



EBR PHASES
RELEASE 10.01.00
FUNCTIONAL REQUIREMENT SPECIFICATION

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-
-
- FT PharmaSuite® 10.01.00 - Functional Requirement Specification EBR Phases
-
-

Chapter 1	Introduction	1
	Typographical Conventions	1
Chapter 2	Get Process Value Phase (SR0010+)	3
	Layout	4
	Representation during Execution (SR0010.1+)	4
	Representation in Navigator (SR0010.4+)	5
	Representation in Sub-report (SR0010.5+)	5
	Business Logic (SR0010.2+)	6
	Process Parameters (SR0010.8+)	7
	Exceptions (SR0010.3+)	14
	System-triggered Exceptions (SR0010.3.2+)	14
	User-triggered Exceptions (SR0010.3.1+)	15
	Post-completion Exceptions (SR0010.3.3+)	16
	Information Messages	17
	Questions	17
	Decisions	17
	Error Messages	17
	Output Variables (SR0010.9+)	17
Chapter 3	Get Text Value Phase (SR0020+)	19
	Layout	20
	Representation during Execution (SR0020.1+)	20
	Representation in Navigator (SR0020.4+)	21
	Representation in Sub-report (SR0020.5+)	21
	Business Logic (SR0020.2+)	22

Process Parameters (SR0020.8+)	23
Exceptions (SR0020.3+).....	27
System-triggered Exceptions (SR0020.3.2+).....	27
User-triggered Exceptions (SR0020.3.1+)	28
Post-completion Exceptions (SR0020.3.3+).....	29
Information Messages	30
Questions	30
Decisions	30
Error Messages	30
Output Variables (SR0020.9+)	30
Chapter 4 Show Instruction Text (SR0030+)	33
Layout	33
Representation during Execution (SR0030.1+)	33
Representation in Navigator (SR0030.4+).....	34
Representation in Sub-report (SR0030.5+)	34
Business Logic (SR0030.2+).....	35
Process Parameters (SR0030.8+)	35
Exceptions	37
System-triggered Exceptions	38
User-triggered Exceptions.....	38
Post-completion Exceptions	38
Information Messages	38
Questions	38
Decisions	38
Error Messages	38
Output Variables.....	38
Chapter 5 Show Document (SR0040+).....	41
Layout	42
Representation during Execution (SR0040.1+)	42
Representation in Navigator (SR0040.4+).....	43

Representation in Sub-report (SR0040.5+)	43
Business Logic (SR0040.2+).....	43
Process Parameters (SR0040.8+)	44
Exceptions	46
System-triggered Exceptions	46
User-triggered Exceptions.....	47
Post-completion Exceptions	47
Information Messages	47
Questions	47
Decisions	47
Error Messages	47
Output Variables.....	47
Chapter 6 Get Choice Value Phase (SR0080+)	49
Layout	50
Representation during Execution (SR0080.1+)	50
Representation in Navigator (SR0080.4+).....	51
Representation in Sub-report (SR0080.5+)	51
Business Logic (SR0080.2+).....	52
Process Parameters (SR0080.8+)	53
Exceptions (SR0080.3+).....	57
System-triggered Exceptions (SR0080.3.2+).....	57
User-triggered Exceptions.....	58
Post-completion Exceptions (SR0080.3.3+).....	58
Information Messages	60
Questions	60
Decisions	60
Error Messages (SR0080.3.6+)	60
Phase Configuration-specific Error Messages.....	60
Execution-specific Error Messages	61
Output Variables (SR0080.9+)	61

Chapter 7	Upload Image Phase (SR0090+)	63
	Layout	64
	Representation during Execution (SR0090.1+)	64
	Representation in Navigator (SR0090.4+)	65
	Representation in Sub-report (SR0090.5+)	65
	Business Logic (SR0090.2+)	66
	Phase Mode	66
	Main Path	69
	Process Parameters (SR0090.8+)	71
	Exceptions (SR0090.3+)	76
	System-triggered Exceptions (SR0090.3.2+)	76
	User-triggered Exceptions (SR0090.3.1+)	77
	Post-completion Exceptions (SR0090.3.3+)	78
	Information Messages	79
	Questions	79
	Decisions	79
	Error Messages (SR0090.3.6+)	79
	Output Variables (SR0090.9+)	80
	Configuration Keys (SR0090.11+)	81
Chapter 8	Upload PDF Phase (SR0100+)	83
	Layout	84
	Representation during Execution (SR0100.1+)	84
	Representation in Navigator (SR0100.4+)	85
	Representation in Sub-report (SR0100.5+)	86
	Business Logic (SR0100.2+)	86
	Phase Mode	87
	Main Path	89
	Process Parameters (SR0100.8+)	91
	Exceptions (SR0100.3+)	96
	System-triggered Exceptions (SR0100.3.2+)	96
	User-triggered Exceptions (SR0100.3.1+)	97

Post-completion Exceptions (SR0100.3.3+).....	98
Information Messages	99
Questions	99
Decisions	99
Error Messages (SR0100.3.6+)	99
Output Variables (SR0100.9+)	100
Configuration Keys (SR0100.11+)	101
Chapter 9 Show URL Phase (SR0120+)	103
Layout	104
Representation during Execution (SR0120.1+)	104
Representation in Navigator (SR0120.4+).....	105
Representation in Sub-report (SR0120.5+)	105
Business Logic (SR0120.2+).....	105
Process Parameters (SR0120.8+)	106
Exceptions (SR0120.3+).....	108
System-triggered Exceptions (SR0120.3.2+).....	109
User-triggered Exceptions.....	109
Post-completion Exceptions	109
Information Messages	109
Questions	109
Decisions	110
Error Messages	110
Output Variables.....	110
Chapter 10 Create Workflow Phase (SR0130+)	111
Layout	112
Representation during Execution (SR0130.1+)	112
Representation in Navigator (SR0130.4+).....	113
Representation in Sub-report (SR0130.5+)	114
Business Logic (SR0130.2+).....	115
Phase Mode	115

Main Path	116
Process Parameters (SR0130.8+)	118
Exceptions (SR0130.3+)	124
System-triggered Exceptions	124
User-triggered Exceptions (SR0130.3.1+)	124
Post-completion Exceptions	125
Information Messages	125
Questions	125
Decisions	125
Error Messages (SR0130.3.6+)	125
Output Variables (SR0130.9+)	127
Configuration Keys (SR0130.11+)	129
Chapter 11 Write Context Data Phase (SR0140+)	131
Layout	131
Representation during Execution (SR0140.1+)	131
Representation in Navigator (SR0140.4+)	135
Representation in Sub-report (SR0140.5+)	135
Business Logic (SR0140.2+)	137
Phase Mode	137
Main Path	138
Process Parameters (SR0140.8+)	141
BigDecimal Value Bundle	145
Boolean Value Bundle	145
Duration Value Bundle	146
Long Value Bundle	146
Measured Value Bundle	147
String Value Bundle	147
Timestamp Value Bundle	148
Exceptions (SR0140.3+)	148
System-triggered Exceptions (SR0140.3.2+)	149
User-triggered Exceptions (SR0140.3.1+)	150

Post-completion Exceptions	151
Information Messages	151
Questions	151
Decisions	151
Error Messages (SR0140.3.6+)	152
Output Variables (SR0140.9+)	153
Chapter 12 Reference Documents	155
Chapter 13 Document Information	157
Approval	157
Version Information	157
Revision History	158
Index	163

-
-
- FT PharmaSuite® 10.01.00 - Functional Requirement Specification EBR Phases
-
-

Figure 1: Get process value during execution	3
Figure 2: Get text value during execution	19
Figure 3: Show instruction text during execution.....	33
Figure 4: Show document during execution	41
Figure 5: Get choice value during execution	49
Figure 6: Upload image during execution - Automatic loading mode.....	64
Figure 7: Upload image during execution - Selection mode.....	64
Figure 8: Upload PDF during execution - Automatic loading mode	84
Figure 9: Upload PDF during execution - Selection mode	84
Figure 10: Show URL during execution	103
Figure 11: Create workflow during execution	111
Figure 12: Write context data during execution	131

-
-
- FT PharmaSuite® 10.01.00 - Functional Requirement Specification EBR Phases
-
-

Introduction

This document details the requirements of the functions implemented by the phases specific to EBR. The phases are executed in the Production Execution Client of PharmaSuite.

Each requirement is composed of a name and a unique identifier (e.g. Instruction (SR0010.8.1)). If a requirement's meaning is for requirement grouping only, the identifier is appended by a plus sign (e.g. Process parameters (SR0010.8+)).

For requirements with **Framework capability** as identifier, see "Functional Requirement Specification Execution Framework" for their unique identifier, [A1] (page 155).

The revision history (page 158) list the changes made to the document with PharmaSuite 10.0 as the comparison baseline. Changes related to a requirement are marked as "Editorial", "Update", "New", or "Deleted", changes to the additional context information are marked as "Context information-related".

Typographical Conventions

This documentation uses typographical conventions to enhance the readability of the information it presents. The following kinds of formatting indicate specific information:

Bold typeface	Designates user interface texts, such as <ul style="list-style-type: none"> ■ window and dialog titles ■ menu functions ■ panel, tab, and button names ■ box labels ■ object properties and their values (e.g. status).
Monospaced typeface	Designates code examples.

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-
- FT PharmaSuite® 10.01.00 - Functional Requirement Specification EBR Phases
-
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Get Process Value Phase (SR0010+)

The **Get process value** phase allows an operator to capture process-related parameters.

Example use cases are:

- **Manual entry of room temperature**
The room temperature must range between 20°C and 22°C. These boundary values can be defined as limits and corresponding limit violations can be tracked as exceptions.
- **Recording of pH values**
The pH value of a material needs to be adjusted to a specified range. When capturing the pH value, the value can be checked against a specified range. Depending on the result, the building block can trigger loops within the recipe to further adjust the pH value.
- **Recording of manually entered weighing values**
The relation between actual quantities and planned quantities is essential for the final product quality. Manually entered weighing values can be checked against three limit ranges (e.g. Warning limit, Control limit, Out of specification limit).

The process value can be entered manually during execution or can be populated as a default value from a previous phase.

The value is checked against configurable limits. The phase supports up to three limit ranges.

The recorded value is stored in the batch record, thereby becoming available for documentation purposes in the sub-report and batch report (page 5).

Anomalies that occur during processing are covered by the phase exception handling (page 14) (e.g. limit violation).

After completion the phase displays the recorded value, both in the Execution Window and the Navigator. Additionally, the Navigator provides access to the post-completion exceptions.

Displayed pressure	
Upper destruction limit	13.0 t
Upper warning limit	10.0 t
Upper attention limit	8.0 t
Lower attention limit	5.5 t
Lower warning limit	5.0 t
Lower destruction limit	4.5 t

Confirm

Figure 1: Get process value during execution

Layout

The phase provides individual layouts for its representation during execution (page 4), in the Navigator (page 5), and in the sub-report (page 5).

Representation during Execution (SR0010.1+)

The representation during execution depends on the phase mode.

Preview mode (SR0010.1.2)

1. <Instruction text> (column 1 and column 2)
(taken from **Instruction (SR0010.8.1)** process parameter (page 8))
2. Box for <actual process value, default value>
(UoM taken from **Value configuration (SR0010.8.2)** process parameter (page 9) and default taken from **Limit definition (SR0010.8.5)** process parameter (page 11))
3. List of configured limits
(taken from **Limit configuration (SR0010.8.4)** process parameter (page 9) and **Limit definition (SR0010.8.5)** process parameter (page 11))
4. **Confirm** button (disabled).

Active mode (SR0010.1.1)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text> (column 1 and column 2)
(taken from **Instruction (SR0010.8.1)** process parameter (page 8))
3. Box for <actual process value, default value><UoM>
(UoM and editable status taken from **Value configuration (SR0010.8.2)** process parameter (page 9) and default taken from **Limit definition (SR0010.8.5)** process parameter (page 11))
4. List of configured limits
(taken from **Limit configuration (SR0010.8.4)** process parameter (page 9) and **Limit definition (SR0010.8.5)** process parameter (page 11))
5. **Confirm** button.

Completed mode (SR0010.1.3)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text> (column 1 and column 2)
(taken from **Instruction (SR0010.8.1)** process parameter (page 8))
3. <Actual value>
(UoM taken from **Value configuration (SR0010.8.2)** process parameter (page 9))
4. List of configured limits
(taken from **Limit configuration (SR0010.8.4)** process parameter (page 9) and
Limit definition (SR0010.8.5) process parameter (page 11))
5. **Confirm** button (completed).

Representation in Navigator (SR0010.4+)

The Navigator provides the following details:

Phase column (Framework capability)

- <Phase name>
- Example:
Read processing value

Information column (SR0010.4.1)

- <Actual value> <UoM>
- Example: 41%

Action column (SR0010.4.2)

- Correct, provides exception to correct the recorded value.

Representation in Sub-report (SR0010.5+)

The sub-report contains the following information:

Common sub-report elements (Framework capability)

- <Start time>
- <Completion time>
- <Unit procedure> / <operation> / <phase>
- <Work center> / <station> / <device> - <phase completion user>

Sub-report elements (SR0010.5.1)

- Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
- Two instruction texts
- Actual value with UoM
- Limit information

Business Logic (SR0010.2+)

The phase implements the following business logic.

Document process value (SR0010.2.1)

- Function: Document a process value
- Trigger: Phase becomes active
- Postcondition: Process value is documented

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0010.1.1) layout (page 4).
	20	<ul style="list-style-type: none"> ■ If no default value is set, operator enters process value. ■ If a default value is set and the default value is editable, operator accepts default value or enters process value. ■ If a default value is set and the default value is not editable, operator accepts default value.
Cursor leaves box	30	Phase triggers Validate process value (SR0010.2.2) function (page 6).

Validate process value (SR0010.2.2)

- Function: Validate a process value
- Trigger: Cursor leaves the box that holds the actual process value
- Postcondition: Process value is validated

Step	#	Description
Validation	10	Phase checks the value against the settings of the Limit definition (SR0010.8.5) process parameter (page 11). Limits are checked in the following order: LLL/HHH » LL/HH » L/H.

Step	#	Description
	10.1	If the check is violated, phase creates the Limit violation (SR0010.3.2.1) system-triggered exception (page 14).
	10.2	If the check is not violated, phase is completed.

Process Parameters (SR0010.8+)

The following process parameters define the behavior of the phase.

INSTRUCTION TABLE-SPECIFIC PARAMETERS

Instruction table definition (Framework capability)

Attribute	Type	Comment
Table layout	Choice list	Defines the layout of the instruction table holding the instruction texts. Available settings: 1 column, 2 columns, 3 columns, 4 columns, 5 columns . Default setting: 1 column .
First column narrow	Boolean	Defines if the first column of the table shall be narrow.
Show all borders	Boolean	Defines if the borders of the table shall be visible.

Instruction table text (Framework capability)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed in a column. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	
Column 3	HTML text	
Column 4	HTML text	
Column 5	HTML text	

INSTRUCTION LINK-SPECIFIC PARAMETERS

Instruction text with links (Framework capability)

Attribute	Type	Comment
Instruction text	HTML text	<p>Instruction text to be displayed.</p> <p>For any text enclosed in curly brackets you can define a hyperlink with the Instruction link definition process parameter (page 8).</p> <p>Example: Refer to {SOP1270} for guidance.</p> <p>Maximum length is 2000 characters (including HTML tags).</p>

Instruction link definition (Framework capability)

Attribute	Type	Comment
Link text	Text	<p>Text to be used as link.</p> <p>For any text enclosed in curly brackets within the instruction text you can define a link with the Link URL attribute.</p> <p>Including the brackets in the link text is optional.</p> <p>Maximum length is 80 characters.</p>
Link URL	Text	<p>URL of the file to be displayed. The link opens the external application assigned to the file type by the operating system.</p> <p>Maximum length is 256 characters.</p>

BASIC PARAMETERS

Instruction (SR0010.8.1)

Attribute	Type	Comment
Column 1	HTML text	<p>Instruction text to be displayed.</p> <p>Restriction: Maximum length is 2000 characters (including HTML tags).</p>
Column 2	HTML text	
Column 3	HTML text	Not used.

PROCESS VALUE PARAMETERS

Value configuration (SR0010.8.2)

Attribute	Type	Comment
UoM	Unit of measure	Must match a unit of measure available within PharmaSuite. See also attributes of the Limit definition (SR0010.8.5) process parameter (page 11).
Value editable	Flag	Controls if the displayed value is editable during execution. Default setting: Yes

TIP

Limit values with more than 7 digits are truncated at the end in the Phase Preview of Recipe and Workflow Designer and Production Execution Client.

CONFIGURATION OF SYSTEM-TRIGGERED EXCEPTIONS

Limit configuration (SR0010.8.4)

During execution, the actual process value is checked against the configured limits when the cursor leaves the box that holds the actual process value. If the checks are activated for the available limit ranges, the checks are performed in the following order:

1. LLL-HHH
2. LL-HH
3. L-H.

L-H configuration

Attribute	Type	Comment
Enabled	Flag	Controls if a check is performed. If so, ensure that the L limit and H limit attributes of the Limit definition process parameter (page 11) are set.
Display	Flag	Controls if the limit range is displayed during execution.
Lower limit name	Text	Defines the name of the lower limit displayed during execution.
Upper limit name	Text	Defines the name of the upper limit displayed during execution.

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 2000 characters.

LL-HH configuration

Attribute	Type	Comment
Enabled	Flag	Controls if a check is performed. If so, ensure that the LL limit and HH limit attributes of the Limit definition process parameter (page 11) are set.
Display	Flag	Controls if the limit range is displayed during execution if the check is enabled.
Lower limit name	Text	Defines the name of the lower limit displayed during execution.
Upper limit name	Text	Defines the name of the upper limit displayed during execution.
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 2000 characters.

LLL-HHH configuration

Attribute	Type	Comment
Enabled	Flag	Controls if a check is performed. If so, ensure that the LLL limit and HHH limit attributes of the Limit definition process parameter (page 11) are set.
Display	Flag	Controls if the limit range is displayed during execution if the check is enabled.
Lower limit name	Text	Defines the name of the lower limit displayed during execution.
Upper limit name	Text	Defines the name of the upper limit displayed during execution.
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 2000 characters.

