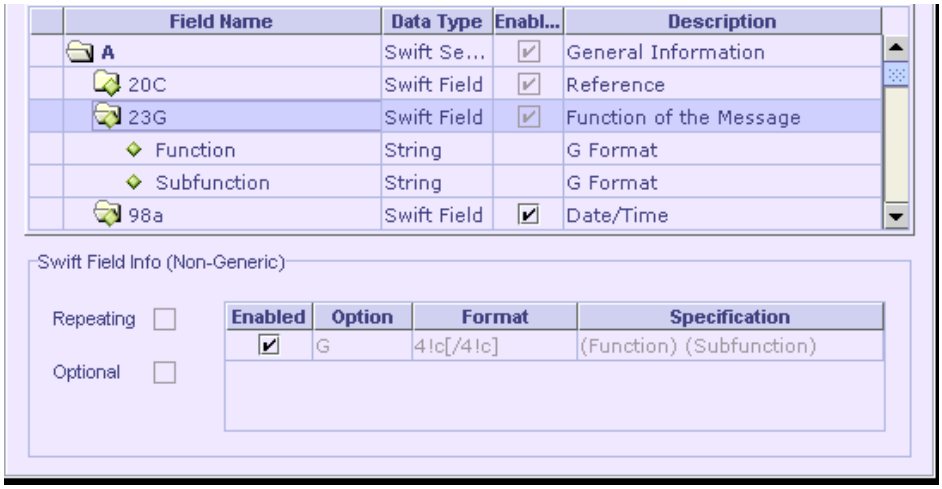
The check boxes **Repeating** and **Optional** show the qualifier properties. The **Options** that are associated with the qualifier are shown in a table. The **Format** and **Specification** of each option are shown in the table. For a format created from an existing one, an additional **Enabled** column is also seen, only which is editable. This is provided to allow the user to select the associated options of the qualifier for the field at that occurrence. To modify the properties, refer Updating a SWIFT Field section.

See Also:

SWIFT Sequence Info
SWIFT Field Info (Generic)
SWIFT Field Info (Non-Generic)
SWIFT Sub Field Info
Adding a new Generic Field

SWIFT Field Info (Non-Generic)

When a non-generic field is selected in the **External Format - SWIFT** UI, the bottom panel shows the properties of the field as shown below.



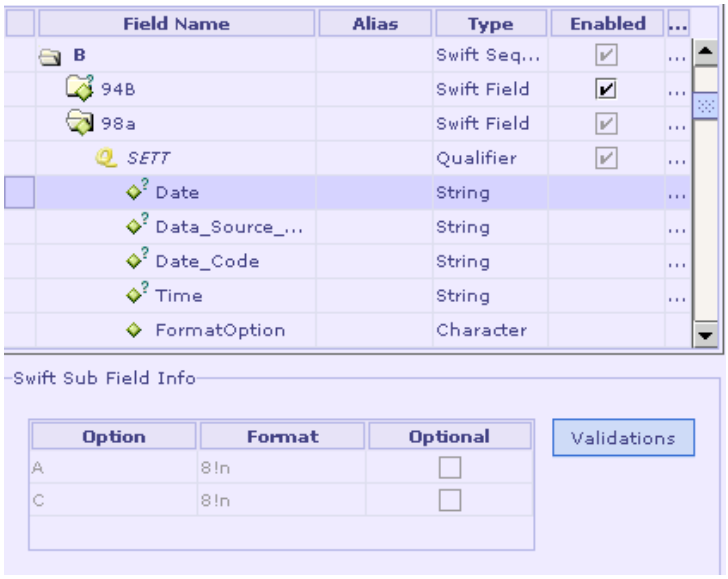
The check boxes **Repeating** and **Optional** show the field properties. The **Options** that are associated with the field are shown in a table along with their **Format** and **Specification**. For a format created from an existing one, an additional **Enabled** column is also seen, only which is editable. This is provided to allow the user to select the required options for the field at that occurrence. To modify the properties, refer Updating a SWIFT Field section.

See Also:

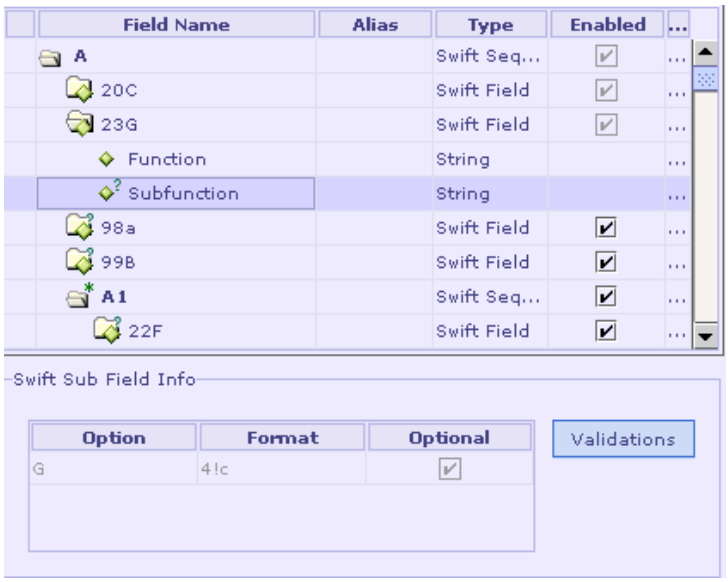
SWIFT Sequence Info
SWIFT Field Info (Generic)
SWIFT Field Qualifier Info
SWIFT Sub Field Info
Adding a Non-Generic Field

SWIFT Sub Field Info

For a sub-field of a field (generic or non-generic) selected in the **External Format - SWIFT** UI, the bottom panel looks as shown below.