See also **Limit violation (SR0010.3.2.1)** system-triggered exception (page 14).

Limit definition (SR0010.8.5)

The following rules apply to the attributes:

- The unit of measure must be of the same system of measurement as the one used for the **Value configuration** process parameter (page 9) (e.g. weight: mg, kg, pound; length: mm, m, inch).
- LLL limit < LL limit < L limit < Reference value < H limit < HH limit < HHH limit

Attribute	Type	Comment
LLL limit	MeasuredValue	Define the values of the lower limits (including the values themselves).
LL limit	MeasuredValue	

Attribute	Type	Comment
L limit	MeasuredValue	Limit values with more than 7 digits are truncated at the end in the Phase Preview of Recipe and Workflow Designer and Production Execution Client.
Reference value	MeasuredValue	Defines the reference value in case of a limit range of the Relative limit type.
H limit	MeasuredValue	Define the values of the upper limits (including the values themselves). Limit values with more than 7 digits are truncated at the end in the Phase Preview of Recipe and Workflow Designer and Production Execution Client.
HH limit	MeasuredValue	
HHH limit	MeasuredValue	
L-H type	Choice list	Define the type of the limit range (Absolute , Relative). During execution, the phase always calculates and displays absolute values. Default setting: Absolute .
LL-HH type	Choice list	
LLL-HHH type	Choice list	
Default value	MeasuredValue	Defines the default value.

The following limit types are available: **Absolute** and **Relative**. The limits are calculated according to the following definitions.

Limit	Absolute value definition	Relative value definition
HHH limit	HHH	Reference value + HHH
HH limit	HH	Reference value + HH
H limit	H	Reference value + H
L limit	L	Reference value - L
LL limit	LL	Reference value - LL
LLL limit	LLL	Reference value - LLL

CONFIGURATION OF USER-TRIGGERED EXCEPTIONS

Override value (SR0010.8.7)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 2000 characters.

See also **Override value (SR0010.3.1.1)** user-triggered exception (page 15).

CONFIGURATION OF POST-COMPLETION EXCEPTIONS

Correct value (SR0010.8.6)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 2000 characters.

See also **Correct value (SR0010.3.3.1)** post-completion exception (page 16).

Exceptions (SR0010.3+)

The phase supports user-defined, user-triggered (page 15), system-triggered (page 14), and post-completion exceptions (page 16) and their configuration by means of process parameters (page 7).

User-defined exceptions cannot be configured by process parameters since they are provided by the framework and independent of phases.

System-triggered Exceptions (SR0010.3.2+)

A system-triggered exception is represented in a message dialog along with an **Exception** button, in the Exception Window as the read-only description of the exception, and in the batch report.

The following system-triggered exceptions are available.

Limit violation (SR0010.3.2.1)

Representation of the exception:

- <Exception text>
(taken from **Limit configuration (SR0010.8.4)** process parameter (page 9))
<Limit name>: <expected value>
Actual value: <process value>
- Example:
Limit violation confirmed.
Lower warning: 300 rpm.
Actual value: 200 rpm

Limit violation - Completion (SR0010.3.2.2)

- Trigger: Process value is not within the defined limits
- Postcondition: N/A

Step	#	Description
Operator triggers exception	10	Phase records the exception.
	20	In case of a limit violation, the phase can be completed if all of the following applies: <ul style="list-style-type: none"> ■ The respective exception was recorded. ■ The value has not been changed again after the exception was recorded.

User-triggered Exceptions (SR0010.3.1+)

A user-triggered exception is represented in the list of available user-triggered exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following user-triggered exceptions are available.

Override value (SR0010.3.1.1)

The **Override value** exception allows an operator to override the value in case it is set to **read-only** (**Value editable** attribute of the **Value configuration (SR0010.8.2)** process parameter (page 9)).

Representation during exception handling:

- Instruction:
Please enter new value.
<Old value with unit of measure>
Box for new value (with unit of measure)
Confirm button.
- <Exception text>
(taken from **Override value (SR0010.8.7)** process parameter (page 13))
Old value: <old value> <UoM>
New value: <new value> <UoM>
- Example:
Speed value corrected.
Old value: 20 rpm
New value: 25 rpm

Override value - Logic (SR0010.3.1.1.1)

- Trigger: Exception is selected
- Postcondition: Value is overridden

Step	#	Description
Operator triggers exception	10	Phase displays Exception Window.
	20	Operator enters new value.
Operator confirms exception	30	Phase shows exception description to be signed according to Override value (SR0010.8.7) process parameter (page 13).
Operator signs exception	40	Phase records the exception.

Post-completion Exceptions (SR0010.3.3+)

A post-completion exception is accessible via the Navigator and represented in the list of available post-completion exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following post-completion exceptions are available.

Correct value (SR0010.3.3.1)

The **Correct value** exception allows an operator to correct the recorded value from the Navigator after the completion of the phase.

TIP

A recorded value could be used within branching. The correction of a value **does not influence** already processed branching decisions.

Representation of the exception:

- Instruction:
Please enter new value.
<Old value with unit of measure>
Box for new value (with unit of measure)
Confirm button.
- <Exception text>
(taken from **Correct value (SR0010.8.6)** process parameter (page 13))
- Example:
Speed value corrected.

Correct value - Validation (SR0010.3.3.2)

- Trigger: Phase is completed
- Postcondition: Value is corrected

Step	#	Description
Operator triggers action	10	Phase displays Exception Window.
	20	Operator enters corrected value.
Cursor leaves box	30	Phase checks the value against the settings of the Limit definition (SR0010.8.5) process parameter (page 11).
	30.1	See Correct value - Logic 2 (SR0010.3.3.3) .
	30.2	If the limit is not violated, the corrected value is documented.

Correct value - Combined exception (SR0010.3.3.3)

- Trigger: Limit is violated
- Postcondition: Post-completion exception is recorded

Step	#	Description
Limit is violated	10	If the limit is violated, only one exception (post-completion exception) is recorded including information about all related exceptions. The highest risk assessment of all related exceptions and its related signature privilege apply.

Information Messages

There are no information messages available.

Questions

There are no questions available.

Decisions

There are no decisions available.

Error Messages

There are no error messages available.

Output Variables (SR0010.9+)

The following output variables are available to reference the phase's output.

Instance count (Framework capability)

- Data type: Long
- Usage: The output variable provides the count of the number of instances the phase has been processed, for example in a loop. The count is also increased when the phase is skipped from an operator's perspective, since the phase is still executed, but as a hidden phase.
The count variable of a phase that has not been executed provides 0 as output value.

Start time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the start time of the phase.

Completion time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the completion time of the phase.

Identifier (Framework capability)

- Data type: String
- Usage: The output variable provides the identifier of the phase.

Value (SR0010.9.4)

- Data type: MeasuredValue
- Usage: The output variable provides the complete process value as a **MeasuredValue** object.

Unit of measure (SR0010.9.3)

- Data type: String
- Usage: The output variable provides the unit of measure of the process value.

Get Text Value Phase (SR0020+)

The **Get text value** phase allows an operator to record text (a string) during execution.

Example use cases are:

- Recording of visual appearance during product test
During the inspection of a product sample, the visual appearance of the sample can be documented (e.g. transparent, cloudy).
- Checking the expected representation of a recipe at an equipment unit
On the display of a piece of equipment, the machine recipe is visualized. When setting up the equipment unit, the quality of the recipe's representation can be checked against an expected string (e.g. difficult to read).
- Recording of production resources
Operator documents which tool was used when entering the property tag.

The text can be entered manually during execution or can be populated as a default text from a previous phase.

The text is checked against configurable text.

The recorded value is stored in the batch record, thereby becoming available for documentation purposes in the sub-report and batch report (page 21).

Anomalies that occur during processing are covered by the phase exception handling (page 27) (e.g. limit violation).

After completion the phase displays the recorded value, both in the Execution Window and the Navigator. Additionally, the Navigator provides access to the post-completion exception.



Figure 2: Get text value during execution

Layout

The phase provides individual layouts for its representation during execution (page 20), in the Navigator (page 21), and in the sub-report (page 21).

Representation during Execution (SR0020.1+)

The representation during execution depends on the phase mode.

Preview mode (SR0020.1.2)

1. <Instruction text> (column 1 and column 2)
(taken from **Instruction (SR0020.8.1)** process parameter (page 24))
2. Box for <actual text value, default value>
(Default taken from **Expected value definition (SR0020.8.5)** process parameter (page 25))
3. Configured expected value
(taken from **Expected value configuration (SR0020.8.4)** process parameter (page 25) and **Expected value definition (SR0020.8.5)** process parameter (page 25))
4. **Confirm** button (completed).

Active mode (SR0020.1.1)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text> (column 1 and column 2)
(taken from **Instruction (SR0020.8.1)** process parameter (page 24))
3. Box for <actual text value, default value>
(Default taken from **Expected value definition (SR0020.8.5)** process parameter (page 25))
4. Configured expected value
(taken from **Expected value configuration (SR0020.8.4)** process parameter (page 25) and **Expected value definition (SR0020.8.5)** process parameter (page 25))
5. **Confirm** button.

Completed mode (SR0020.1.3)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text> (column 1 and column 2)
(taken from **Instruction (SR0020.8.1)** process parameter (page 24))
3. <Actual value>
4. Configured expected value
(taken from **Expected value configuration (SR0020.8.4)** process parameter (page 25) and **Expected value definition (SR0020.8.5)** process parameter (page 25))
5. **Confirm** button (completed).

Representation in Navigator (SR0020.4+)

The Navigator provides the following details:

Phase column (Framework capability)

- <Phase name>
- Example:
Read processing value

Information column (SR0020.4.1)

- <Actual value>
- Example: Not OK

Action column (SR0020.4.2)

- Correct, provides exception to correct the recorded value.

Representation in Sub-report (SR0020.5+)

The sub-report contains the following information:

Common sub-report elements (Framework capability)

- <Start time>
- <Completion time>
- <Unit procedure> / <operation> / <phase>
- <Work center> / <station> / <device> - <phase completion user>

Sub-report elements (SR0020.5.1)

- Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
- Two instruction texts
- Actual value
- Expected value information

Business Logic (SR0020.2+)

The phase implements the following business logic.

Document text value (SR0020.2.1)

- Function: Document a text value
- Trigger: Phase becomes active
- Postcondition: Text value is documented

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0020.1.1) layout (page 20).
	20	<ul style="list-style-type: none"> ■ If no default value is set, operator enters text value. ■ If a default value is set and the default value is editable, operator accepts default value or enters text value. ■ If a default value is set and the default value is not editable, operator accepts default value.
Cursor leaves box	30	Phase triggers Validate text value (SR0020.2.2) function (page 22).

Validate text value (SR0020.2.2)

- Function: Validate a text value
- Trigger: Cursor leaves the box that holds the actual text value
- Postcondition: Text value is validated

Step	#	Description
Validation	10	Phase checks the value against the settings of the Expected value definition (SR0020.8.5) process parameter (page 25).
	10.1	If the check is violated, phase creates the Violation of expected value (SR0020.3.2.1) system-triggered exception (page 27).

Step	#	Description
	10.2	If the check is not violated, phase is completed.

Process Parameters (SR0020.8+)

The following process parameters define the behavior of the phase.

INSTRUCTION TABLE-SPECIFIC PARAMETERS

Instruction table definition (Framework capability)

Attribute	Type	Comment
Table layout	Choice list	Defines the layout of the instruction table holding the instruction texts. Available settings: 1 column, 2 columns, 3 columns, 4 columns, 5 columns. Default setting: 1 column.
First column narrow	Boolean	Defines if the first column of the table shall be narrow.
Show all borders	Boolean	Defines if the borders of the table shall be visible.

Instruction table text (Framework capability)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed in a column. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	
Column 3	HTML text	
Column 4	HTML text	
Column 5	HTML text	

INSTRUCTION LINK-SPECIFIC PARAMETERS

Instruction text with links (Framework capability)

Attribute	Type	Comment
Instruction text	HTML text	<p>Instruction text to be displayed.</p> <p>For any text enclosed in curly brackets you can define a hyperlink with the Instruction link definition process parameter (page 24).</p> <p>Example: Refer to {SOP1270} for guidance.</p> <p>Maximum length is 2000 characters (including HTML tags).</p>

Instruction link definition (Framework capability)

Attribute	Type	Comment
Link text	Text	<p>Text to be used as link.</p> <p>For any text enclosed in curly brackets within the instruction text you can define a link with the Link URL attribute.</p> <p>Including the brackets in the link text is optional.</p> <p>Maximum length is 80 characters.</p>
Link URL	Text	<p>URL of the file to be displayed. The link opens the external application assigned to the file type by the operating system.</p> <p>Maximum length is 256 characters.</p>

BASIC PARAMETERS

Instruction (SR0020.8.1)

Attribute	Type	Comment
Column 1	HTML text	<p>Instruction text to be displayed.</p> <p>Restriction: Maximum length is 2000 characters (including HTML tags).</p>
Column 2	HTML text	
Column 3	HTML text	Not used.

CONFIGURATION OF SYSTEM-TRIGGERED EXCEPTIONS

Expected value configuration (SR0020.8.4)

During execution, the actual text value is checked against the configured limits when the cursor leaves the box that holds the actual process value.

Attribute	Type	Comment
Enabled	Flag	Controls if a check is performed. If so, ensure that the Expected value attribute of the Expected value definition (SR0020.8.5) process parameter (page 25) is set.
Display	Flag	Controls if an expected value is displayed during execution.
Expected value name	Text	Defines the name of the expected value.
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 2000 characters.

See also **Violation of expected value (SR0020.3.2.1)** system-triggered exception (page 27).

Expected value definition (SR0020.8.5)

Attribute	Type	Comment
Expected value	Text	Defines the expected value. Maximum length is 256 characters.
Default value	Text	Defines the default value. Maximum length is 256 characters.
Value editable	Flag	Controls if the displayed value is editable during execution. Default setting: Yes

CONFIGURATION OF USER-TRIGGERED EXCEPTIONS

Override value (SR0020.8.7)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 2000 characters.

See also **Override value (SR0020.3.1.1)** user-triggered exception (page 28).

CONFIGURATION OF POST-COMPLETION EXCEPTIONS

Correct value (SR0020.8.6)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 2000 characters.

See also **Correct value (SR0020.3.3.1)** post-completion exception (page 29).

Exceptions (SR0020.3+)

The phase supports user-defined, user-triggered (page 28), system-triggered (page 27), and post-completion exceptions (page 29) and their configuration by means of process parameters (page 23).

User-defined exceptions cannot be configured by process parameters since they are provided by the framework and independent of phases.

System-triggered Exceptions (SR0020.3.2+)

A system-triggered exception is represented in a message dialog along with an **Exception** button, in the Exception Window as the read-only description of the exception, and in the batch report.

The following system-triggered exceptions are available.

Violation of expected value (SR0020.3.2.1)

Representation of the exception:

- <Exception text>
(taken from **Expected value configuration (SR0020.8.4)** process parameter (page 25))
Expected value: <expected value>
Actual value: <text value>
- Example:
Expected value violation confirmed.
Expected value: OK
Actual value: Not Ok

Violation of expected value - Completion (SR0020.3.2.2)

- Trigger: Text value deviates from the defined expected value
- Postcondition: N/A

Step	#	Description
Operator triggers exception	10	Phase records the exception.
	20	<p>In case of a violation of an expected value, the phase can be completed if all of the following applies:</p> <ul style="list-style-type: none"> ■ The respective exception was recorded. ■ The value has not been changed again after the exception was recorded.

User-triggered Exceptions (SR0020.3.1+)

A user-triggered exception is represented in the list of available user-triggered exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following user-triggered exceptions are available.

Override value (SR0020.3.1.1)

The **Override value** exception allows an operator to override the value in case it is set to **read-only** (Value editable attribute of the **Expected value definition (SR0020.8.5)** process parameter (page 25)).

Representation during exception handling:

- Instruction:
Please enter new value.
<Old value>
Box for new value
Confirm button.
- <Exception text>
(taken from **Override value (SR0020.8.7)** process parameter (page 26))
Old value: <old value>
New value: <new value>
- Example:
Used recipe number corrected.
Old value: R2011_v1
New value: R2011_v2

Override value - Logic (SR0020.3.1.1.1)

- Trigger: Exception is selected
- Postcondition: Value is overridden

Step	#	Description
Operator triggers exception	10	Phase displays Exception Window.
	20	Operator enters new value.
Operator confirms exception	30	Phase shows exception description to be signed according to Override value (SR0020.8.7) process parameter (page 26).
Operator signs exception	40	Phase records the exception.

Post-completion Exceptions (SR0020.3.3+)

A post-completion exception is accessible via the Navigator and represented in the list of available post-completion exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following post-completion exceptions are available.

Correct value (SR0020.3.3.1)

The **Correct value** exception allows an operator to correct the recorded value from the Navigator after the completion of the phase.

TIP

A recorded value could be used within branching. The correction of a value **does not influence** already processed branching decisions.

Representation of the exception:

- Instruction:
Please enter new value.
<Old value>
Box for new value
Confirm button.
- <Exception text>
(taken from **Correct value (SR0020.8.6)** process parameter (page 26))
- Example:
Check result corrected.

Correct value - Validation (SR0020.3.3.2)

- Trigger: Phase is completed
- Postcondition: Value is corrected

Step	#	Description
Operator triggers action	10	Phase displays Exception Window.
	20	Operator enters corrected value.
Cursor leaves box	30	Phase checks the value against the settings of the Expected value definition (SR0020.8.5) process parameter (page 25).
	30.1	See Correct value - Logic 2 (SR0020.3.3.3) .
	30.2	If the limit is not violated, the corrected value is documented.

Correct value - Combined exception (SR0020.3.3.3)

- Trigger: Limit is violated
- Postcondition: Post-completion exception is recorded

Step	#	Description
Limit is violated	10	If the limit is violated, only one exception (post-completion exception) is recorded including information about all related exceptions. The highest risk assessment of all related exceptions and its related signature privilege apply.

Information Messages

There are no information messages available.

Questions

There are no questions available.

Decisions

There are no decisions available.

Error Messages

There are no error messages available.

Output Variables (SR0020.9+)

The following output variables are available to reference the phase's output.