Sub-field Info (Generic Field)



Sub-field Info (Non-Generic Field)

The **SWIFT Sub Field Info** panel shows the sub-field's **Format**, whether it is **Optional** and the **Option** in which it occurs. For each option (if the sub-field is specified in more than one option), the sub-field details are shown in separate rows. Validations can be added by clicking the 'Validations' button.

See Also:

SWIFT Sequence Info
SWIFT Field Info (Generic)
SWIFT Field Qualifier Info
SWIFT Field Info (Non-Generic)
Adding a SWIFT Field
Adding validations for a sub-field

System / Service Message

A System/Service message can be created in designer either from

Existing SWIFT message format, or
Empty message format

The existing SWIFT formats are available as XML files in the location <*installation dir*>\config\swift\format.

See Also:

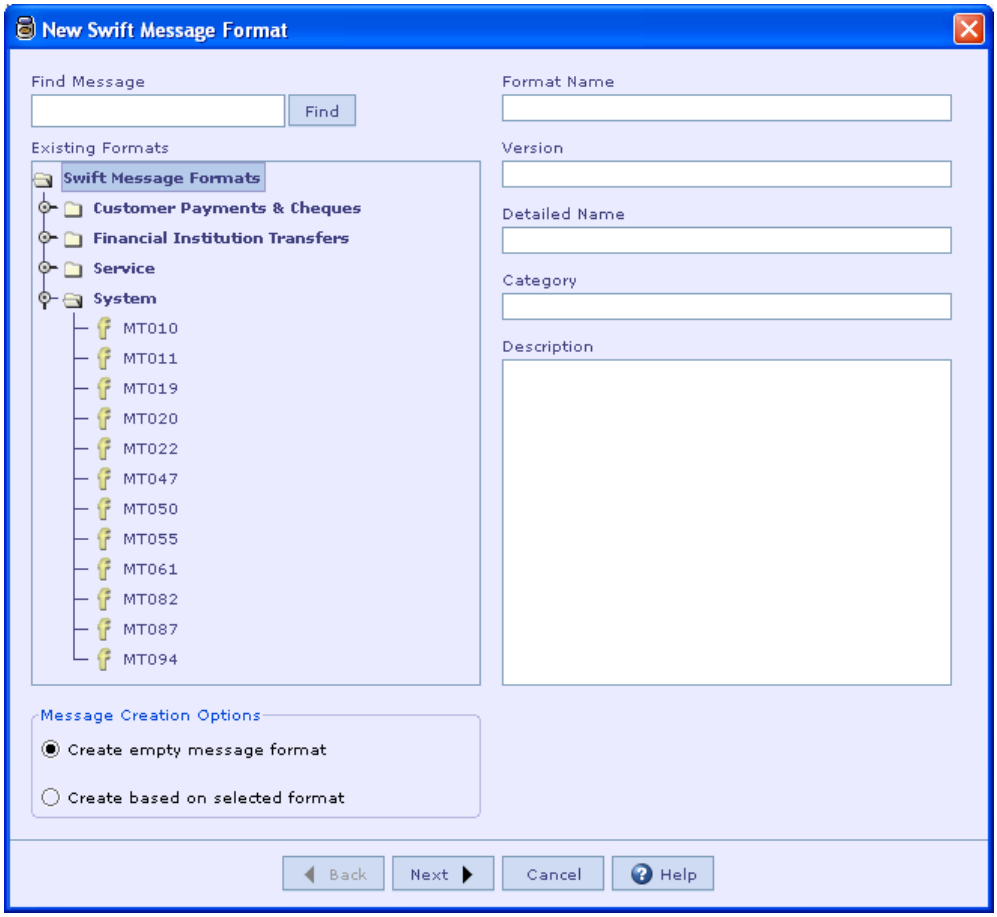
System Field Dictionary

Creating an empty Service/System message format

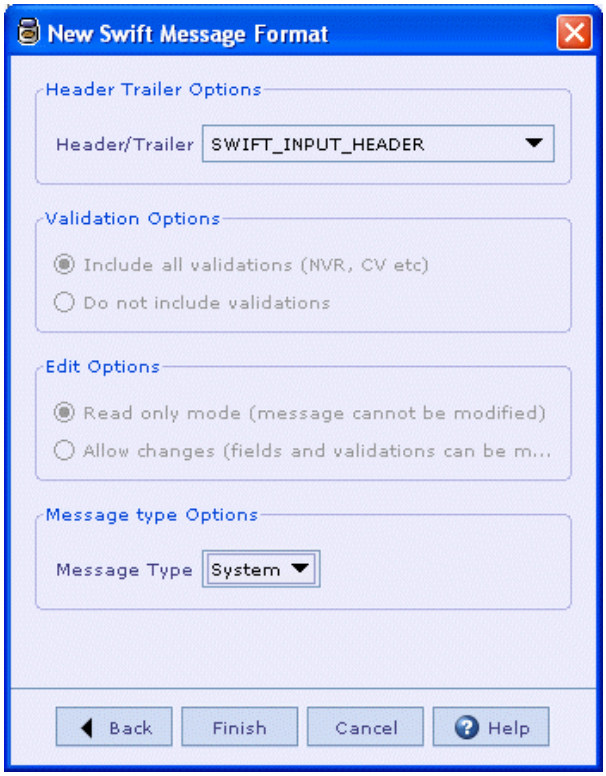
1. Right-click the Cartridge node in Designer and select the **New External Message** menu item from the context menu to create a SWIFT external format.

2. In the **New External Message** dialog that appears, enter the **Transformation Name** and select **SWIFT** from the **External Message** listbox. Click OK.

3. In the **New Swift Message Format** dialog that appears, select **Create empty message format** radio button. Click **Next.**



4. Click ‘Next’. In the next dialog box select the header type required and the message type. The ‘Message Type’ combo box lists the message types. The types of messages are ‘User’, ‘System’ and ‘Service’. To create a System message select the type as ‘System’. To create a Service message, select the type as ‘Service’.



5. Click 'Finish' to create the System/Service message.

See Also:

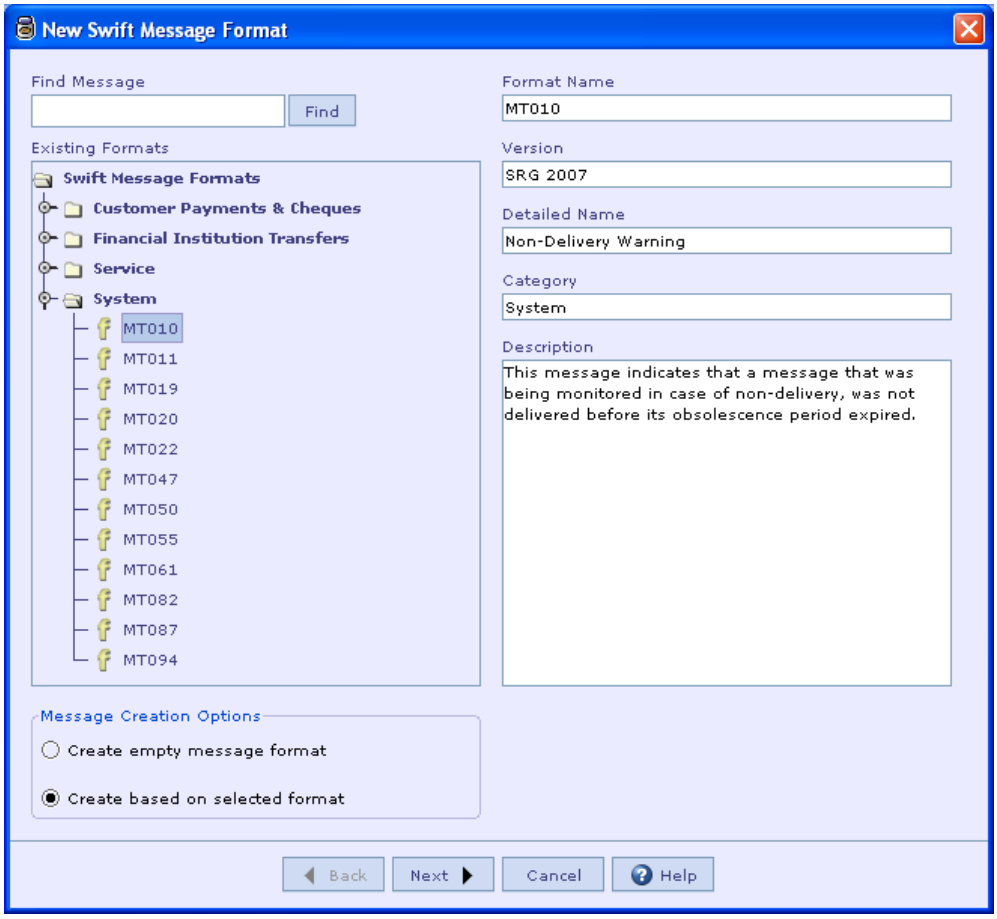
Creating a SWIFT System/Service Format Based on an Existing SWIFT Message Format
Adding a System Field
Adding a Group

Creating a SWIFT System/Service Format Based on an Existing SWIFT Message Format

1. Right-click the Cartridge node in the Designer. Select the **New External Message** menu item from the context menu to create a SWIFT external format

2. In the **New External Message** dialog that appears enter the **Transformation Name** and select **SWIFT** from the **External Message** listbox . Click OK.

3. In the **New Swift Message Format** dialog that appears, select an existing format based on which the new format is to be created. Select **Create based on selected format** radio button. Click **Next**.



4. In the next dialog that appears you have various options to choose Header/Trailer, Validation and Edit options. Click 'Finish' to create the message after selecting the appropriate options.

Note:

The existing SWIFT system/service messages are under category 'System' and 'Service' respectively. When a format based on a message under these categories is created the type of the message is automatically set as either System/Service.

See Also:

Creating an empty Service/System message format
Adding a System Field
Adding a Group

Adding a System Field

A system field can be either

A simple field. A field that does not have any sub-fields. For e.g. field ‘swift-address’ (tag 102). The format of the field is ‘4!a2!a2!c1!c3!c’.

A complex field. A field that consists of several sub-fields. For e.g. field ‘mir’ (tag 106) has the following format ‘*(6!n)(4!a2!a2!c1!c)(3!c)(4!n)(6!n)*’.

See Also:

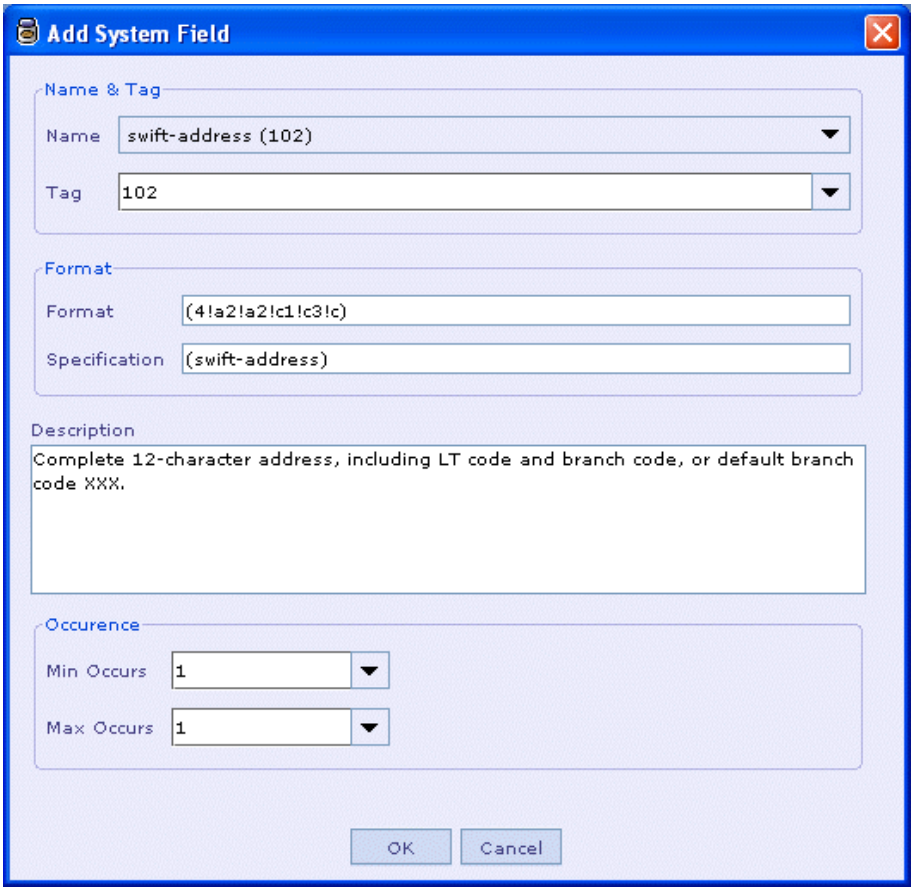
Adding a Simple Field
Adding a Complex Field
Fields Separated by OR/AND
Adding a Group
System Field Dictionary

Adding a Simple Field

A simple field is a field that does not have any sub-fields. For e.g. field ‘swift-address’ (tag 102). The format of the field is ‘4!a2!a2!c1!c3!c’. To add the field the following steps need to be performed.

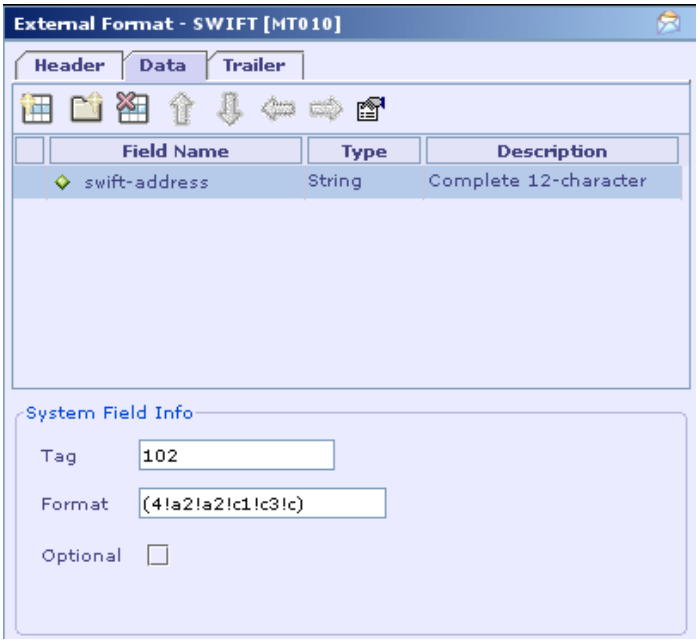
1. In the SWIFT external format UI, click the button. The ‘Add System Field’ dialog will be displayed.

2. Select the field to be added (‘swift-address’) in the ‘Name’ combo box. Or else you can type the field tag (102) in the ‘Tag’ combo box. The format details of the field are displayed.



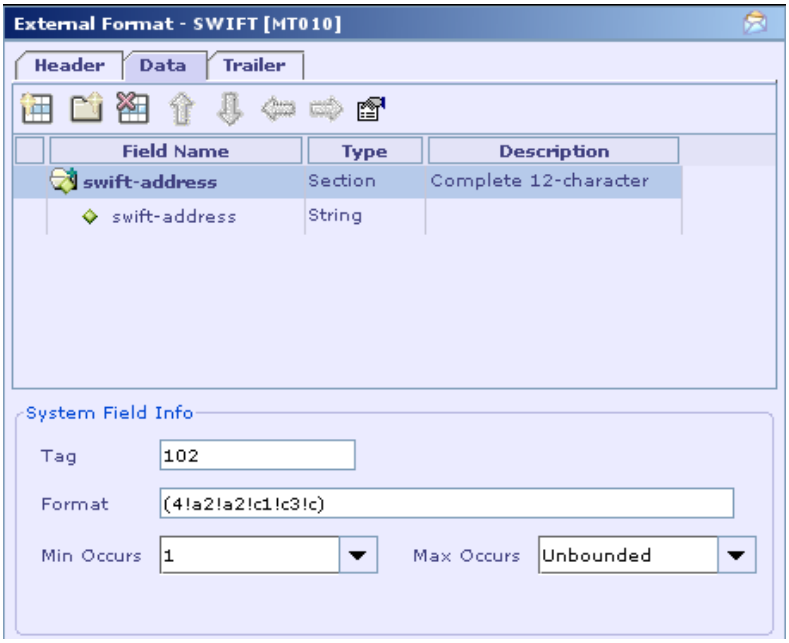
3. You can specify the min/max occurs of the field in this dialog. If the field is non-repeating the field will be added as a simple field. In case a simple field is repeating select the max occurs accordingly. In this case the field will be added as a section. The format, tag and specification of the field cannot be changed. By default, a simple field is added as mandatory and non-repeating.

4. Click ‘OK’ to add the field.



5. You can change the optional property of the field in the ‘System Field Info’ panel. In some cases the same field may be present twice in the message. The name of the field can be changed in such cases. The description of the field can also be changed. The type, tag and format of a field cannot be changed.

6. In case the simple field is repeating and the max occurs has been specified it will be added as a section as shown below.