Instance count (Framework capability)

- Data type: Long
- Usage: The output variable provides the count of the number of instances the phase has been processed, for example in a loop. The count is also increased when the phase is skipped from an operator's perspective, since the phase is still executed, but as a hidden phase.
The count variable of a phase that has not been executed provides 0 as output value.

Start time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the start time of the phase.

Completion time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the completion time of the phase.

Identifier (Framework capability)

- Data type: String
- Usage: The output variable provides the identifier of the phase.

Value (SR0020.9.2)

- Data type: String
- Usage: The output variable provides the text value entered during execution as string of characters.

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Show Instruction Text (SR0030+)

The **Show instruction text** phase allows to display a specific instruction related to the process step the operator is executing.

Example use cases are:

- Description of how to assemble equipment.
- Description of how to sample the product.
- Information about specifics of a process activity.

The instruction text is stored in the batch record, thereby becoming available for documentation purposes in the sub-report and batch report (page 34).

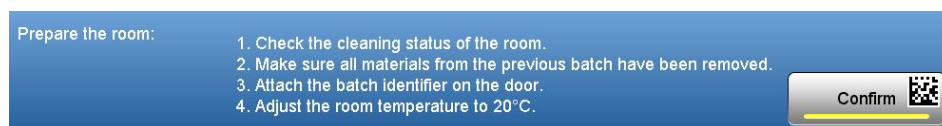


Figure 3: Show instruction text during execution

Layout

The phase provides individual layouts for its representation during execution (page 33), in the Navigator (page 34), and in the sub-report (page 34).

Representation during Execution (SR0030.1+)

The representation during execution depends on the phase mode.

Preview mode (SR0030.1.2)

1. <Instruction text> (column 1, column 2, and column 3)
(taken from **Instruction (SR0030.8.1)** process parameter (page 37) and the **Layout (SR0030.8.2)** process parameter (page 37))
2. **Confirm** button (disabled).

Active mode (SR0030.1.1)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)

2. <Instruction text> (column 1, column 2, and column 3)
(taken from **Instruction (SR0030.8.1)** process parameter (page 37) and the **Layout (SR0030.8.2)** process parameter (page 37))
3. **Confirm** button.

Completed mode (SR0030.1.3)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text> (column 1, column 2, and column 3)
(taken from **Instruction (SR0030.8.1)** process parameter (page 37) and the **Layout (SR0030.8.2)** process parameter (page 37))
3. **Confirm** button (completed).

Representation in Navigator (SR0030.4+)

The Navigator provides the following details:

Phase column (Framework capability)

- <Phase name>
- Example:
Mix inputs

Information column (SR0030.4.1)

- <Empty>

Action column

- There are no actions available.

Representation in Sub-report (SR0030.5+)

The sub-report contains the following information:

Common sub-report elements (Framework capability)

- <Start time>
- <Completion time>
- <Unit procedure> / <operation> / <phase>
- <Work center> / <station> / <device> - <phase completion user>

Sub-report elements (SR0030.5.1)

- Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
- Up to three instruction texts

Business Logic (SR0030.2+)

The phase implements the following business logic.

Display instruction text (SR0030.2.1)

- Function: Display an instruction text
- Trigger: Phase becomes active
- Postcondition: Instruction text was displayed

Step	#	Description
Phase activation	10	Phase displays instruction text.

Process Parameters (SR0030.8+)

The following process parameters define the behavior of the phase.

INSTRUCTION TABLE-SPECIFIC PARAMETERS

Instruction table definition (Framework capability)

Attribute	Type	Comment
Table layout	Choice list	Defines the layout of the instruction table holding the instruction texts. Available settings: 1 column, 2 columns, 3 columns, 4 columns, 5 columns . Default setting: 1 column .
First column narrow	Boolean	Defines if the first column of the table shall be narrow.
Show all borders	Boolean	Defines if the borders of the table shall be visible.

Instruction table text (Framework capability)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed in a column. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	
Column 3	HTML text	
Column 4	HTML text	
Column 5	HTML text	

INSTRUCTION LINK-SPECIFIC PARAMETERS

Instruction text with links (Framework capability)

Attribute	Type	Comment
Instruction text	HTML text	Instruction text to be displayed. For any text enclosed in curly brackets you can define a hyperlink with the Instruction link definition process parameter (page 36). Example: Refer to {SOP1270} for guidance. Maximum length is 2000 characters (including HTML tags).

Instruction link definition (Framework capability)

Attribute	Type	Comment
Link text	Text	Text to be used as link. For any text enclosed in curly brackets within the instruction text you can define a link with the Link URL attribute. Including the brackets in the link text is optional. Maximum length is 80 characters.

Attribute	Type	Comment
Link URL	Text	URL of the file to be displayed. The link opens the external application assigned to the file type by the operating system. Maximum length is 256 characters.

BASIC PARAMETERS

Instruction (SR0030.8.1)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed. Restriction: Maximum length is 2000 characters (including HTML tags). The layout settings define which columns will be visible (see Type attribute of the Layout (SR0030.8.2) process parameter (page 37)).
Column 2	HTML text	
Column 3	HTML text	

Layout (SR0030.8.2)

Attribute	Type	Comment
Type	Choice list	Defines the layout of the column(s) holding the instruction texts: 1 column, 2 columns (with narrow first column and wide second column), 2 columns (with wide first column and narrow second column), or 3 columns). Default setting: 1 column .

Exceptions

The phase supports user-defined, user-triggered (page 38), system-triggered (page 38), and post-completion exceptions (page 38) and their configuration by means of process parameters (page 35).

User-defined exceptions cannot be configured by process parameters since they are provided by the framework and independent of phases.

System-triggered Exceptions

There are no system-triggered exceptions available.

User-triggered Exceptions

There are no user-triggered exceptions available.

Post-completion Exceptions

There are no post-completion exceptions available.

Information Messages

There are no information messages available.

Questions

There are no questions available.

Decisions

There are no decisions available.

Error Messages

There are no error messages available.

Output Variables

The following output variables are available to reference the phase's output.

Instance count (Framework capability)

- Data type: Long
- Usage: The output variable provides the count of the number of instances the phase has been processed, for example in a loop. The count is also increased when the phase is skipped from an operator's perspective, since the phase is still executed, but as a hidden phase.
The count variable of a phase that has not been executed provides 0 as output value.

Start time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the start time of the phase.

Completion time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the completion time of the phase.

Identifier (Framework capability)

- Data type: String
- Usage: The output variable provides the identifier of the phase.

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Show Document (SR0040+)

The **Show document** phase allows to display a variety of documents.

Example use cases are:

- Display an SOP
An SOP is stored within a central DMS. This very SOP can be displayed to the operator during execution.
- Show an instruction video
The instruction of a GMP-critical process step is available as a video. The video can be shown during execution.

The name of the work instruction (document) and the instruction text are stored in the batch record, thereby becoming available for documentation purposes in the sub-report and batch report (page 43).

The name of the displayed document is shown on the detail information button in the Navigator (e.g. SOP).

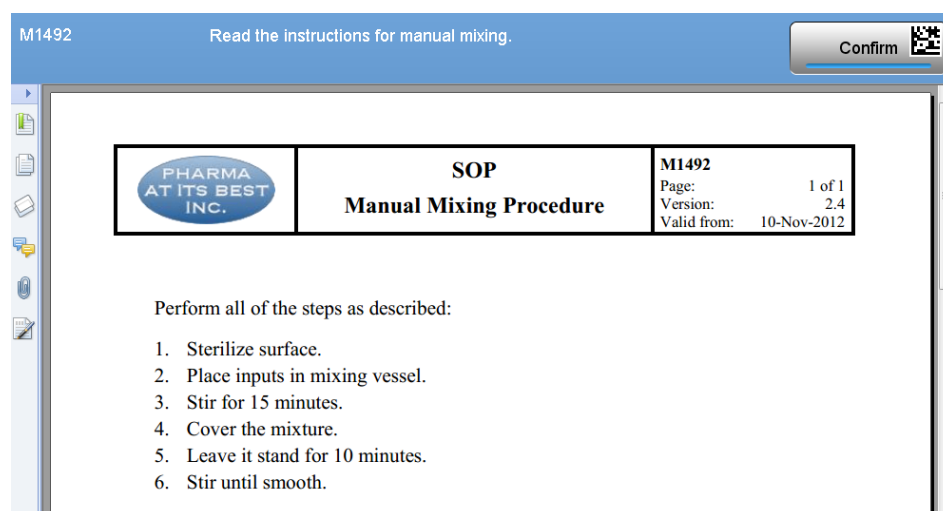


Figure 4: Show document during execution

Layout

The phase provides individual layouts for its representation during execution (page 42), in the Navigator (page 43), and in the sub-report (page 43).

Representation during Execution (SR0040.1+)

The representation during execution depends on the phase mode.

Preview mode (SR0040.1.2)

1. <Name of the work instruction>
(taken from **Document (SR0040.8.2)** process parameter (page 46))
2. <Instruction text>
(taken from **Instruction (SR0040.8.1)** process parameter (page 46))
3. **Confirm** button (disabled).

Active mode (SR0040.1.1)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Name of the work instruction>
(taken from **Document (SR0040.8.2)** process parameter (page 46))
3. <Instruction text>
(taken from **Instruction (SR0040.8.1)** process parameter (page 46))
4. <Work instruction>, in an HTML container
5. **Confirm** button.

Completed mode (SR0040.1.3)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Name of the work instruction>
(taken from **Document (SR0040.8.2)** process parameter (page 46))
3. <Instruction text>
(taken from **Instruction (SR0040.8.1)** process parameter (page 46))
4. **Confirm** button (completed).

Representation in Navigator (SR0040.4+)

The Navigator provides the following details:

Phase column (Framework capability)

- <Phase name>
- Example:
Mix inputs

Information column (SR0040.4.1)

- <Name of the work instruction>
- Example: SOP

Action column

- There are no actions available.

Representation in Sub-report (SR0040.5+)

The sub-report contains the following information:

Common sub-report elements (Framework capability)

- <Start time>
- <Completion time>
- <Unit procedure> / <operation> / <phase>
- <Work center> / <station> / <device> - <phase completion user>

Sub-report elements (SR0040.5.1)

- Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
- Name of the work instruction
- Instruction text

Business Logic (SR0040.2+)

The phase implements the following business logic.

Display document (SR0040.2.1)

- Function: Display a document
- Trigger: Phase becomes active
- Postcondition: Document was displayed

Step	#	Description
Phase activation	10	Phase displays document.

Process Parameters (SR0040.8+)

The following process parameters define the behavior of the phase.

INSTRUCTION TABLE-SPECIFIC PARAMETERS

Instruction table definition (Framework capability)

Attribute	Type	Comment
Table layout	Choice list	Defines the layout of the instruction table holding the instruction texts. Available settings: 1 column, 2 columns, 3 columns, 4 columns, 5 columns. Default setting: 1 column.
First column narrow	Boolean	Defines if the first column of the table shall be narrow.
Show all borders	Boolean	Defines if the borders of the table shall be visible.

Instruction table text (Framework capability)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed in a column. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	
Column 3	HTML text	
Column 4	HTML text	
Column 5	HTML text	

INSTRUCTION LINK-SPECIFIC PARAMETERS

Instruction text with links (Framework capability)

Attribute	Type	Comment
Instruction text	HTML text	Instruction text to be displayed. For any text enclosed in curly brackets you can define a hyperlink with the Instruction link definition process parameter (page 45). Example: Refer to {SOP1270} for guidance. Maximum length is 2000 characters (including HTML tags).

Instruction link definition (Framework capability)

Attribute	Type	Comment
Link text	Text	Text to be used as link. For any text enclosed in curly brackets within the instruction text you can define a link with the Link URL attribute. Including the brackets in the link text is optional. Maximum length is 80 characters.

Attribute	Type	Comment
Link URL	Text	URL of the file to be displayed. The link opens the external application assigned to the file type by the operating system. Maximum length is 256 characters.

BASIC PARAMETERS

Instruction (SR0040.8.1)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	Not used.
Column 3	HTML text	

Document (SR0040.8.2)

Attribute	Type	Comment
Work instruction	Text	Name of a FactoryTalk ProductionCentre work instruction object. The document will be shown within an HTML container.

Exceptions

The phase supports user-defined, user-triggered (page 47), system-triggered (page 46), and post-completion exceptions (page 47) and their configuration by means of process parameters (page 44).

User-defined exceptions cannot be configured by process parameters since they are provided by the framework and independent of phases.

System-triggered Exceptions

There are no system-triggered exceptions available.

User-triggered Exceptions

There are no user-triggered exceptions available.

Post-completion Exceptions

There are no post-completion exceptions available.

Information Messages

There are no information messages available.

Questions

There are no questions available.

Decisions

There are no decisions available.

Error Messages

There are no error messages available.

Output Variables

The following output variables are available to reference the phase's output.

Instance count (Framework capability)

- Data type: Long
- Usage: The output variable provides the count of the number of instances the phase has been processed, for example in a loop. The count is also increased when the phase is skipped from an operator's perspective, since the phase is still executed, but as a hidden phase.
The count variable of a phase that has not been executed provides 0 as output value.

Start time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the start time of the phase.

Completion time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the completion time of the phase.

Identifier (Framework capability)

- Data type: String
- Usage: The output variable provides the identifier of the phase.

Get Choice Value Phase (SR0080+)

The **Get choice value** phase allows an operator to record a choice from a pre-defined list of options.

Example use cases are:

- Recording of visual appearance during product test
During the inspection of a product sample, the visual appearance of the sample can be selected from a pre-defined list (e.g. Transparent, Cloudy, Dark).
- Recording of production resources from a pre-defined list with a preset default option
Operator documents which tool was used when entering the property tag.
- Recording of an operator decision
Operator documents with **Yes** or **No** whether a certain precondition applies. The operator decision determines which of the two alternative subsequent process steps of a selection branch will become active.

The selected option is checked against configurable options.

The recorded value is stored in the batch record, thereby becoming available for documentation purposes in the sub-report and batch report (page 51).

Anomalies that occur during processing are covered by the phase exception handling (page 57) (e.g. deviation).

After completion the phase displays the selected option in the Execution Window. The Navigator displays the selected option and provides access to the post-completion exception.

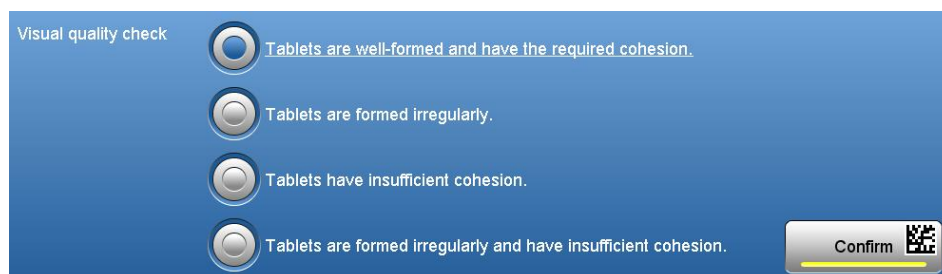


Figure 5: Get choice value during execution

Layout

The phase provides individual layouts for its representation during execution (page 50), in the Navigator (page 51), and in the sub-report (page 51).

Representation during Execution (SR0080.1+)

The representation during execution depends on the phase mode.

Preview mode (SR0080.1.1)

1. <Instruction text>
(taken from **Instruction (SR0080.8.1)** process parameter (page 55))
2. List of options
(taken from **List of options (SR0080.8.2)** process parameter (page 55))
In case of configuration errors, phase displays **Invalid expected value configuration (SR0080.3.6.1)** error message (page 60), **Invalid default value configuration (SR0080.3.6.2)** error message (page 60), or **Invalid choice item configuration (SR0080.3.6.3)** error message (page 61).
3. **Confirm** button (disabled).

Active mode (SR0080.1.2)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0080.8.1)** process parameter (page 55))
3. List of options
(taken from **List of options (SR0080.8.2)** process parameter (page 55))
In case of configuration errors, phase displays **Invalid expected value configuration (SR0080.3.6.1)** error message (page 60), **Invalid default value configuration (SR0080.3.6.2)** error message (page 60), or **Invalid choice item configuration (SR0080.3.6.3)** error message (page 61).
4. **Confirm** button.

Completed mode (SR0080.1.3)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0080.8.1)** process parameter (page 55))
3. Selected option
4. **Confirm** button (completed).

Representation in Navigator (SR0080.4+)

The Navigator provides the following details:

Phase column (Framework capability)

- <Phase name>
 - Example:
Get visual appearance

Information column (SR0080.4.1)

- <Selected option>
 - Example: Initially cloudy

Action column (SR0080.4.2)

- Correct, provides exception to correct the selected option.

Representation in Sub-report (SR0080.5+)

The sub-report contains the following information:

Common sub-report elements (Framework capability)

- <Start time>
- <Completion time>
- <Unit procedure> / <operation> / <phase>
- <Work center> / <station> / <device> - <phase completion user>

Sub-report elements (SR0080.5.1)

- Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
- Instruction text
- List of options
 - Selected
 - Expected
 - Key
 - Text

Business Logic (SR0080.2+)

The phase implements the following business logic.

Display choice values (SR0080.2.1)

- Function: Display of choice values
- Trigger: Phase becomes active
- Postcondition: Phase is active

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0080.1.2) layout (page 50).
	20	In case of configuration errors, phase displays Invalid expected value configuration (SR0080.3.6.1) error message (page 60), Invalid default value configuration (SR0080.3.6.2) error message (page 60), or Invalid choice item configuration (SR0080.3.6.3) error message (page 61).

Select choice value (SR0080.2.2)

- Function: Choice value selection
- Trigger: Operator selects a choice value
- Postcondition: Phase is active

Step	#	Description
Operator selects choice value	10	Phase marks selected choice value as selected.
Phase checks setting of One-click completion (SR0080.8.4) process parameter (page 55)	20	One-click completion is enabled: <ul style="list-style-type: none"> ■ Phase is completed automatically. ■ Phase checks expected value in corresponding step of Confirm phase (SR0080.2.3) function (page 53). If a system-triggered (SR0080.3.2+) exception (page 57) occurs during phase completion, phase is not completed after the exception has been signed. Phase returns to the Active mode (SR0080.1.2) layout (page 50) and the operator can complete the phase with the Confirm button.