7. The min/max Occurs, description and field name can be changed.

See Also:

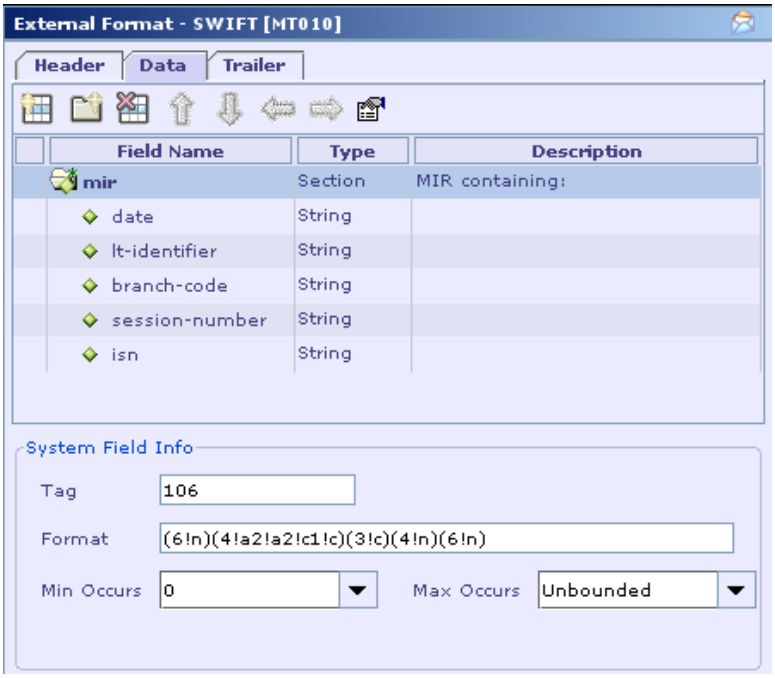
Adding a Complex Field
Fields Separated by OR/AND
Adding a Group

Adding a Complex Field

A complex field consists of several sub-fields. For e.g. field 'mir' (tag 106) has the following format '*(6!n)(4!a2!a2!c1!c)(3!c)(4!n)(6!n)*' with the specification (date)(It-identifier)(branch-code)(session-number)(isn). To add this field the following steps need to be done.

1. In the SWIFT external format UI, click the ' ' button. The 'Add System Field' dialog will be displayed.

2. Select the field to be added ('mir') in the 'Name' combo box. Or else, you can type the field tag (106) in the 'Tag' combo box. The format details of the field are displayed. Specify the 'min/max occurs' for the field based on the message specification. Click OK to add the field. The field is added as a section. By default the field is optional and repeating.



3. The field can be set as optional/repeating by specifying values for 'min/max occurs' in the 'System Field Info Panel'. In case the same field is present twice in the message, the name of the field can be changed in the 'Field Name' column. Please note that the name of sub-fields cannot be changed.

See Also:

Adding a Simple Field
Fields Separated by OR/AND
Adding a Group

Fields Separated by OR / AND

In the specification for 'System' messages you occasionally see fields/groups separated by 'OR' or 'AND'. In such cases the following guidelines need to be followed while adding the fields/groups.

1. If 'OR' is present between the fields in a table, the fields should be added as optional. The validation for the presence of the fields has to be done separately.

2. If 'AND' is present between fields and if the first field is mandatory, then enter the specification as it is. No additional validation needs to be done separately.

3. If ‘AND’ is present between the fields and the first field is optional, enter the fields as optional. Additional validation for the presence of fields needs to be done separately.

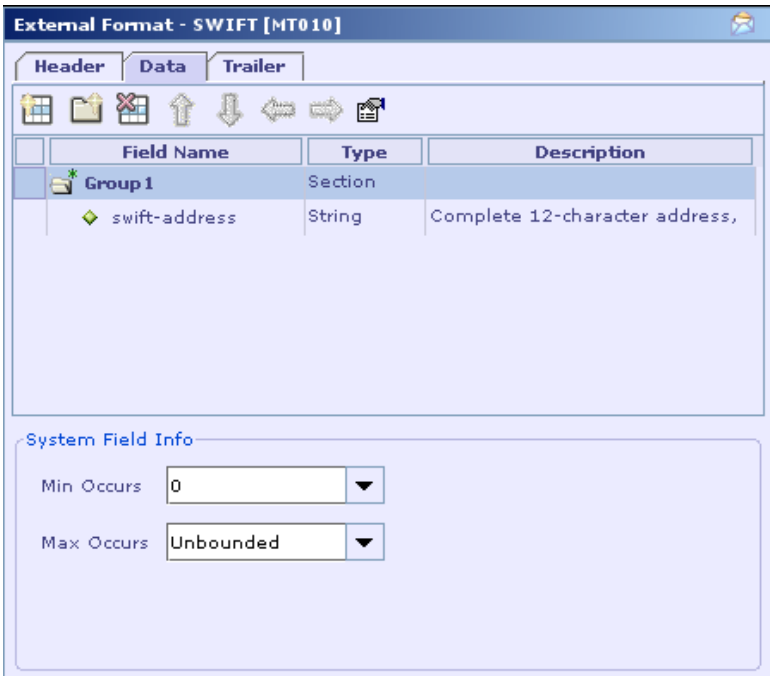
See Also:

Adding a Simple Field
Adding a Complex Field
Adding a Group

Adding a Group

1. In SWIFT external format UI, click the button to add a group. A new group is added.

2. The group name can be specified in the ‘Field Name’ column. In ‘System Field Info’ panel you can specify the min/max occurs for a group.



Groups can be nested within another group.

Note:

‘Choice’ is not supported in case of groups. The groups added are treated as sequence. So while adding an OR group, make sure that it is added as an

optional group. Validations to check the presence of the groups need to be done separately.

See Also:

Deleting a Field/Group
Adding a Simple Field
Adding a Complex Field
Fields Separated by OR/AND

Deleting a Field/Group

1. Select the field/group to be deleted and click ' ' button. The field/group will be removed.

   Note

   Sub-fields cannot be deleted separately.

See Also:

Adding a Group
Adding a System Field

System Field Dictionary

The system field dictionary contains the list of all system fields along with the formats, tag, specification and description. Any additional validation that needs to be done for a field is also specified in the field dictionary. Any changes that need to be done to a field's format/specification/validation should be done here.

The entry for field 'service-code' (tag 103) is shown below.

```
<SwiftSystemFieldDef Name="service-code" Tag="103">
       <Format><![CDATA[3!a]]></Format>
       <Specification><![CDATA[(service-code)]]></Specification>
       <Description><![CDATA[SWIFTNet FIN Copy Service Code.]]></Description>
</SwiftSystemFieldDef>
```

See Also:

Specifying Validations for a Field
Specifying Validations for a Sub-field
Adding a System Field
Adding a Group

Specifying Validations for a Field

In case where validation needs to be done for the value of a field, it can be specified along with the field definition. The entry for field ‘msg-priority’ (tag 104) is shown below.

```
<SwiftSystemFieldDef Name="msg-priority" Tag="104">
  <Format>1!a</Format>
  <Specification>(msg-priority)</Specification>
  <Description>Message Priority, where:
                  a)  S = system
                  b)  U = urgent
                  c)  N = normal
   </Description>
   <Validations>
     <Validation>
       <formula>In($value, "S", "U", "N")</formula>
       <error-code>V08</error-code>
       <actionmessage>Invalid Message Priority '" + $value+"'"</actionmessage>
    </Validation>
   </Validations>
</SwiftSystemFieldDef>
```

The allowed values for the field are ‘S’, ’U’ and ‘N’. This has been specified using the ‘Validation’ tag under ‘Validations’ tag. Any formula that can be used in ‘Designer’ can be specified in the ‘formula’ tag. Error code and action message can also be specified. The error code and action message specified will be set in the exception that occurs when the validation specified fails.

The ‘Validations’ tag is optional. Use it only if any additional validation needs to be done.

Note:

The field value can be accessed only using the ‘$value’ literal.

See Also:

Specifying Validations for a Sub-field

Specifying Validations for a Sub-field

In some cases validation may need to be specified for a ‘sub-field’ of a field. For e.g. for field ‘mir’ (tag 106) validation needs to be done for sub-field ‘date’. It is specified as shown below

```
<SwiftSystemFieldDef Name="mir" Tag="106">
```

```
  <Format>(6!n)(4!a2!a2!c1!c)(3!c)(4!n)(6!n)</Format>
  <Specification>(date)(lt-identifier)(branch-code)(session- number)(isn)
  </Specification>
   <Description>MIR containing:
                    a)  Input date
                    b)  Input LT including branch code
                    c)  Session number
                    d)  ISN
   </Description>
   <Validations>
     <Validation>
       <subfield>date</subfield>
       <formula>IsDate($value,"yyMMdd")</formula>
       <error-code>V04</error-code>
       <actionmessage>"Invalid Input Date '" + $value + "'"</actionmessage>
     </Validation>
   </Validations>
</SwiftSystemFieldDef>
```

While specifying validations for sub-field, in the ‘Validation’ tag, tag ‘subfield’ must be added. The value of this tag should be the name of the sub-field for which validation needs to be applied.

Note:

The field value can be accessed only using the ‘$value’ literal.

If the name of a sub-field is changed and validation has been specified for it, the ‘subfield’ tag needs to be updated correspondingly.

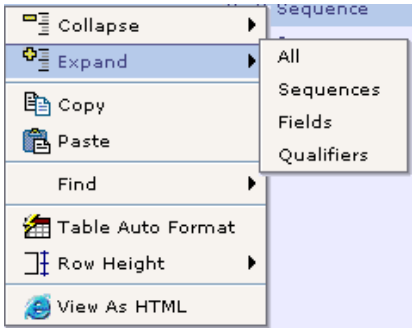
See Also:

Specifying Validations for a Field

Expanding/Collapsing SWIFT Fields

Many SWIFT messages are very large and it is difficult to view the entire message in the External Format UI table. The user can expand/collapse fields so that message part in which he is interested in can be viewed in the External Format UI table.

Right click the SWIFT External Format UI table and select ‘Expand’ menu item.



You can select ‘Expand/Collapse’ menu items to expand/collapse SWIFT fields.

Expanding Fields

Select the ‘Expand’ menu item.

Select ‘All’ sub menu item. All fields including sequences, fields and qualifiers will be expanded.

Select ‘Sequences’ sub menu item. Only sequences will be expanded. Fields within sequences will not be expanded.

Select ‘Fields’ sub menu item. Fields within sequences will be expanded. The qualifiers within fields will not be expanded. If the sequences themselves are collapsed and ‘Fields’ are expanded you will not be able to view them. You have to expand the sequences first and then expand fields.

Select ‘Qualifiers’ sub menu item. The qualifiers present within fields will be expanded. The fields and sequences themselves should be expanded for the expanded qualifiers to be viewed.

Collapsing Fields

Select the Collapse menu item

Select ‘All’ sub menu item. All sequences/fields/qualifiers will be collapsed.

Select ‘Sequences’ sub menu item. All expanded sequences will be collapsed. However fields/qualifiers within sequences will not be collapsed.

Select ‘Fields’ sub menu item. All expanded fields will be collapsed.

Select ‘Qualifiers’ sub menu item. All expanded qualifiers will be collapsed.