Confirm phase (SR0080.2.3)

- Function: Completion of phase
- Trigger: Operator confirms phase
- Postcondition: Phase is completed

Step	#	Description
Operator confirms phase	10	Operator confirms choice value.
Selection check	15	If no value has been selected, phase displays the No choice item selected (SR0080.3.6.4) error message (page 61). When the error message has been confirmed, phase returns to the Active mode (SR0080.1.2) layout (page 50). Otherwise continue with step 20.
Validation	20	Phase checks the value against the settings of the Expected value definition (SR0080.8.3) process parameter (page 56).
	20.1	If the check is violated, phase creates the Expected value check (SR0080.3.2.1) system-triggered exception (page 58).
	20.2	If the check is not violated, phase is completed.

Process Parameters (SR0080.8+)

The following process parameters define the behavior of the phase.

INSTRUCTION TABLE-SPECIFIC PARAMETERS**Instruction table definition (Framework capability)**

Attribute	Type	Comment
Table layout	Choice list	Defines the layout of the instruction table holding the instruction texts. Available settings: 1 column, 2 columns, 3 columns, 4 columns, 5 columns . Default setting: 1 column .
First column narrow	Boolean	Defines if the first column of the table shall be narrow.
Show all borders	Boolean	Defines if the borders of the table shall be visible.

Instruction table text (Framework capability)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed in a column. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	
Column 3	HTML text	
Column 4	HTML text	
Column 5	HTML text	

INSTRUCTION LINK-SPECIFIC PARAMETERS

Instruction text with links (Framework capability)

Attribute	Type	Comment
Instruction text	HTML text	Instruction text to be displayed. For any text enclosed in curly brackets you can define a hyperlink with the Instruction link definition process parameter (page 54). Example: Refer to {SOP1270} for guidance. Maximum length is 2000 characters (including HTML tags).

Instruction link definition (Framework capability)

Attribute	Type	Comment
Link text	Text	Text to be used as link. For any text enclosed in curly brackets within the instruction text you can define a link with the Link URL attribute. Including the brackets in the link text is optional. Maximum length is 80 characters.

Attribute	Type	Comment
Link URL	Text	URL of the file to be displayed. The link opens the external application assigned to the file type by the operating system. Maximum length is 256 characters.

BASIC PARAMETERS

Instruction (SR0080.8.1)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	Not used.
Column 3	HTML text	

CHOICE VALUE PARAMETERS

List of options (SR0080.8.2)

Attribute	Type	Comment
Options	Text (structured)	Defines the available options as key/display text value pairs. Both keys and display texts are unique within a phase.

Option List editor (Framework capability)

The system provides an Option List editor for entering choice items as key/display text value pairs.

One-click completion (SR0080.8.4)

Attribute	Type	Comment
Enabled	Flag	Controls if the phase is automatically completed when an option has been selected.

CONFIGURATION OF SYSTEM-TRIGGERED EXCEPTIONS

Expected value configuration (SR0080.8.5)

Attribute	Type	Comment
Enabled	Flag	Controls if a check is performed. If so, ensure that the Expected value key attribute of the Expected value definition (SR0080.8.3) process parameter (page 56) is set.
Display	Flag	Controls if an expected value is displayed during execution. The value is marked as underlined text. Ensure that the Expected value key attribute of the Expected value definition (SR0080.8.3) process parameter (page 56) is set.
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 250 characters.

See also **Expected value check (SR0080.3.2.1)** system-triggered exception (page 58).

Expected value definition (SR0080.8.3)

Attribute	Type	Comment
Expected value	String	Defines the expected value.
Default value	String	Defines the pre-selected item in the list of options.

CONFIGURATION OF POST-COMPLETION EXCEPTIONS

Correct value (SR0080.8.6)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 250 characters.

See also **Correct value (SR0080.3.3.1)** post-completion exception (page 59).

Exceptions (SR0080.3+)

The phase supports user-defined, user-triggered (page 58), system-triggered (page 57), and post-completion exceptions (page 58) and their configuration by means of process parameters (page 53).

User-defined exceptions cannot be configured by process parameters since they are provided by the framework and independent of phases.

System-triggered Exceptions (SR0080.3.2+)

A system-triggered exception is represented in a message dialog along with an **Exception** button, in the Exception Window as the read-only description of the exception, and in the batch report.

The following system-triggered exceptions are available.

Expected value check (SR0080.3.2.1)

Representation of the exception:

- <Exception text>
(taken from **Expected value configuration (SR0080.8.5)** process parameter (page 56))
Expected key/text: <expected key>/<expected text> (taken from **Expected value definition (SR0080.8.3)** process parameter (page 56))
Actual value: <selected choice value>
- Example:
Expected value check failed.
Expected key/text: B/Biotech
Actual key/text: M/Microbiology

Expected value check- Logic (SR0080.3.2.1.1)

- Trigger: Operator confirms phase
- Postcondition: Phase is completed

Step	#	Description
Operator confirms phase	10	Phase creates Expected value check (SR0080.3.2.1) system-triggered exception.
Operator triggers exception	20	Phase records the exception.
Operator confirms exception	30	Phase is completed.

User-triggered Exceptions

There are no user-triggered exceptions available.

Post-completion Exceptions (SR0080.3.3+)

A post-completion exception is accessible via the Navigator and represented in the list of available post-completion exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following post-completion exceptions are available.

Correct value (SR0080.3.3.1)

The **Correct value** exception allows an operator to correct the selected choice value from the Navigator after the completion of the phase.

TIP

A recorded value could be used within branching. The correction of a value **does not influence** already processed branching decisions.

Representation of the exception:

- **Instruction:**
Select another option. Old value: <Old text>
Display of list of options according to the **Active mode (SR0080.1.2)** layout (page 50)
Confirm button.
- <Exception text>
(taken from **Correct value (SR0080.8.6)** process parameter (page 57))
Old key/text: <Old key>/<Old text>
New key/text: <Old key>/<Old text>
- **Example:**
Choice corrected (after phase completion).
Old key/text: Yellow/Yellow appearance of test strip
New key/text: Blue/Blue appearance of test strip

Correct value - Logic (SR0080.3.3.1.1)

- **Trigger:** Phase is completed
- **Postcondition:** Post-completion exception is recorded

Step	#	Description
Operator triggers action	10	Phase displays Exception Window.
	20	Operator selects another choice value.
Operator confirms exception	30	Phase checks the value against the settings of the Expected value definition (SR0080.8.3) process parameter (page 56).
	30.1	If the limit is violated, only one exception (post-completion exception) is recorded including both, correction and limit violation.

Information Messages

There are no information messages available.

Questions

There are no questions available.

Decisions

There are no decisions available.

Error Messages (SR0080.3.6+)

The following error messages are available.

Phase Configuration-specific Error Messages

The following error messages are available to inform the author in the Phase Preview of Recipe and Workflow Designer about configuration errors of the phase.

In case the error still exists during processing, the phase displays the error message in the **Preview mode (SR0080.1.1)** layout (page 50) and the **Active mode (SR0080.1.2)** layout (page 50). The phase cannot be completed at all.

Invalid expected value configuration (SR0080.3.6.1)

UI text	Comment
Configuration error in expected value definition parameter: expected value must be defined.	This error message is rendered within the Phase Preview of Recipe and Workflow Designer. Message pack: PhaseBaseGetChoiceValue<version> Message ID: ParamValueDefinition_emptyExpectedKey_ErrorMsg

Invalid default value configuration (SR0080.3.6.2)

UI text	Comment
Configuration error in expected value definition parameter: default value must be a list option key.	This error message is rendered within the Phase Preview of Recipe and Workflow Designer. Message pack: PhaseBaseGetChoiceValue<version> Message ID: ParamValueDefinition_emptyDefaultKey_ErrorMsg

Invalid choice item configuration (SR0080.3.6.3)

UI text	Comment
Configuration error in expected value definition parameter: expected value must be a list option key.	This error message is rendered within the Phase Preview of Recipe and Workflow Designer. Message pack: PhaseBaseGetChoiceValue<version> Message ID: ParamValueDefinition_invalidExpectedKey_ErrorMsg

Execution-specific Error Messages

Error messages are represented in an error message dialog containing a message type-specific icon, the error message, and an **OK** button.

The following error messages are available to inform the operator about error conditions.

No choice item selected (SR0080.3.6.4)

UI text	Comment
You have to select an option before you can confirm the phase.	Message pack: PhaseBaseGetChoiceValue<version> Message ID: NoChoiceItemSelectedTxt

Output Variables (SR0080.9+)

The following output variables are available to reference the phase's output.

Instance count (Framework capability)

- Data type: Long
- Usage: The output variable provides the count of the number of instances the phase has been processed, for example in a loop. The count is also increased when the phase is skipped from an operator's perspective, since the phase is still executed, but as a hidden phase.
The count variable of a phase that has not been executed provides 0 as output value.

Start time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the start time of the phase.

Completion time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the completion time of the phase.

Identifier (Framework capability)

- Data type: String
- Usage: The output variable provides the identifier of the phase.

Option text (SR0080.9.4)

- Data type: String
- Usage: The output variable provides the display text of the selected option.

Option key (SR0080.9.5)

- Data type: String
- Usage: The output variable provides the key value of the selected option.

Upload Image Phase (SR0090+)

The **Upload image** phase allows an operator to upload an image to document processing-related information.

Example use cases are:

- Recording of visual appearance during product test
During the inspection of a product sample, a picture of the sample can be taken and uploaded.
- Supporting the operator with graphical instructions
When the operator starts a specific processing step, the phase automatically displays the required illustration.

The phase supports the following file formats: JPG, GIF, and PNG.

Different phase modes enable the usage in various situations that can occur during processing:

- In the **Selection** mode, the operator manually selects an image file to be uploaded.
- In the **Loading** mode, the operator triggers the upload of an already pre-defined image file.
- In the **Automatic loading** mode, the phase loads a pre-defined image file automatically.
- In the **Automatic completion** mode, the phase loads a pre-defined image file and is completed automatically without any operator interaction.

The uploaded image and its meta data are stored in the batch record, thereby becoming available for documentation purposes in the sub-report and batch report (page 65).

Anomalies that occur during processing are covered by the phase exception handling (page 76) (e.g. required image has not been uploaded).

After completion the phase displays the uploaded image in the Execution Window. The Navigator displays the file name of the uploaded image and provides access to the post-completion exception.

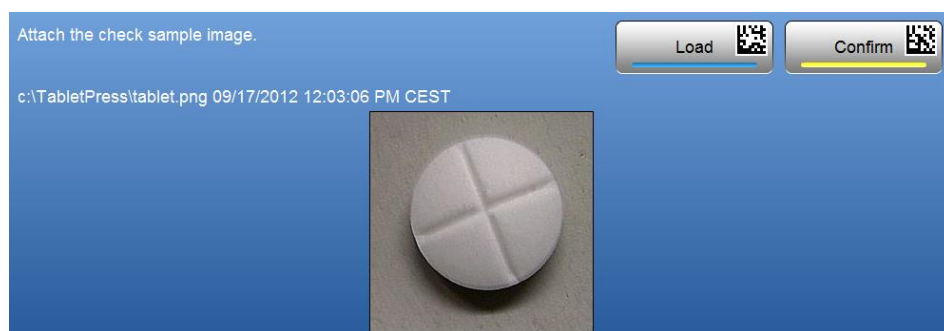


Figure 6: Upload image during execution - Automatic loading mode

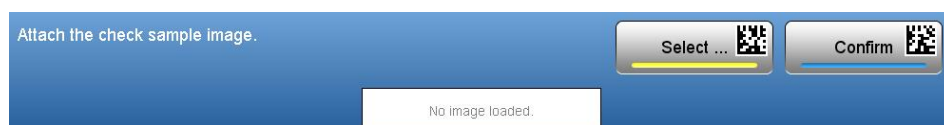


Figure 7: Upload image during execution - Selection mode

Layout

The phase provides individual layouts for its representation during execution (page 64), in the Navigator (page 65), and in the sub-report (page 65).

Representation during Execution (SR0090.1+)

The representation during execution depends on the phase mode.

Preview mode (SR0090.1.1)

1. <Instruction text>
(taken from **Instruction (SR0090.8.1)** process parameter (page 73))
2. Depends on **Mode (SR0090.8.2)** process parameter (page 73):
 - In **Selection** mode: **Select** button (disabled)
 - In all other modes than **Selection**: **Load** button (disabled)
3. **Confirm** button (disabled).

Active mode (SR0090.1.2)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0090.8.1)** process parameter (page 73))

3. Depends on **Mode (SR0090.8.2)** process parameter (page 73):
 - In **Selection** mode: **Select** button to open file selection dialog
 - In all other modes than **Selection**: **Load** button to load pre-defined image
4. <Full path name of image file>
<Modification time of image file>
Uploaded image.
5. **Confirm** button.

Completed mode (SR0090.1.3)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0090.8.1)** process parameter (page 73))
3. <Full path name of image file>
<Modification time of image file>
Uploaded image.
4. **Confirm** button (completed).

Representation in Navigator (SR0090.4+)

The Navigator provides the following details:

Phase column (Framework capability)

- <Phase name>
- Example:
Mixer AB_3X

Information column (SR0090.4.1)

- Image file name or N/A if no image has been uploaded
- Example: IMG001.JPG

Action column (SR0090.4.2)

- Replace file, provides exception to replace the uploaded image by a manual file selection.

Representation in Sub-report (SR0090.5+)

The sub-report contains the following information:

Common sub-report elements (Framework capability)

- <Start time>
- <Completion time>
- <Unit procedure> / <operation> / <phase>
- <Work center> / <station> / <device> - <phase completion user>

Sub-report elements (SR0090.5.1)

- Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
- Instruction text
- Image loaded at: <work center identifier>
- Image loaded from: <Full path name of image file>
- Image modified on: <Modification time of image file>
- Uploaded image

Business Logic (SR0090.2+)

The phase implements the following business logic.

Phase Mode

Business logic related to phase modes.

Selection mode (SR0090.2.1)

- Function: **Selection** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is active

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0090.1.2) layout (page 64).
Operator action	20	The Select button opens a file selection dialog, see Select image (SR0090.2.2) function (page 69).

Loading mode (SR0090.2.4)

- Function: **Loading (pre-defined file)** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is active

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0090.1.2) layout (page 64).
Operator action	20	The Load button loads an image file, see Load image (SR0090.2.5) function (page 69).

Automatic loading mode (SR0090.2.6)

- Function: **Automatic loading (pre-defined file)** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is active

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0090.1.2) layout (page 64).
Phase loads image file	20	<p>Phase loads the image automatically according to the settings of the File location (SR0090.8.3) process parameter (page 73).</p> <p>If one of the following issues occurs, phase displays an error message:</p> <ol style="list-style-type: none"> 1. Image cannot be loaded, Load image error (SR0090.3.6.1) error message (page 79). 2. Image cannot be displayed, Display image error (SR0090.3.6.2) error message (page 80). 3. Image cannot be determined, Image ambiguous (SR0090.3.6.3) error message (page 80). <p>When the error message has been confirmed, phase returns to the Active mode (SR0090.1.2) layout (page 64).</p> <p>Otherwise continue with step 40.</p>
Operator interaction	30	<p>In case the automated upload results in an error, the operator can still trigger the upload of an image file manually with the Load button, see Load image (SR0090.2.5) function (page 69).</p> <p>The same checks apply as for step 20.</p>

Step	#	Description
Phase displays image	40	Phase displays the image in the image placeholder of the phase.

Automatic completion mode (SR0090.2.7)

- Function: **Automatic completion (pre-defined file)** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is completed

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0090.1.2) layout (page 64).
	20	<p>Phase loads the image automatically according to the settings of the File location (SR0090.8.3) process parameter (page 73).</p> <p>If one of the following issues occurs, phase displays an error message:</p> <ol style="list-style-type: none"> 1. Image cannot be loaded, Load image error (SR0090.3.6.1) error message (page 79). 2. Image cannot be displayed, Display image error (SR0090.3.6.2) error message (page 80). 3. Image cannot be determined, Image ambiguous (SR0090.3.6.3) error message (page 80). <p>When the error message has been confirmed, phase returns to the Active mode (SR0090.1.2) layout (page 64).</p> <p>Otherwise continue with step 40.</p>
Operator interaction	30	<p>In case the automated upload results in an error, the operator can still trigger the upload of an image file manually with the Load button, see Load image (SR0090.2.5) function (page 69).</p> <p>The same checks apply as for step 20.</p> <p>The phase needs to be completed manually by the operator.</p>
Phase displays image	40	Phase displays the image in the image placeholder of the phase.
	50	Phase is completed automatically.

Main Path

Business logic related to the main path:

Select image (SR0090.2.2)

- Function: Image selection and loading
- Type: Main path
- Trigger: Operator opens file selection dialog
- Postcondition: Phase is active

Step	#	Description
Operator opens file selection dialog	10	Phase displays the file selection dialog. Starting directory is taken from the File location (SR0090.8.3) process parameter (page 73).
	20	The displayed images are filtered using the configured wildcards (* = multiple characters or ? = single character) for the file name. The file name is taken from the File location (SR0090.8.3) process parameter (page 73).
Operator selects an image file	30	Phase closes the file selection dialog.
Phase displays image	40	Phase displays the image in the image placeholder of the phase.

Load image (SR0090.2.5)

- Function: Image loading
- Type: Main path
- Trigger: Operator loads an image file
- Postcondition: Phase is active

Step	#	Description
Operator loads an image file	10	<p>Phase loads the image according to the settings of the File location (SR0090.8.3) process parameter (page 73).</p> <p>If one of the following issues occurs, phase displays an error message:</p> <ol style="list-style-type: none"> 1. Image cannot be loaded, Load image error (SR0090.3.6.1) error message (page 79). 2. Image cannot be displayed, Display image error (SR0090.3.6.2) error message (page 80). 3. Image cannot be determined, Image ambiguous (SR0090.3.6.3) error message (page 80). <p>When the error message has been confirmed, phase returns to the Active mode (SR0090.1.2) layout (page 64).</p> <p>Otherwise continue with step 20.</p>
Phase displays image	20	Phase displays the image in the image placeholder of the phase.

Confirm phase (SR0090.2.3)

- Function: Completion of phase
- Type: Main path
- Trigger: Operator confirms phase
- Postcondition: Phase is completed

Step	#	Description
Operator confirms phase	10	Operator confirms uploaded image.
Phase checks setting of Mandatory upload check (SR0090.8.6) process parameter (page 74)	20	<p>If Mandatory upload check is enabled:</p> <ul style="list-style-type: none"> ■ If no image has been uploaded, phase creates the Mandatory upload check (SR0090.3.2.1) system-triggered exception (page 76). When the exception has been registered, phase returns to the Active mode (SR0090.1.2) layout (page 64). ■ If an image has been uploaded or the system-triggered exception has been registered, continue with step 30.
	30	Phase is completed.

Process Parameters (SR0090.8+)

The following process parameters define the behavior of the phase.

INSTRUCTION TABLE-SPECIFIC PARAMETERS

Instruction table definition (Framework capability)

Attribute	Type	Comment
Table layout	Choice list	Defines the layout of the instruction table holding the instruction texts. Available settings: 1 column, 2 columns, 3 columns, 4 columns, 5 columns. Default setting: 1 column.
First column narrow	Boolean	Defines if the first column of the table shall be narrow.
Show all borders	Boolean	Defines if the borders of the table shall be visible.

Instruction table text (Framework capability)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed in a column. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	
Column 3	HTML text	
Column 4	HTML text	
Column 5	HTML text	

INSTRUCTION LINK-SPECIFIC PARAMETERS

Instruction text with links (Framework capability)

Attribute	Type	Comment
Instruction text	HTML text	<p>Instruction text to be displayed.</p> <p>For any text enclosed in curly brackets you can define a hyperlink with the Instruction link definition process parameter (page 72).</p> <p>Example: Refer to {SOP1270} for guidance.</p> <p>Maximum length is 2000 characters (including HTML tags).</p>

Instruction link definition (Framework capability)

Attribute	Type	Comment
Link text	Text	<p>Text to be used as link.</p> <p>For any text enclosed in curly brackets within the instruction text you can define a link with the Link URL attribute.</p> <p>Including the brackets in the link text is optional.</p> <p>Maximum length is 80 characters.</p>
Link URL	Text	<p>URL of the file to be displayed. The link opens the external application assigned to the file type by the operating system.</p> <p>Maximum length is 256 characters.</p>

BASIC PARAMETERS

Instruction (SR0090.8.1)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	Not used.
Column 3	HTML text	

Mode (SR0090.8.2)

Attribute	Type	Comment
Mode	Choice list	Defines the processing mode. Selection (default): Operator selects an image file. Loading (pre-defined file): Operator triggers phase to load a pre-defined image file. Automatic loading (pre-defined file): Phase automatically loads a pre-defined image file. Automatic completion (pre-defined file): Phase automatically loads a pre-defined image file and is completed.

IMAGE PARAMETERS

File location (SR0090.8.3)

Attribute	Type	Comment
Directory path	Text	Defines the directory path of the image file to be loaded. Environment variables are supported (e.g. %USERNAME%). If the Mode (SR0090.8.2) process parameter (page 73) is set to Selection , the specified path is the starting point for the file selection dialog. The operator can navigate to another directory.

Attribute	Type	Comment
File name	Text	<p>Defines the name of the image file to be loaded.</p> <p>If the Mode (SR0090.8.2) process parameter (page 73) is set to Selection, all image files are available for selection.</p> <p>If the Mode (SR0090.8.2) process parameter (page 73) is not set to Selection, the file name must be unique even if wildcards are used.</p>

CONFIGURATION OF SYSTEM-TRIGGERED EXCEPTIONS

Mandatory upload check (SR0090.8.6)

Attribute	Type	Comment
Enabled	Flag	<p>Controls if a check is performed.</p> <p>If not, the phase can be completed without an image upload.</p> <p>If so, the phase can only be completed with an image upload or if the Mandatory upload check (SR00903.2.1) system-triggered exception (page 76) has been registered.</p>
Risk assessment	Choice list	<p>Defines the risk level of the exception and thus controls the related signature privilege.</p> <p>Available settings: None, Low, Low (mandatory comment), Medium, Medium (mandatory comment), High, High (mandatory comment).</p> <p>Default setting: High.</p>
Exception text	Text	<p>Defines the exception description used during exception handling and within the batch record.</p> <p>Maximum length is 250 characters.</p> <p>Mandatory if the Enabled attribute is set to Yes.</p>

See also **Mandatory upload check (SR0090.3.2.1)** system-triggered exception (page 76).

CONFIGURATION OF USER-TRIGGERED EXCEPTIONS

Select manually (SR0090.8.4)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 250 characters.

See also **Select manually (SR0090.3.1.1)** user-triggered exception (page 77).

CONFIGURATION OF POST-COMPLETION EXCEPTIONS

Replace file (SR0090.8.5)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 250 characters.

See also **Replace file (SR0090.3.3.1)** post-completion exception (page 78).

Exceptions (SR0090.3+)

The phase supports user-defined, user-triggered (page 77), system-triggered (page 76), and post-completion exceptions (page 78) and their configuration by means of process parameters (page 71).

User-defined exceptions cannot be configured by process parameters since they are provided by the framework and independent of phases.

System-triggered Exceptions (SR0090.3.2+)

A system-triggered exception is represented in a message dialog along with an **Exception** button, in the Exception Window as the read-only description of the exception, and in the batch report.

The following system-triggered exceptions are available.

Mandatory upload check (SR0090.3.2.1)

Representation of the exception:

- <Exception text>
(taken from **Mandatory upload check (SR0090.8.6)** process parameter (page 74))
- Example:
Mandatory upload of the sample kit picture is skipped.

Mandatory upload check- Logic (SR0090.3.2.1.1)

- Trigger: Operator confirms phase
- Postcondition: Phase is completed

Step	#	Description
Operator confirms phase	10	Phase creates Mandatory upload check (SR0090.3.2.1) system-triggered exception.
Operator triggers exception	20	Phase records the exception.
Operator confirms exception	30	Phase is completed.

User-triggered Exceptions (SR0090.3.1+)

A user-triggered exception is represented in the list of available user-triggered exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following user-triggered exceptions are available.

Select manually (SR0090.3.1.1)

The **Select manually** exception allows an operator to select an image file manually. The settings of the **Mode (SR0090.8.2)** process parameter (page 73) are ignored. If an image has already been uploaded, the image is replaced.

Representation during exception handling:

- Instruction:
To display another image, select its image file.
Select button.
<Old image>
<Full path name of old image file>
<Modification time of old image file>
<New image>
<Full path name of new image file>
<Modification time of new image file>
Confirm button.
- Exception text:
<Exception text>
(taken from **Select manually (SR0090.8.4)** process parameter (page 75))
Old image: <Full path name>, <Modification time>
New image: <Full path name>, <Modification time>
- Example:
Manual selection
Old image: C:\upload\IMG001.JPG, 08/03/2012 10:43:26 AM CEST
New image: C:\upload\IMG002.JPG, 08/04/2012 10:43:26 AM CEST

Select manually - Logic (SR0090.3.1.1.1)

- Trigger: Exception is selected
- Postcondition: Image is uploaded

Step	#	Description
Operator confirms exception	10	See Select image (SR0090.2.2) function (page 69).

Post-completion Exceptions (SR0090.3.3+)

A post-completion exception is accessible via the Navigator and represented in the list of available post-completion exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following post-completion exceptions are available.

Replace file (SR0090.3.3.1)

The **Replace file** exception allows an operator to manually replace the uploaded image from the Navigator after the phase has been confirmed. If an image has already been uploaded, the image is replaced.

TIP

A recorded value could be used within branching. The correction of a value **does not influence** already processed branching decisions.

Representation of the exception:

- **Instruction:**
To display another image, select its image file.
Select button.
<Old image>
<Full path name of old image file>
<Modification time of old image file>
<New image>
<Full path name of new image file>
<Modification time of new image file>
Confirm button.
- <Exception text>
(taken from **Replace file (SR0090.8.6)** process parameter (page 75))
Old image: <Full path name>, <Modification time>
New image: <Full path name>, <Modification time>
- **Example:**
Image replaced (after phase completion).
Old image: C:\upload\IMG001.JPG, 08/03/2012 10:43:26 AM CEST
New image: C:\upload\IMG002.JPG, 08/04/2012 10:43:26 AM CEST

Replace file - Logic (SR0090.3.3.1.1)

- Trigger: Phase is completed
- Postcondition: Post-completion exception is recorded

Step	#	Description
Operator triggers action	10	Phase displays Exception Window.
Operator confirms exception	30	See Select image (SR0090.2.2) function (page 69). The Load button is disabled.

Information Messages

There are no information messages available.

Questions

There are no questions available.

Decisions

There are no decisions available.

Error Messages (SR0090.3.6+)

Error messages are represented in an error message dialog containing a message type-specific icon, the error message, and an **OK** button.

The following error messages are available to inform the operator about error conditions.

Load image error (SR0090.3.6.1)

UI text	Comment
Cannot load the image, since the pre-defined file name (invalid file name) does not exist.	Message pack: PhaseBasicUploadImage<version> Message ID: ParamFileLocation_NoFileFound_ErrorMsg
Cannot load the image, since the pre-defined directory (<invalid directory>) does not exist.	Message pack: PhaseBasicUploadImage<version> Message ID: ParamFileLocation_DirDoesNotExist_ErrorMsg

UI text	Comment
Cannot load the image, since there is no directory path defined.	Message pack: PhaseBasicUploadImage<version> Message ID: ParamFileLocation_NoDirConfigured_ErrorMsg
Cannot load the image, since there is no file name defined.	Message pack: PhaseBasicUploadImage<version> Message ID: ParamFileLocation_NoFileConfigured_ErrorMsg

Display image error (SR0090.3.6.2)

UI text	Comment
Cannot load the image file.	Message pack: PhaseBasicUploadImage<version> Message ID: LoadFile_ErrorMsg

Image ambiguous (SR0090.3.6.3)

UI text	Comment
Cannot load the image, since the pre-defined file location contains more than one matching file.	Message pack: PhaseBasicUploadImage<version> Message ID: ParamFileLocation_FileAmbiguous_ErrorMsg

Output Variables (SR0090.9+)

The following output variables are available to reference the phase's output.

Instance count (Framework capability)

- Data type: Long
- Usage: The output variable provides the count of the number of instances the phase has been processed, for example in a loop. The count is also increased when the phase is skipped from an operator's perspective, since the phase is still executed, but as a hidden phase.
The count variable of a phase that has not been executed provides 0 as output value.

Start time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the start time of the phase.

Completion time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the completion time of the phase.

Identifier (Framework capability)

- Data type: String
- Usage: The output variable provides the identifier of the phase.

Image full path (SR0090.9.4)

- Data type: String
- Usage: The output variable provides the full path and file name of the uploaded image.

Image timestamp (SR0090.9.5)

- Data type: Timestamp
- Usage: The output variable provides the modification time of the uploaded image.

Configuration Keys (SR0090.11+)

The following configuration keys are available to configure the phase's behavior.

Maximum file size (SR0090.11.1)

- **Phase/UploadImage/uploadMaximumFileSize**
- **Type:** Long
- **Value:** N/A
- **Description:** Defines the maximum allowed file size in bytes of the image file to be uploaded.
Default: 1000000
- **Range:** <=1000000

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- FT PharmaSuite® 10.01.00 - Functional Requirement Specification EBR Phases
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Upload PDF Phase (SR0100+)

The **Upload PDF** phase allows an operator to upload a PDF file, to display its content, and to document the content in the batch report.

Example use cases are:

- **Attaching documentation to the batch report**
During execution, the operator can upload a PDF file that provides information about test results of a sample.
- **Supporting the operator with instructions that need to be recorded in the batch report**
When the operator starts a specific processing step, the phase automatically uploads and displays the required PDF file.

TIP

If the content of a PDF file shall only be displayed, but not included in the batch report, use the **Show URL (SR0120+)** phase (page 103).

Different phase modes enable the usage in various situations that can occur during processing:

- In the **Selection** mode, the operator manually selects a PDF file to be uploaded.
- In the **Loading** mode, the operator triggers the upload of an already pre-defined PDF file.
- In the **Automatic loading** mode, the phase loads a pre-defined PDF file automatically.
- In the **Automatic completion** mode, the phase loads a pre-defined PDF file and is completed automatically without any operator interaction.

The uploaded PDF file and its meta data are stored in the batch record, thereby becoming available for documentation purposes in the sub-report and batch report (page 86).

Anomalies that occur during processing are covered by the phase exception handling (page 96) (e.g. required PDF file has not been uploaded).

After completion the phase displays the file name of the uploaded PDF file in the Execution Window. The Navigator displays the file name of the uploaded PDF file and provides access to the post-completion exception.

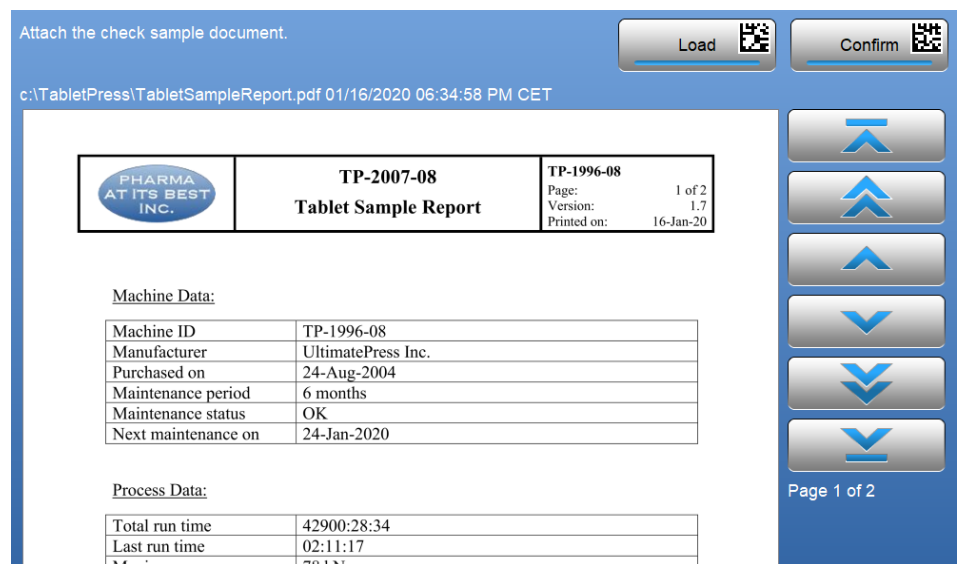


Figure 8: Upload PDF during execution - Automatic loading mode

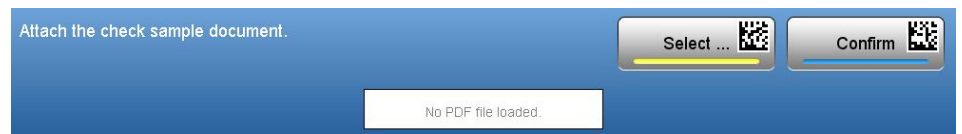


Figure 9: Upload PDF during execution - Selection mode

Layout

The phase provides individual layouts for its representation during execution (page 84), in the Navigator (page 85), and in the sub-report (page 86).

Representation during Execution (SR0100.1+)

The representation during execution depends on the phase mode.

Preview mode (SR0100.1.1)

1. <Instruction text>
(taken from **Instruction (SR0100.8.1)** process parameter (page 93))
2. Depends on **Mode (SR0100.8.2)** process parameter (page 93):
 - In **Selection** mode: **Select** button (disabled)
 - In all other modes than **Selection**: **Load** button (disabled)
3. **Confirm** button (disabled).

Active mode (SR0100.1.2)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0100.8.1)** process parameter (page 93))
3. Depends on **Mode (SR0100.8.2)** process parameter (page 93):
 - In **Selection** mode: **Select** button to open file selection dialog
 - In all other modes than **Selection**: **Load** button to load pre-defined PDF file
4. <Full path name of PDF file>
<Modification time of PDF file>
Content of uploaded PDF file.
5. Buttons to navigate through the uploaded PDF file (**First page, Previous page, Next page, Last page**)
6. Page number of the currently displayed page and the total number of pages
7. **Confirm** button.

Completed mode (SR0100.1.3)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0100.8.1)** process parameter (page 93))
3. <Full path name of PDF file>
<Modification time of PDF file>
Content of uploaded PDF file.
4. **Confirm** button (completed).

Representation in Navigator (SR0100.4+)

The Navigator provides the following details:

Phase column (Framework capability)

- <Phase name>
 - Example:
SOP: Mixer AB_3X

Information column (SR0100.4.1)

- PDF file name or N/A if no PDF file has been uploaded
- Example: SOP001.PDF

Action column (SR0100.4.2)

- Replace file, provides exception to replace the uploaded PDF file by a manual file selection.

Representation in Sub-report (SR0100.5+)

The sub-report contains the following information:

Common sub-report elements (Framework capability)

- <Start time>
- <Completion time>
- <Unit procedure> / <operation> / <phase>
- <Work center> / <station> / <device> - <phase completion user>

Sub-report elements (SR0100.5.1)

- Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
- Instruction text
- PDF loaded at: <work center identifier>
- PDF loaded from: <Full path name of PDF file>
- PDF modified on: <Modification time of PDF file>
- Content of uploaded PDF file

Business Logic (SR0100.2+)

The phase implements the following business logic.

Phase Mode

Business logic related to phase modes.

Selection mode (SR0100.2.1)

- Function: **Selection** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is active

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0100.1.2) layout (page 85).
Operator action	20	The Select button opens a file selection dialog, see Select PDF (SR0100.2.2) function (page 89).

Loading mode (SR0100.2.4)

- Function: **Loading (pre-defined file)** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is active

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0100.1.2) layout (page 85).
Operator action	20	The Load button loads a PDF file, see Load PDF (SR0100.2.5) function (page 90).