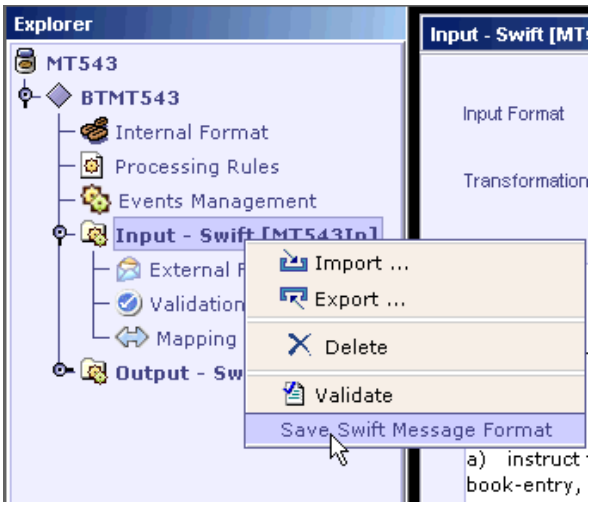
See Also:

SWIFT External Format UI
Saving a SWIFT Message Format

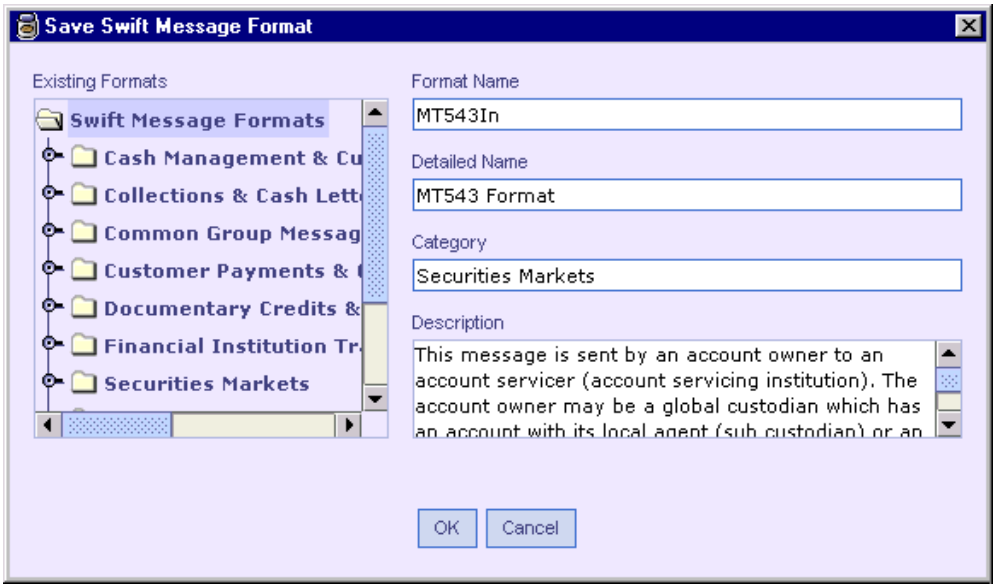
Saving a SWIFT Message Format

A SWIFT message format once fully entered in Designer can be saved so that it is available for creating other formats depending on it.

1. To save a SWIFT format, right-click the SWIFT format node in the **Explorer** and choose the context menu **Save SWIFT Message Format**.



2. The **Save SWIFT Message Format** dialog appears. Enter the **Format Name**, **Detailed Name**, **Category** and **Description** of the format. The category entered can be an existing one, or a new category. Click OK.



3. The SWIFT message format is saved as XML file in the location <*installation dir*>\config\swift\format in the given **Format Name**.

4. SWIFT Formats saved this way are available for creating formats in future. Refer Creating a SWIFT Format based on an existing SWIFT message format.

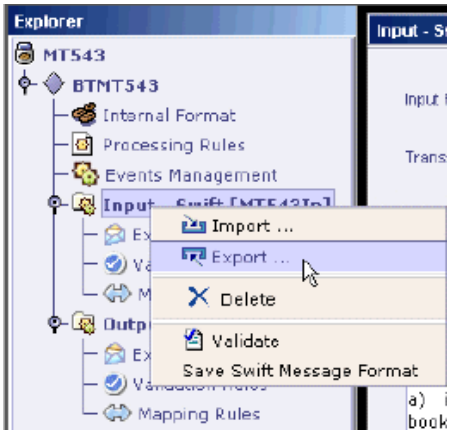
See Also:

Creating a SWIFT Format from an empty message format
Exporting a SWIFT Message Format
Importing a SWIFT Message Format
Sample Exported HTML File

Exporting a SWIFT Message Format

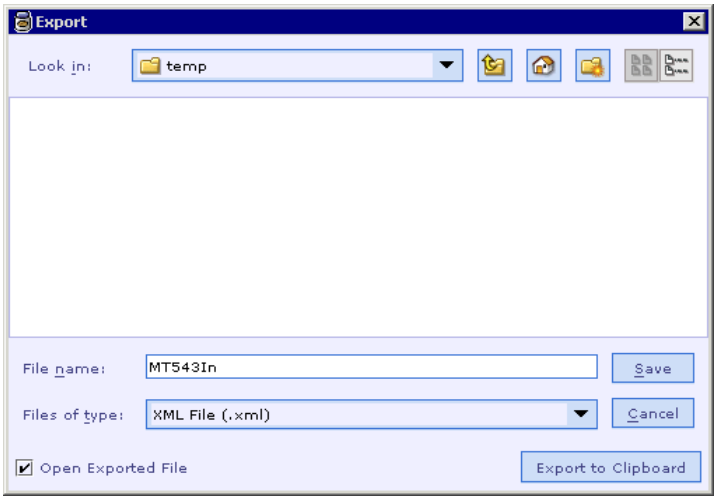
SWIFT message format can also be saved using the usual export method, allowing to save the format in XML, HTML and TPLUS formats.

1. To save a SWIFT format, select the SWIFT format node in the **Explorer** and choose the context menu **Export...**.



2. In the **Export** dialog that appears, select the location to save the exported file. Select the file type in the **Files of type** combo and enter a name to save the file in the **File name** text field. Click **Save** button.