Automatic loading mode (SR0100.2.6)

- Function: **Automatic loading (pre-defined file)** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is active

Step	#	Description
Phase activation	10	Phase displays PDF file
Phase loads PDF file	20	<p>Phase loads the PDF file automatically according to the settings of the File location (SR0100.8.3) process parameter (page 93).</p> <p>If one of the following issues occurs, phase displays an error message:</p> <ol style="list-style-type: none"> 1. PDF cannot be loaded, Load PDF error (SR0100.3.6.1) error message (page 99). 2. PDF cannot be displayed, Display PDF error (SR0100.3.6.2) error message (page 100). 3. PDF cannot be determined, PDF ambiguous (SR0100.3.6.3) error message (page 100). <p>When the error message has been confirmed, phase returns to the Active mode (SR0100.1.2) layout (page 85).</p> <p>Otherwise continue with step 40.</p>
Operator interaction	30	<p>In case the automated upload results in an error, the operator can still trigger the upload of a PDF file manually with the Load button, see Load PDF (SR0100.2.5) function (page 90).</p> <p>The same checks apply as for step 20.</p>
Phase displays PDF file	40	Phase displays the PDF file in the PDF placeholder of the phase.

Automatic completion mode (SR0100.2.7)

- Function: **Automatic completion (pre-defined file)** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is completed

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0100.1.2) layout (page 85).

Step	#	Description
	20	<p>Phase loads the PDF file automatically according to the settings of the File location (SR0100.8.3) process parameter (page 93).</p> <p>If one of the following issues occurs, phase displays an error message:</p> <ol style="list-style-type: none"> 1. PDF cannot be loaded, Load PDF error (SR0100.3.6.1) error message (page 99). 2. PDF cannot be displayed, Display PDF error (SR0100.3.6.2) error message (page 100). 3. PDF cannot be determined, PDF ambiguous (SR0100.3.6.3) error message (page 100). <p>When the error message has been confirmed, phase returns to the Active mode (SR0100.1.2) layout (page 85).</p> <p>Otherwise continue with step 40.</p>
Operator interaction	30	<p>In case the automated upload results in an error, the operator can still trigger the upload of a PDF file manually with the Load button, see Load PDF (SR0100.2.5) function (page 90).</p> <p>The same checks apply as for step 20.</p> <p>The phase needs to be completed manually by the operator.</p>
Phase displays PDF file	40	Phase displays the PDF file in the PDF placeholder of the phase.
	50	Phase is completed automatically.

Main Path

Business logic related to the main path:

Select PDF (SR0100.2.2)

- Function: PDF selection and loading
- Type: Main path
- Trigger: Operator opens file selection dialog
- Postcondition: Phase is active

Step	#	Description
Operator opens file selection dialog	10	Phase displays the file selection dialog. Starting directory is taken from the File location (SR0100.8.3) process parameter (page 93).
	20	The displayed PDF files are filtered using the configured wildcards (* = multiple characters or ? = single character) for the file name. The file name is taken from the File location (SR0100.8.3) process parameter (page 93).

Step	#	Description
Operator selects a PDF file	30	Phase closes the file selection dialog.
Phase displays PDF file	40	Phase displays the PDF file in the PDF placeholder of the phase.

Load PDF (SR0100.2.5)

- Function: PDF loading
- Type: Main path
- Trigger: Operator loads a PDF file
- Postcondition: Phase is active

Step	#	Description
Operator loads a PDF file	10	<p>Phase loads the PDF file according to the settings of the File location (SR0100.8.3) process parameter (page 93).</p> <p>If one of the following issues occurs, phase displays an error message:</p> <ol style="list-style-type: none"> 1. PDF cannot be loaded, Load PDF error (SR0100.3.6.1) error message (page 99). 2. PDF cannot be displayed, Display PDF error (SR0100.3.6.2) error message (page 100). 3. PDF cannot be determined, PDF ambiguous (SR0100.3.6.3) error message (page 100). <p>When the error message has been confirmed, phase returns to the Active mode (SR0100.1.2) layout (page 85).</p> <p>Otherwise continue with step 20.</p>
Phase displays PDF file	20	Phase displays the PDF file in the PDF placeholder of the phase.

Confirm phase (SR0100.2.3)

- Function: Completion of phase
- Type: Main path
- Trigger: Operator confirms phase
- Postcondition: Phase is completed

Step	#	Description
Operator confirms phase	10	Operator confirms uploaded PDF file.

Step	#	Description
Phase checks setting of Mandatory upload check (SR0100.8.6) process parameter (page 94)	20	<p>If Mandatory upload check is enabled:</p> <ul style="list-style-type: none"> ■ If no PDF file has been uploaded, phase creates the Mandatory upload check (SR0100.3.2.1) system-triggered exception (page 96). When the exception has been registered, phase returns to the Active mode (SR0100.1.2) layout (page 85). ■ If a PDF file has been uploaded or the system-triggered exception has been registered, continue with step 30.
	30	Phase is completed.

Process Parameters (SR0100.8+)

The following process parameters define the behavior of the phase.

INSTRUCTION TABLE-SPECIFIC PARAMETERS

Instruction table definition (Framework capability)

Attribute	Type	Comment
Table layout	Choice list	Defines the layout of the instruction table holding the instruction texts. Available settings: 1 column , 2 columns , 3 columns , 4 columns , 5 columns . Default setting: 1 column .
First column narrow	Boolean	Defines if the first column of the table shall be narrow.
Show all borders	Boolean	Defines if the borders of the table shall be visible.

Instruction table text (Framework capability)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed in a

Attribute	Type	Comment
Column 2	HTML text	
Column 3	HTML text	
Column 4	HTML text	
Column 5	HTML text	

INSTRUCTION LINK-SPECIFIC PARAMETERS

Instruction text with links (Framework capability)

Attribute	Type	Comment
Instruction text	HTML text	<p>Instruction text to be displayed.</p> <p>For any text enclosed in curly brackets you can define a hyperlink with the Instruction link definition process parameter (page 92).</p> <p>Example: Refer to {SOP1270} for guidance.</p> <p>Maximum length is 2000 characters (including HTML tags).</p>

Instruction link definition (Framework capability)

Attribute	Type	Comment
Link text	Text	<p>Text to be used as link.</p> <p>For any text enclosed in curly brackets within the instruction text you can define a link with the Link URL attribute.</p> <p>Including the brackets in the link text is optional.</p> <p>Maximum length is 80 characters.</p>
Link URL	Text	<p>URL of the file to be displayed. The link opens the external application assigned to the file type by the operating system.</p> <p>Maximum length is 256 characters.</p>

BASIC PARAMETERS

Instruction (SR0100.8.1)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	Not used.
Column 3	HTML text	

Mode (SR0100.8.2)

Attribute	Type	Comment
Mode	Choice list	Defines the processing mode. Selection (default): Operator selects a PDF file. Loading (pre-defined file): Operator triggers phase to load a pre-defined PDF file. Automatic loading (pre-defined file): Phase automatically loads a pre-defined PDF file. Automatic completion (pre-defined file): Phase automatically loads a pre-defined PDF file and is completed.

PDF FILE PARAMETERS

File location (SR0100.8.3)

Attribute	Type	Comment
Directory path	Text	Defines the directory path of the PDF file to be loaded. Environment variables are supported (e.g. %USERNAME%). If the Mode (SR0100.8.2) process parameter (page 93) is set to Selection , the specified path is the starting point for the file selection dialog. The operator can navigate to another directory.

Attribute	Type	Comment
File name	Text	<p>Defines the name of the PDF file to be loaded.</p> <p>If the Mode (SR0100.8.2) process parameter (page 93) is set to Selection, wildcards are supported to restrict the number of displayed PDF files.</p> <p>Example: rep*.pdf displays all PDF files starting with rep.</p> <p>If the Mode (SR0100.8.2) process parameter (page 93) is not set to Selection, the file name must be unique even if wildcards are used.</p>

CONFIGURATION OF SYSTEM-TRIGGERED EXCEPTIONS

Mandatory upload check (SR0100.8.6)

Attribute	Type	Comment
Enabled	Flag	<p>Controls if a check is performed.</p> <p>If not, the phase can be completed without a PDF file upload.</p> <p>If so, the phase can only be completed with a PDF file or if the Mandatory upload check (SR01003.2.1) system-triggered exception (page 96) has been registered.</p>
Risk assessment	Choice list	<p>Defines the risk level of the exception and thus controls the related signature privilege.</p> <p>Available settings: None, Low, Low (mandatory comment), Medium, Medium (mandatory comment), High, High (mandatory comment).</p> <p>Default setting: High.</p>
Exception text	Text	<p>Defines the exception description used during exception handling and within the batch record.</p> <p>Maximum length is 250 characters.</p> <p>Mandatory if the Enabled attribute is set to Yes.</p>

See also **Mandatory upload check (SR0100.3.2.1)** system-triggered exception (page 96).

CONFIGURATION OF USER-TRIGGERED EXCEPTIONS

Select manually (SR0100.8.4)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 250 characters.

See also **Select manually (SR0100.3.1.1)** user-triggered exception (page 97).

CONFIGURATION OF POST-COMPLETION EXCEPTIONS

Replace file (SR0100.8.5)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 250 characters.

See also **Replace file (SR0100.3.3.1)** post-completion exception (page 98).

Exceptions (SR0100.3+)

The phase supports user-defined, user-triggered (page 97), system-triggered (page 96), and post-completion exceptions (page 98) and their configuration by means of process parameters (page 91).

User-defined exceptions cannot be configured by process parameters since they are provided by the framework and independent of phases.

System-triggered Exceptions (SR0100.3.2+)

A system-triggered exception is represented in a message dialog along with an **Exception** button, in the Exception Window as the read-only description of the exception, and in the batch report.

The following system-triggered exceptions are available.

Mandatory upload check (SR0100.3.2.1)

Representation of the exception:

- <Exception text>
(taken from **Mandatory upload check (SR0100.8.6)** process parameter (page 94))
- Example:
Mandatory upload of the Sample Report is skipped.

Mandatory upload check- Logic (SR0100.3.2.1.1)

- Trigger: Operator confirms phase
- Postcondition: Phase is completed

Step	#	Description
Operator confirms phase	10	Phase creates Mandatory upload check (SR0100.3.2.1) system-triggered exception.
Operator triggers exception	20	Phase records the exception.
Operator confirms exception	30	Phase returns to the Active mode (SR0100.1.2) layout (page 85).

User-triggered Exceptions (SR0100.3.1+)

A user-triggered exception is represented in the list of available user-triggered exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following user-triggered exceptions are available.

Select manually (SR0100.3.1.1)

The **Select manually** exception allows an operator to select a PDF file manually. The settings of the **Mode (SR0100.8.2)** process parameter (page 93) are ignored. If a PDF file has already been uploaded, the PDF file is replaced.

Representation during exception handling:

- **Instruction:**
To display another document, select its PDF file.
Select button.
<Old PDF file>
<Full path name of old PDF file>
<Modification time of old PDF file>
<New PDF>
<Full path name of new PDF file>
<Modification time of new PDF file>
Confirm button.
- **Exception text:**
<Exception text>
(taken from **Select manually (SR0100.8.4)** process parameter (page 95))
Old PDF file: <Full path name>, <Modification time>
New PDF file: <Full path name>, <Modification time>
- **Example:**
Manual selection
Old PDF file: C:\upload\SOP001.PDF, 08/03/2012 10:43:26 AM CEST
New PDF file: C:\upload\SOP002.PDF, 08/04/2012 10:43:26 AM CEST

Select manually - Logic (SR0100.3.1.1.1)

- **Trigger:** Exception is selected
- **Postcondition:** PDF file is uploaded

Step	#	Description
Operator confirms exception	10	See Select PDF (SR0100.2.2) function (page 89).

Post-completion Exceptions (SR0100.3.3+)

A post-completion exception is accessible via the Navigator and represented in the list of available post-completion exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following post-completion exceptions are available.

Replace file (SR0100.3.3.1)

The **Replace file** exception allows an operator to manually replace the uploaded PDF file from the Navigator after the phase has been confirmed. If a PDF file has already been uploaded, the PDF file is replaced.

TIP

A recorded value could be used within branching. The correction of a value **does not influence** already processed branching decisions.

Representation of the exception:

- **Instruction:**
To display another document, select its PDF file.
Select button.
<Old PDF file>
<Full path name of old PDF file>
<Modification time of old PDF file>
<New PDF>
<Full path name of new PDF file>
<Modification time of new PDF file>
Confirm button.
- <Exception text>
(taken from **Replace file (SR0100.8.6)** process parameter (page 95))
Old PDF file: <Full path name>, <Modification time>
New PDF file: <Full path name>, <Modification time>
- **Example:**
PDF file replaced (after phase completion).
Old PDF file: C:\upload\SOP001.PDF, 08/03/2012 10:43:26 AM CEST
New PDF file: C:\upload\SOP002.PDF, 08/04/2012 10:43:26 AM CEST

Replace file - Logic (SR0100.3.3.1.1)

- Trigger: Phase is completed
- Postcondition: Post-completion exception is recorded

Step	#	Description
Operator triggers action	10	Phase displays Exception Window.
Operator confirms exception	30	See Select PDF (SR0100.2.2) function (page 89). The Load button is disabled.

Information Messages

There are no information messages available.

Questions

There are no questions available.

Decisions

There are no decisions available.

Error Messages (SR0100.3.6+)

Error messages are represented in an error message dialog containing a message type-specific icon, the error message, and an **OK** button.

The following error messages are available to inform the operator about error conditions.

Load PDF error (SR0100.3.6.1)

UI text	Comment
Cannot load the PDF file, since the pre-defined file name (invalid file name) does not exist.	Message pack: PhaseBasicUploadPDF<version> Message ID: ParamFileLocation_NoFileFound_ErrorMsg
Cannot load the PDF file, since the pre-defined directory (<invalid directory>) does not exist.	Message pack: PhaseBasicUploadPDF<version> Message ID: ParamFileLocation_DirDoesNotExist_ErrorMsg

UI text	Comment
Cannot load the PDF file, since there is no directory path defined.	Message pack: PhaseBasicUploadPDF<version> Message ID: ParamFileLocation_NoDirConfigured_ErrorMsg
Cannot load the PDF file, since there is no file name defined.	Message pack: PhaseBasicUploadPDF<version> Message ID: ParamFileLocation_NoFileConfigured_ErrorMsg
Cannot display the PDF file, since it is password-protected.	Message pack: PhaseBasicUploadPDF<version> Message ID: PdfPasswordProtected_ErrorMsg
Cannot upload the PDF file, since it is encrypted and does not allow printing.	Message pack: PhaseBasicUploadPDF<version> Message ID: EncryptedFile_PrintingNotAllowed_ErrorMsg

Display PDF error (SR0100.3.6.2)

UI text	Comment
Cannot display the PDF file.	Message pack: PhaseBasicUploadPDF<version> Message ID: displayPDF_ErrorMsg

PDF ambiguous (SR0100.3.6.3)

UI text	Comment
Cannot load the PDF file, since the pre-defined file location contains more than one matching file.	Message pack: PhaseBasicUploadPDF<version> Message ID: ParamFileLocation_FileAmbiguous_ErrorMsg

Output Variables (SR0100.9+)

The following output variables are available to reference the phase's output.

Instance count (Framework capability)

- Data type: Long
- Usage: The output variable provides the count of the number of instances the phase has been processed, for example in a loop. The count is also increased when the phase is skipped from an operator's perspective, since the phase is still executed, but as a hidden phase.
The count variable of a phase that has not been executed provides 0 as output value.

Start time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the start time of the phase.

Completion time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the completion time of the phase.

Identifier (Framework capability)

- Data type: String
- Usage: The output variable provides the identifier of the phase.

PDF full path (SR0100.9.1)

- Data type: String
- Usage: The output variable provides the full path and file name of the uploaded PDF file.

PDF timestamp (SR0100.9.2)

- Data type: Timestamp
- Usage: The output variable provides the modification time of the uploaded PDF file.

Configuration Keys (SR0100.11+)

The following configuration keys are available to configure the phase's behavior.

Maximum file size (SR0100.11.1)

- **Phase/UploadPdf/uploadMaximumFileSize**
- **Type:** Long
- **Value:** N/A
- **Description:** Defines the maximum allowed file size in bytes of the PDF file to be uploaded.
Default: 5000000
- **Range:** <=5000000

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- FT PharmaSuite® 10.01.00 - Functional Requirement Specification EBR Phases
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Show URL Phase (SR0120+)

The **Show URL** phase allows to display PDF documents accessible via a URL.

TIP

Due to the diversity of available user authentication and SSL security solutions, the **Show URL** phase does not support user authentication or SSL security by default. However, the phase can be extended by a system integrator in order to support required customer-specific solutions.

An example use case is:

- Display an SOP

An SOP is stored on the intranet or the file system. This very SOP can be displayed to the operator during execution.

The URL and the instruction text are stored in the batch record, thereby becoming available for documentation purposes in the sub-report and batch report (page 105).

Anomalies that occur during processing are covered by the phase exception handling (page 108) (e.g. document could not be loaded).

The URL of the displayed document is shown on the detail information button in the Navigator (e.g. [www.PharmaAtItsBest.sop1.pdf](#)).

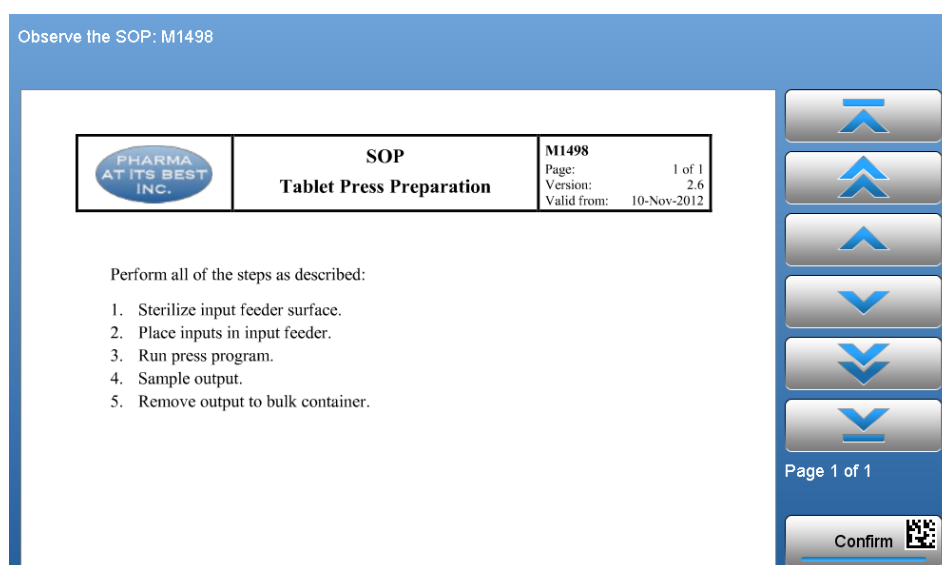


Figure 10: Show URL during execution

Layout

The phase provides individual layouts for its representation during execution (page 104), in the Navigator (page 105), and in the sub-report (page 105).

Representation during Execution (SR0120.1+)

The representation during execution depends on the phase mode.

Preview mode (SR0120.1.1)

1. <Instruction text>
(taken from **Instruction (SR0120.8.1)** process parameter (page 107))
2. <URL>
(taken from **Document (SR0120.8.2)** process parameter (page 108))
3. **Confirm** button (disabled).

Active mode (SR0120.1.2)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <URL>
(taken from **Document (SR0120.8.2)** process parameter (page 108))
3. <Instruction text>
(taken from **Instruction (SR0120.8.1)** process parameter (page 107))
4. <Document>, in a PDF viewer
5. Buttons to navigate through the document (**First page, Previous page, Previous line, Next line, Next page, Last page**)
6. **Confirm** button.

Completed mode (SR0120.1.3)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0120.8.1)** process parameter (page 107))
3. <URL>
(taken from **Document (SR0120.8.2)** process parameter (page 108))
4. **Confirm** button (completed).

Representation in Navigator (SR0120.4+)

The Navigator provides the following details:

Phase column (Framework capability)

- <Phase name>
- Example:
Mix inputs

Information column (SR0120.4.1)

- <Phase name>
- Example: Cleaning SOP V1.0

Action column (SR0120.4.2)

- There are no actions available.

Representation in Sub-report (SR0120.5+)

The sub-report contains the following information:

Common sub-report elements (Framework capability)

- <Start time>
- <Completion time>
- <Unit procedure> / <operation> / <phase>
- <Work center> / <station> / <device> - <phase completion user>

Sub-report elements (SR0120.5.1)

- Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
- URL
- Instruction text

Business Logic (SR0120.2+)

The phase implements the following business logic.

Display document (SR0120.2.1)

- Function: Display a document

- Trigger: Phase becomes active
- Postcondition: Document was displayed

Step	#	Description
Phase activation	10	Phase displays document.

Process Parameters (SR0120.8+)

The following process parameters define the behavior of the phase.

INSTRUCTION TABLE-SPECIFIC PARAMETERS

Instruction table definition (Framework capability)

Attribute	Type	Comment
Table layout	Choice list	Defines the layout of the instruction table holding the instruction texts. Available settings: 1 column, 2 columns, 3 columns, 4 columns, 5 columns. Default setting: 1 column.
First column narrow	Boolean	Defines if the first column of the table shall be narrow.
Show all borders	Boolean	Defines if the borders of the table shall be visible.

Instruction table text (Framework capability)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed in a column. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	
Column 3	HTML text	
Column 4	HTML text	
Column 5	HTML text	

INSTRUCTION LINK-SPECIFIC PARAMETERS

Instruction text with links (Framework capability)

Attribute	Type	Comment
Instruction text	HTML text	<p>Instruction text to be displayed.</p> <p>For any text enclosed in curly brackets you can define a hyperlink with the Instruction link definition process parameter (page 107).</p> <p>Example: Refer to {SOP1270} for guidance.</p> <p>Maximum length is 2000 characters (including HTML tags).</p>

Instruction link definition (Framework capability)

Attribute	Type	Comment
Link text	Text	<p>Text to be used as link.</p> <p>For any text enclosed in curly brackets within the instruction text you can define a link with the Link URL attribute.</p> <p>Including the brackets in the link text is optional.</p> <p>Maximum length is 80 characters.</p>
Link URL	Text	<p>URL of the file to be displayed. The link opens the external application assigned to the file type by the operating system.</p> <p>Maximum length is 256 characters.</p>

BASIC PARAMETERS

Instruction (SR0120.8.1)

Attribute	Type	Comment
Column 1	HTML text	<p>Instruction text to be displayed.</p> <p>Restriction: Maximum length is 2000 characters (including HTML tags).</p>
Column 2	HTML text	Not used.

Attribute	Type	Comment
Column 3	HTML text	

Document (SR0120.8.2)

Attribute	Type	Comment
URL	Text	URL of the document to be displayed. The document will be shown within a PDF viewer.

CONFIGURATION OF SYSTEM-TRIGGERED EXCEPTIONS

Loading failed (SR0120.8.3)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 250 characters.

See also **Loading failed (SR0120.3.2.1)** system-triggered exception (page [109](#)).

Exceptions (SR0120.3+)

The phase supports user-defined, user-triggered (page [109](#)), system-triggered (page [109](#)), and post-completion exceptions (page [109](#)) and their configuration by means of process parameters (page [106](#)).

User-defined exceptions cannot be configured by process parameters since they are provided by the framework and independent of phases.

System-triggered Exceptions (SR0120.3.2+)

A system-triggered exception is represented in a message dialog along with an **Exception** button, in the Exception Window as the read-only description of the exception, and in the batch report.

The following system-triggered exceptions are available.

Loading failed (SR0120.3.2.1)

Representation of the exception:

In case the file cannot be loaded e.g. because the URL is not valid or the file is password-protected, the system triggers this exception.

- <Exception text>
(taken from **Loading failed (SR0120.8.3)** process parameter (page 108))
Cannot load <URL>
- Example:
SOP 0001 could not be loaded.
Cannot load www.PharmaAtItsBest.sop0001.pdf

Loading failed - Logic (SR0120.3.2.1.1)

- Trigger: Loading of document failed
- Postcondition: Exception is recorded

Step	#	Description
Operator triggers exception	10	Phase records the exception.

User-triggered Exceptions

There are no user-triggered exceptions available.

Post-completion Exceptions

There are no post-completion exceptions available.

Information Messages

There are no information messages available.

Questions

There are no questions available.

Decisions

There are no decisions available.

Error Messages

There are no error messages available.

Output Variables

The following output variables are available to reference the phase's output.

Instance count (Framework capability)

- Data type: Long
- Usage: The output variable provides the count of the number of instances the phase has been processed, for example in a loop. The count is also increased when the phase is skipped from an operator's perspective, since the phase is still executed, but as a hidden phase.
The count variable of a phase that has not been executed provides 0 as output value.

Start time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the start time of the phase.

Completion time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the completion time of the phase.

Identifier (Framework capability)

- Data type: String
- Usage: The output variable provides the identifier of the phase.

Create Workflow Phase (SR0130+)

The **Create workflow** phase allows to create a workflow during the execution of an order or workflow.

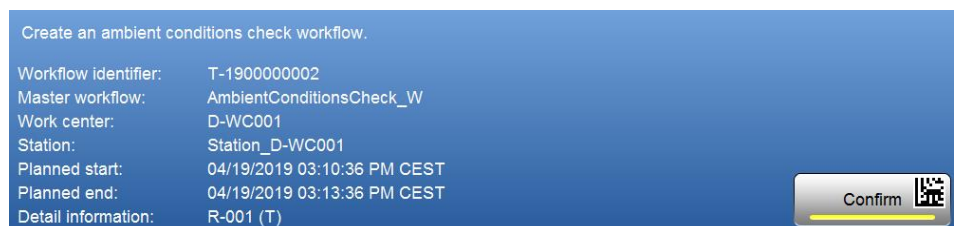
Example use cases are:

- During order execution the container to be used is contaminated and needs to be cleaned. An ad-hoc workflow to clean the container is created and appended to the order.
- The flow rate of a filter is too low and the filter needs to be rinsed. An ad-hoc workflow is created to rinse the filter.

The instruction text, the used master workflow identifier and the workflow identifier of the created workflow, the optional configured work center, station, planned start, planned end, and detail information are stored in the batch record, thereby becoming available for documentation purposes in the sub-report and batch report (page 114).

After completion the phase displays the defined data.

The navigator displays the identifier of the created workflow.



Create an ambient conditions check workflow.	
Workflow identifier:	T-1900000002
Master workflow:	AmbientConditionsCheck_W
Work center:	D-WC001
Station:	Station_D-WC001
Planned start:	04/19/2019 03:10:36 PM CEST
Planned end:	04/19/2019 03:13:36 PM CEST
Detail information:	R-001 (T)

Figure 11: Create workflow during execution

Layout

The phase provides individual layouts for its representation during execution (page 112), in the Navigator (page 113), and in the sub-report (page 114).

Representation during Execution (SR0130.1+)

The representation during execution depends on the phase mode.

Preview mode (SR0130.1.1)

1. <Instruction text>
(taken from **Instruction (SR0130.8.1)** process parameter (page 120))
2. Workflow identifier (taken from **Workflow definition (SR0130.8.3)** process parameter (page 121))
Master workflow (taken from **Master workflow (SR0130.8.4)** process parameter (page 121))
Work center (taken from **Work center (SR0130.8.6)** process parameter (page 122))
Station (taken from **Station (SR0130.8.7)** process parameter (page 122))
Planned start (taken from **Planned start (SR0130.8.9)** process parameter (page 122))
Planned end (taken from **Planned end (SR0130.8.10)** process parameter (page 123))
Detail information (taken from **Detail information (SR0130.8.11)** process parameter (page 123))
The system displays only the labels and their data for which input has been configured and is already evaluated.
3. **Confirm** button (disabled).

Active mode (SR0130.1.2)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0130.8.1)** process parameter (page 120))
3. Workflow identifier (taken from **Workflow definition (SR0130.8.3)** process parameter (page 121))
Master workflow (taken from **Master workflow (SR0130.8.4)** process parameter (page 121))
Work center (taken from **Work center (SR0130.8.6)** process parameter (page 122))
Station (taken from **Station (SR0130.8.7)** process parameter (page 122))

Planned start (taken from **Planned start (SR0130.8.9)** process parameter (page 122))

Planned end (taken from **Planned end (SR0130.8.10)** process parameter (page 123))

Detail information (taken from **Detail information (SR0130.8.11)** process parameter (page 123))

The system displays only the labels and their data for which input has been configured and is already evaluated.

4. **Confirm** button.

Completed mode (SR0130.1.3)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0130.8.1)** process parameter (page 120))
3. Workflow identifier (taken from **Workflow definition (SR0130.8.3)** process parameter (page 121)) or the generated workflow identifier if the parameter is not specified)
Master workflow (taken from **Master workflow (SR0130.8.4)** process parameter (page 121))
Work center (taken from **Work center (SR0130.8.6)** process parameter (page 122))
Station (taken from **Station (SR0130.8.7)** process parameter (page 122))
Planned start (taken from **Planned start (SR0130.8.9)** process parameter (page 122))
Planned end (taken from **Planned end (SR0130.8.10)** process parameter (page 123))
Detail information (taken from **Detail information (SR0130.8.11)** process parameter (page 123))
The system displays only the labels and their data for which input has been configured or a default was generated.
4. **Confirm** button (completed).

Representation in Navigator (SR0130.4+)

The Navigator provides the following details:

Phase column (Framework capability)

- <Phase name>
- Example:
Create cleaning workflow

Information column (SR0130.4.1)

- <Workflow identifier>
- Example: WF1900002485

Action column

- There are no actions available.

Representation in Sub-report (SR0130.5+)

The sub-report contains the following information:

Common sub-report elements (Framework capability)

- <Start time>
- <Completion time>
- <Unit procedure> / <operation> / <phase>
- <Work center> / <station> / <device> - <phase completion user>

Sub-report elements (SR0130.5.1)

- Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
- Instruction text
- The system only prints the labels and their data for which input has been configured or a default was generated:
 - Workflow identifier (taken from **Workflow definition (SR0130.8.3)** process parameter (page 121)) or the generated default value
 - Master workflow (taken from **Master workflow (SR0130.8.4)** process parameter (page 121))
 - Work center (taken from **Work center (SR0130.8.6)** process parameter (page 122))
 - Station (taken from **Station (SR0130.8.7)** process parameter (page 122))
 - Planned start (taken from **Planned start (SR0130.8.9)** process parameter (page 122))
 - Planned end (taken from **Planned end (SR0130.8.10)** process parameter (page 123))
 - Detail information (taken from **Detail information (SR0130.8.11)** process parameter (page 123))

Business Logic (SR0130.2+)

The phase implements the following business logic.

Phase Mode

Business logic related to phase modes.

Manual completion mode (SR0130.2.1)

- Function: **Manual completion** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is active

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0130.1.2) layout (page 112).
Phase completion	30	See Confirm phase (SR0130.2.3) function (page 116).

Automatic completion mode (SR0130.2.2)

- Function: **Automatic completion** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is completed

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0130.1.2) layout (page 112).
	20	The system tries to confirm the phase immediately as if the operator had used the Confirm button of the phase to trigger the Confirm phase (SR0130.2.3) function (page 116).

Main Path

Business logic related to the main path:

Confirm phase (SR0130.2.3)

- Function: Completion of phase
- Trigger: Operator confirms phase
- Postcondition: Phase is completed

Step	#	Description
Operator confirms phase	10	Operator confirms that the workflow can be created.
System checks if work center and station exist	20	<p>If the work center configured with the Work center (SR0130.8.6) process parameter (page 122) does not exist, phase displays the Work center does not exist (SR0130.3.6.3) error message (page 126).</p> <p>If the station configured with the Station (SR0130.8.7) process parameter (page 122) does not exist, phase displays the Station does not exist (SR0130.3.6.4) error message (page 126).</p> <p>If both the configured work center and the configured station do not exist, a combined error message is displayed.</p> <p>When the error message has been confirmed, phase returns to the Active mode (SR0130.1.2) layout (page 112).</p> <p>Otherwise continue with step 30.</p>
System checks consistency between work center and station	30	<p>If the value of the Work center (SR0130.8.6) process parameter (page 122) is not the work center of the station configured with the Station (SR0130.8.7) process parameter (page 122), phase displays the Station and work center inconsistency (SR0130.3.6.1) error message (page 125). When the error message has been confirmed, phase returns to the Active mode (SR0130.1.2) layout (page 112).</p> <p>Otherwise continue with step 35.</p>
System checks master workflow	35	<p>If no approved master workflow recipe exists for the identifier configured with the Master workflow (SR0130.8.6) process parameter (page 121), phase displays the Master workflow not approved (SR0130.3.6.2) error message (page 125). When the error message has been confirmed, phase returns to the Active mode (SR0130.1.2) layout (page 112).</p> <p>Otherwise continue with step 40.</p>

Step	#	Description
System creates workflow	40	<p>If a workflow with the identifier configured with the Workflow definition (SR0130.8.6) process parameter (page 121) already exists, phase displays the Duplicate workflow identifier (SR0130.3.6.5) error message (page 126). When the error message has been confirmed, phase returns to the Active mode (SR0130.1.2) layout (page 112).</p> <p>Otherwise the workflow with the configured data for</p> <ul style="list-style-type: none"> ■ planned start according to the Planned start (SR0130.8.9) process parameter (page 122) ■ planned end according to the Planned end (SR0130.8.10) process parameter (page 123) ■ detail information according to the Detail information (SR0130.8.11) process parameter (page 123) ■ work center and station according to the Work center and station determination (SR0130.2.4) function (page 118) <p>is created and released.</p> <p>If the phase is running in the context of an order unit procedure, a treatment ID is defined for the order, and the system is configured accordingly (see Enable and Configure Treatment ID Support (SR0130.11.1) configuration key) (page 129), the workflow inherits the treatment ID from the order.</p>
System appends workflow	45	<p>If the Append Workflow (SR0130.8.5) process parameter (page 121) is set to Yes and the phase is running in the context of an order unit procedure, the created workflow is appended to the unit procedure. At start of the workflow the system will not ask the user if the workflow shall be appended to an order.</p>
System starts workflow	50	<p>If the Start workflow automatically (SR0130.8.8) process parameter (page 122) is set to Yes and</p> <ul style="list-style-type: none"> ■ a station is set with the Station (SR0130.8.7) process parameter (page 122), then the workflow is started at this station, ■ the workflow is dispatched to one work center, then the workflow is started at this work center, ■ the workflow is dispatched to several work centers, then the workflow is only started at the current work center and only if it is one of the work centers to which the workflow has been dispatched, otherwise the workflow is not started, ■ the workflow is dispatched neither to a station nor to a work center, then the workflow is started at the current work center. <p>Starting a workflow means it will be available in the Cockpit with its unit procedure and startable operation(s).</p>
	60	Phase is completed.

Work center and station determination (SR0130.2.4)

- Function: Determine the work center and station for the workflow
- Trigger: Phase creates the workflow
- Postcondition: Workflow is dispatched to work center and station

Step	#	Description
Station defined	10	If the Station (SR0130.8.7) process parameter (page 121) has a value, the workflow unit procedure will be dispatched to the station and the work center of the station. Station assignments defined with the master workflow are ignored. Otherwise continue with step 20.
Work center defined	20	If the Work center (SR0130.8.6) process parameter (page 122) has a value, the unit procedure of the workflow will be dispatched to this work center. Station assignments defined with the master workflow are ignored. Otherwise continue with step 30.
Stations defined at recipe	30	If the master workflow has stations assigned to its unit procedure, the unit procedure of the workflow will be dispatched to the stations and work centers defined with the master workflow. Otherwise continue with step 40.
Work center defined at recipe	40	If the master workflow has only work centers assigned to its unit procedure, the unit procedure of the workflow will be dispatched to these work centers.

Process Parameters (SR0130.8+)

The following process parameters define the behavior of the phase.

INSTRUCTION TABLE-SPECIFIC PARAMETERS

Instruction table definition (Framework capability)

Attribute	Type	Comment
Table layout	Choice list	Defines the layout of the instruction table holding the instruction texts. Available settings: 1 column, 2 columns, 3 columns, 4 columns, 5 columns. Default setting: 1 column.

Attribute	Type	Comment
First column narrow	Boolean	Defines if the first column of the table shall be narrow.
Show all borders	Boolean	Defines if the borders of the table shall be visible.

Instruction table text (Framework capability)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed in a column. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	
Column 3	HTML text	
Column 4	HTML text	
Column 5	HTML text	

INSTRUCTION LINK-SPECIFIC PARAMETERS

Instruction text with links (Framework capability)

Attribute	Type	Comment
Instruction text	HTML text	Instruction text to be displayed. For any text enclosed in curly brackets you can define a hyperlink with the Instruction link definition process parameter (page 120). Example: Refer to {SOP1270} for guidance. Maximum length is 2000 characters (including HTML tags).