3. Note: You also have the option of exporting the file (in any format you have chosen) to the Clipboard by clicking the 'Export to Clipboard' button in the dialog. If you want to simultaneously open the exported file, you can select the 'Open Exported File' checkbox.



4. The SWIFT format is saved in the location with the file name mentioned.

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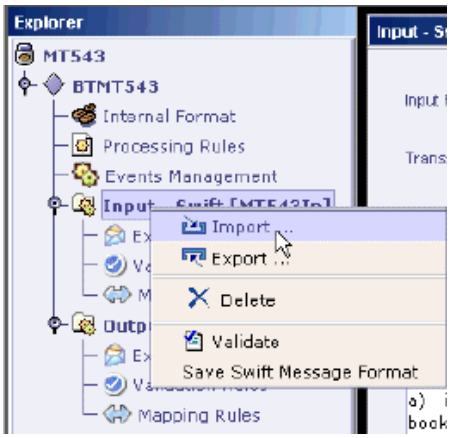
See Also:

Sample Exported HTML File
Importing a SWIFT Message Format

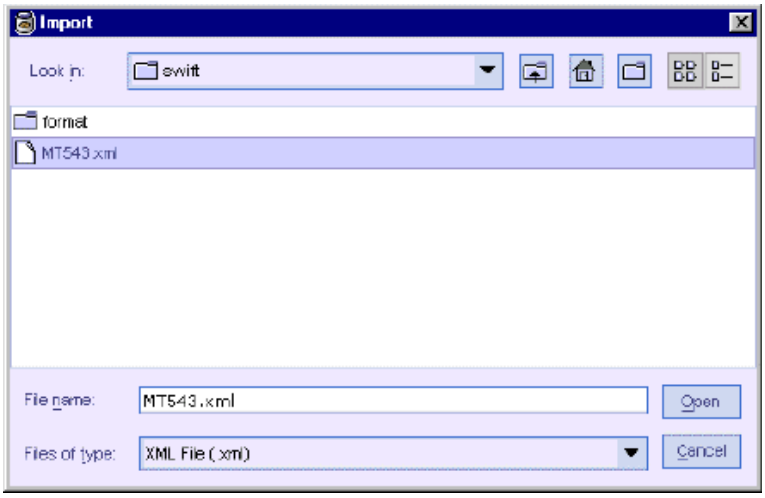
Importing a SWIFT Message Format

SWIFT message format saved using the export method, can be imported. This is supported in XML and TPLUS formats.

1. To import a SWIFT format, right-click the SWIFT format node in the **Explorer** and choose the context menu **Import...**.



2. In the **Import** dialog that appears, select the XML or TPLUS file to be imported. Click **Open** button.



The message format in the file is imported.

See Also:

Exporting a SWIFT Message Format

Sample Exported HTML File

A sample of the SWIFT message format exported in HTML:

MT543In

SCOPE

This message is sent by an account owner to an account servicer (account servicing institution). The account owner may be a global custodian, which has an account with its local agent (sub custodian) or an investment management institution or a broker/dealer, which has an account with their custodian.

This message is used to:

1. instruct the delivery of financial instruments against payment, physically or by book entry, to a specified party (the function of the message is NEWM)

2. request the cancellation of a deliver against payment instruction previously sent by the account owner (the function of the message is CANC)

3. pre-advise the account servicer of a forthcoming deliver against payment instruction (the function of the message is PREA).

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The instruction may be linked to other settlement instructions, eg, for a turnaround or back-to-back, or other transactions, eg, foreign exchange deal, using the linkages sequence.

MT543In Format Specifications

Status	Tag	Qualifier	Generic Field Name	Detailed Field Name	Content/Options	No
Mandatory Sequence A General Information						
M	16R			Start of Block	GENL	*1*
M	20C	SEME	Reference	Sender's Reference	:4!c//16x	*2*
M	23G			Function of	4!c[/4!c]	*3*

Status	Tag	Qualifier	Generic Field Name	Detailed Field Name	Content/Options	No
				the Message		
O	98a	PREP	Date/Time	Preparation Date/Time	A,C	*4*
----->						
O	99B	4!c	NumberCount	(See Qualifier Description)	:4!c//3!n	*5*
-----|						
----->Repetitive Optional Sequence A1 Linkages						
M	16R			Start of Block	LINK	*6*
O	22F	LINK	Indicator	Linkage Type Indicator	:4!c/[8c]/4!c	*7*
O	13A	LINK	Number Identification	Linked Transaction	:4!c//3!c	*8*
M	20C	4!c	Reference	(See Qualifier Description)	:4!c//16x	*9*
M	16S			End of Block	LINK	*10*
-----| End Of Sequence A1 Linkages						
M	16S			End of Block	GENL	*11*
End Of Sequence A General Information						
Mandatory Sequence B Trade Details						

Status	Tag	Qualifier	Generic Field Name	Detailed Field Name	Content / Options	No
…. …..						

Field Specifications

Field 16R: Start of Block

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FORMAT
Option R 16c

PRESENCE
Mandatory

Field 20C: Reference: Sender's Reference

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FORMAT
Option C :4!c//16x
(Qualifier) (Reference)

PRESENCE
Mandatory

QUALIFIER

Order	M/O	Qualifier	R/N	CR	Options	Qualifier Description
1	M	SEME	N		C	Sender's Reference

Field 23G: Function of the Message

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FORMAT
Option G 4!c[/4!c] (Function)
(Subfunction)

PRESENCE
Mandatory

Field 98a: Date/Time: Preparation Date/Time

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FORMAT

Option A	:4!c//8!n	(Qualifier)(Date)
Option C	:4!c//8!n6!n	(Qualifier) (Date) (Time)

PRESENCE
Optional

QUALIFIER

Order	M/O	Qualifier	R/N	CR	Options	Qualifier Description
1	O	PREP	N		A,C	Preparation Date/Time

See Also:

Exporting a SWIFT Message Format