Instruction link definition (Framework capability)

Attribute	Type	Comment
Link text	Text	Text to be used as link. For any text enclosed in curly brackets within the instruction text you can define a link with the Link URL attribute. Including the brackets in the link text is optional. Maximum length is 80 characters.
Link URL	Text	URL of the file to be displayed. The link opens the external application assigned to the file type by the operating system. Maximum length is 256 characters.

BASIC PARAMETERS

Instruction (SR0130.8.1)

Attribute	Type	Comment
Text	HTML text	Instruction text to be displayed. Restriction: Maximum length is 2000 characters (including HTML tags).

Mode (SR0130.8.2)

Attribute	Type	Comment
Mode	Choice list	Defines the processing mode. Manual completion (default): Operator confirms the phase. Automatic completion: Phase automatically tries to confirm the phase.

Workflow definition (SR0130.8.3)

Attribute	Type	Comment
Identifier	String	Optional parameter to define a unique workflow identifier for the workflow to be created. If empty, a workflow identifier with the configured default prefix is generated. Maximum length is 12 characters.

Master workflow (SR0130.8.4)

Attribute	Type	Comment
Identifier	String	Defines the master workflow identifier without version to be used for generating the workflow. The Master Workflow Selection editor (Framework capability) only lists Scheduled and Approved master workflows. Maximum length is 50 characters.

Append workflow (SR0130.8.5)

Attribute	Type	Comment
Enabled	Flag	Controls if the created workflow is automatically appended to the current unit procedure. If the phase runs in the context of a workflow, the parameter is ignored. Default setting: Yes

Work center (SR0130.8.6)

Attribute	Type	Comment
Identifier	String	Optional parameter to define the work center to which the created workflow is dispatched. The Work Center Selection editor is a Framework capability . Maximum length is 20 characters.

Station (SR0130.8.7)

Attribute	Type	Comment
Identifier	String	Optional parameter to define the station to which the created workflow is dispatched. The Station Selection editor is a Framework capability . Maximum length is 20 characters.

Start workflow automatically (SR0130.8.8)

Attribute	Type	Comment
Enabled	Flag	Controls if the created workflow will be available in the cockpit if it is dispatched to a work center or a station. Default setting: No

Planned start (SR0130.8.9)

Attribute	Type	Comment
Timestamp	Timestamp	Optional information shown to an operator in the workflow processing list of the work center to which a workflow has been dispatched, unless the workflow is started automatically.

Planned end (SR0130.8.10)

Attribute	Type	Comment
Timestamp	Timestamp	Optional information shown to an operator in the workflow processing list of the work center to which a workflow has been dispatched, unless the workflow is started automatically.

Detail information (SR0130.8.11)

Attribute	Type	Comment
Value	String	Optional information shown to an operator in the workflow processing list of the work center to which a workflow has been dispatched, unless the workflow is started automatically. Maximum length is 20 characters.

CONFIGURATION OF USER-TRIGGERED EXCEPTIONS**Skip workflow creation (SR0130.8.12)**

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 250 characters.

See also **Skip workflow creation (SR0130.3.1.1)** user-triggered exception (page 124).

Exceptions (SR0130.3+)

The phase supports user-defined, user-triggered (page 77), system-triggered (page 76), and post-completion exceptions (page 78) and their configuration by means of process parameters (page 71).

User-defined exceptions cannot be configured by process parameters since they are provided by the framework and independent of phases.

System-triggered Exceptions

There are no system-triggered exceptions available.

User-triggered Exceptions (SR0130.3.1+)

A user-triggered exception is represented in the list of available user-triggered exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following user-triggered exceptions are available.

Skip workflow creation (SR0130.3.1.1)

The **Skip workflow creation** exception allows an operator to skip the phase if the situation on the shop floor does not require the creation of a workflow anymore. To solve issues caused by phase misconfiguration or error cases, the framework provides the **Abort Phase (SR1200.3.1)** and the **Repair Phase (SR1200.3.2)** functions, see "Functional Requirement Specification Execution Framework" [A1] (page 155).

Representation during exception handling:

- Instruction
Skip the workflow creation.
Confirm button.
- Exception text:
<Exception text>
(taken from **Skip workflow parameter (SR0130.8.12)** process parameter (page 123))
Skip the workflow creation.
- Example:
Supervisor needs to be informed to create the required workflow!
Skip the workflow creation.

Skip workflow creation - Logic (SR0130.3.1.1.1)

- Trigger: Exception is selected
- Postcondition: **Create workflow** phase is skipped.

Step	#	Description
Operator confirms exception	10	Phase shows exception description to be signed according to Skip workflow creation (SR0130.8.12) process parameter (page 123).
Operator signs exception	20	<ul style="list-style-type: none"> ■ Phase records the exception. ■ Operator completes the phase manually without creation of a workflow.

Post-completion Exceptions

There are no post-completion exceptions available.

Information Messages

There are no information messages available.

Questions

There are no questions available.

Decisions

There are no decisions available.

Error Messages (SR0130.3.6+)

Error messages are represented in an error message dialog containing a message type-specific icon, the error message, and an **OK** button.

The following error messages are available to inform the operator about error conditions.

Station and work center inconsistency (SR0130.3.6.1)

UI text	Comment
<Information that the configured work center is not the work center of the configured station.>	Message pack: PhaseEbrCreateWorkflow<version> Message ID: WorkcenterStationInconsistent_Error

Master workflow not approved (SR0130.3.6.2)

UI text	Comment
<Information that there is no approved master workflow with the configured identifier available.>	Message pack: PhaseEbrCreateWorkflow<version> Message ID: NoValidWorkflow_Error

Work center does not exist (SR0130.3.6.3)

UI text	Comment
<Information that the configured work center does not exist.>	Message pack: PhaseEbrCreateWorkflow<version> Message ID: NoValidWorkcenter_Error

Station does not exist (SR0130.3.6.4)

UI text	Comment
<Information that the configured station does not exist.>	Message pack: PhaseEbrCreateWorkflow<version> Message ID: NoValidStation_Error

Duplicate workflow identifier (SR0130.3.6.5)

UI text	Comment
<Information that the configured workflow identifier is already in use.>	Message pack: PhaseEbrCreateWorkflow<version> Message ID: BadWorkflowIdentifier_Error

Output Variables (SR0130.9+)

The following output variables are available to reference the phase's output.

Instance count (Framework capability)

- Data type: Long
- Usage: The output variable provides the count of the number of instances the phase has been processed, for example in a loop. The count is also increased when the phase is skipped from an operator's perspective, since the phase is still executed, but as a hidden phase.
The count variable of a phase that has not been executed provides 0 as output value.

Start time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the start time of the phase.

Completion time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the completion time of the phase.

Identifier (Framework capability)

- Data type: String
- Usage: The output variable provides the identifier of the phase.

Workflow identifier (SR0130.9.1)

- Data type: String
- Usage: The output variable provides the identifier of the created workflow taken from the **Workflow definition (SR0130.8.3)** process parameter (page 121) or the generated default value.

Planned start (SR0130.9.2)

- Data type: Timestamp
- Usage: The output variable provides the planned start time of the workflow taken from **Planned start (SR0130.8.9)** process parameter (page 122).

Planned end (SR0130.9.3)

- Data type: Timestamp
- Usage: The output variable provides the planned end time of the workflow taken from **Planned end (SR0130.8.10)** process parameter (page [123](#)).

Detail information (SR0130.9.4)

- Data type: String
- Usage: The output variable provides the detail information about the workflow taken from **Detail information (SR0130.8.11)** process parameter (page [123](#)).

Creation result (SR0130.9.5)

- Data type: String
- Values: CREATED, SKIPPED
- Usage: The output variable states if a workflow was created or the phase was skipped.
 - The value is `CREATED` if the creation of the workflow was successful.
 - The value is `SKIPPED` if no workflow was created and the phase was skipped by the **Skip workflow creation (SR0130.3.1.1)** user triggered exception (page [124](#)).

Configuration Keys (SR0130.11+)

The following configuration keys are available to configure the phase's behavior.

Enable and Configure Treatment ID Support (SR0130.11.1)

- **Phase/TreatmentIDSupport**
- **Type:** String
- **Value:** Off
- **Description:** The configuration applies to material identification with the **D Identify material** phase and the **Identify material** phase and to workflow creation with the **Create workflow** phase.
 If the value is set to **Off**, no treatment ID is checked during material identification and a created workflow does not inherit the treatment ID of the order.
 If the value is set to **TreatmentIDMandatory**, all orders need to have a treatment ID set. If the identified batch has a treatment ID, it must be equal to the order's treatment ID.
 If the value is set to **TreatmentIDOptional**, an order does not have to have a treatment ID set. If the identified batch has a treatment ID, it has to be equal to the order's treatment ID.
- **Evaluated:** At subplot or batch identification and at workflow creation.
- **Range:** [Off, TreatmentIDMandatory, TreatmentIDOptional]

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- FT PharmaSuite® 10.01.00 - Functional Requirement Specification EBR Phases
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Write Context Data Phase (SR0140+)

The **Write context data** phase allows to store processing data from an order or workflow for later use.

Example use cases are:

- Store the equipment identifier of a filter to allow a filter test workflow to check that it runs the test against the planned filter.
- Store and increase a counter value in a loop for a number of used containers until a planned number of containers per type has been filled.

Each recorded value is stored in the batch record, thereby becoming available for documentation purposes in the sub-report and batch report (page 135).

Anomalies that occur during processing are covered by the phase exception handling (page 148) (e.g. context and key check).

After completion, the phase displays the data written to the context.

The Navigator displays the identifier of the context.

Key	Value
EQ-ID	R-001 (T)
ID-TIME	4/19/2019 1:36:55 PM CEST

Figure 12: Write context data during execution

Layout

The phase provides individual layouts for its representation during execution (page 131), in the Navigator (page 135), and in the sub-report (page 135).

Representation during Execution (SR0140.1+)

The representation during execution depends on the phase mode.

Preview mode (SR0140.1.1)

1. <Instruction text>
(taken from **Instruction (SR0140.8.1)** process parameter (page 143))
2. Context identifier (taken from **Context definition (SR0140.8.3)** process parameter (page 144)).
3. **Confirm** button (disabled).

Active mode (SR0140.1.2)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0140.8.1)** process parameter (page 143))
3. Context identifier (taken from **Context definition (SR0140.8.3)** process parameter (page 144)).
4. List of up to 50 bundle parameters in the order of the bundle-specific process parameters:
 - **BigDecimal Value Bundle:**
 - Key
(taken from the [BigDecimal] **Master bundle identifier (SR0140.8.6)** process parameter (page 145))
 - Value
(taken from the [BigDecimal] **Master bundle identifier (SR0140.8.6)** process parameter (page 145))
 - **Boolean Value Bundle:**
 - Key
(taken from the [Boolean] **Master bundle identifier (SR0140.8.7)** process parameter (page 146))
 - Value
(taken from the [Boolean] **Master bundle identifier (SR0140.8.7)** process parameter (page 146))
 - **Duration Value Bundle:**
 - Key
(taken from the [Duration] **Master bundle identifier (SR0140.8.8)** process parameter (page 146))
 - Value
(taken from the [Duration] **Master bundle identifier (SR0140.8.8)** process parameter (page 146))

■ **Long Value Bundle:**

- **Key**
(taken from the [Long] **Master bundle identifier (SR0140.8.9)** process parameter (page 147))
- **Value**
(taken from the [Long] **Master bundle identifier (SR0140.8.9)** process parameter (page 147))

■ **Measured Value Bundle:**

- **Key**
(taken from the [Measured Value] **Master bundle identifier (SR0140.8.10)** process parameter (page 147))
- **Value**
(taken from the [Measured Value] **Master bundle identifier (SR0140.8.10)** process parameter (page 147))

■ **String Value Bundle:**

- **Key**
(taken from the [String] **Master bundle identifier (SR0140.8.11)** process parameter (page 148))
- **Value**
(taken from the [String] **Master bundle identifier (SR0140.8.11)** process parameter (page 148))

■ **Timestamp Value Bundle:**

- **Key**
(taken from the [Timestamp] **Master bundle identifier (SR0140.8.12)** process parameter (page 148))
- **Value**
(taken from the [Timestamp] **Master bundle identifier (SR0140.8.12)** process parameter (page 148))

5. **Confirm** button.

Completed mode (SR0140.1.3)

1. Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
2. <Instruction text>
(taken from **Instruction (SR0140.8.1)** process parameter (page 143))
3. Context identifier (taken from **Context definition (SR0140.8.3)** process parameter (page 144)).

4. List of up to 50 bundle parameters in the order of the bundle-specific process parameters:

■ **BigDecimal Value Bundle:**

- Key
(taken from the [BigDecimal] **Master bundle identifier (SR0140.8.6)** process parameter (page 145))
- Value
(taken from the [BigDecimal] **Master bundle identifier (SR0140.8.6)** process parameter (page 145))

■ **Boolean Value Bundle:**

- Key
(taken from the [Boolean] **Master bundle identifier (SR0140.8.7)** process parameter (page 146))
- Value
(taken from the [Boolean] **Master bundle identifier (SR0140.8.7)** process parameter (page 146))

■ **Duration Value Bundle:**

- Key
(taken from the [Duration] **Master bundle identifier (SR0140.8.8)** process parameter (page 146))
- Value
(taken from the [Duration] **Master bundle identifier (SR0140.8.8)** process parameter (page 146))

■ **Long Value Bundle:**

- Key
(taken from the [Long] **Master bundle identifier (SR0140.8.9)** process parameter (page 147))
- Value
(taken from the [Long] **Master bundle identifier (SR0140.8.9)** process parameter (page 147))

■ **Measured Value Bundle:**

- Key
(taken from the [Measured Value] **Master bundle identifier (SR0140.8.10)** process parameter (page 147))
- Value
(taken from the [Measured Value] **Master bundle identifier (SR0140.8.10)** process parameter (page 147))

- **String Value Bundle:**

- **Key**
(taken from the [String] **Master bundle identifier (SR0140.8.11)** process parameter (page 148))
- **Value**
(taken from the [String] **Master bundle identifier (SR0140.8.11)** process parameter (page 148))

- **Timestamp Value Bundle:**

- **Key**
(taken from the [Timestamp] **Master bundle identifier (SR0140.8.12)** process parameter (page 148))
- **Value**
(taken from the [Timestamp] **Master bundle identifier (SR0140.8.12)** process parameter (page 148))

5. **Confirm** button (completed).

Representation in Navigator (SR0140.4+)

The Navigator provides the following details:

Phase column (Framework capability)

- <Phase name>
- Example:
Write workflow context

Information column (SR0140.4.1)

- <Context identifier> (taken from **Context definition (SR0140.8.3)** process parameter (page 144)).
- Example: WF1900002485

Action column

- There are no actions available.

Representation in Sub-report (SR0140.5+)

The sub-report contains the following information:

Common sub-report elements (Framework capability)

- <Start time>

- <Completion time>
- <Unit procedure> / <operation> / <phase>
- <Work center> / <station> / <device> - <phase completion user>

Sub-report elements (SR0140.5.1)

- Instruction table panel and/or instruction link panel
(only if an instruction table and/or instruction link is defined for the phase)
- Instruction text
- Context identifier
- Table of values that have been written (in the order of the bundle-specific process parameters):
 - **BigDecimal Value Bundles:**
 - Key
 - Value
 - **Boolean Value Bundles:**
 - Key
 - Value
 - **Duration Value Bundles:**
 - Key
 - Value
 - **Long Value Bundles:**
 - Key
 - Value
 - **Measured Value Bundles:**
 - Key
 - Value
 - **String Value Bundles:**
 - Key
 - Value
 - **Timestamp Value Bundles:**
 - Key
 - Value

Business Logic (SR0140.2+)

The phase implements the following business logic.

Phase Mode

Business logic related to phase modes.

Manual completion mode (SR0140.2.1)

- Function: **Manual completion** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is active

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0140.1.2) layout (page 132).
Phase completion	20	See Confirm phase (SR0140.2.5) function (page 138).

Automatic completion mode (SR0140.2.2)

- Function: **Automatic completion** mode of phase
- Type: Phase mode
- Trigger: Phase becomes active
- Postcondition: Phase is completed

Step	#	Description
Phase activation	10	Phase displays its user interface according to the Active mode (SR0140.1.2) layout (page 132).
	20	The system tries to confirm the phase immediately as if the operator had used the Confirm button of the phase to trigger the Confirm phase (SR0140.2.5) function (page 138).

Main Path

Business logic related to the main path:

Confirm phase (SR0140.2.3)

- Function: Completion of phase
- Trigger: Operator confirms phase
- Postcondition: Phase is completed

Step	#	Description
Operator confirms phase	10	Operator confirms that the context data shall be stored.
System checks context identifier	20	If no context identifier is configured with the Context definition (SR0140.8.3) process parameter (page 144), phase displays the Context identifier not defined (SR0140.3.6.2) error message (page 152). When the error message has been confirmed, phase returns to the Active mode (SR0140.1.2) layout. Otherwise continue with step 30.
System checks keys	30	<p>If no key is configured at any of the bundle process parameters</p> <ul style="list-style-type: none"> ■ [BigDecimal] Master (Bundle identifier) (SR0140.8.6) process parameter (page 145), ■ [Boolean] Master (Bundle identifier) (SR0140.8.7) process parameter (page 146), ■ [Duration] Master (Bundle identifier) (SR0140.8.8) process parameter (page 146), ■ [Long] Master (Bundle identifier) (SR0140.8.9) process parameter (page 147), ■ [MeasuredValue] Master (Bundle identifier) (SR0140.8.10) process parameter (page 147), ■ [String] Master (Bundle identifier) (SR0140.8.11) process parameter (page 148), ■ [Timestamp] Master (Bundle identifier) (SR0140.8.12) process parameter (page 148), <p>phase displays the Key not defined (SR0140.3.6.1) error message (page 152). When the error message has been confirmed, phase returns to the Active mode (SR0140.1.2) layout (page 132). Otherwise continue with step 40.</p>

Step	#	Description
System checks data type consistency	40	<p>If context data for the context identifier defined by Context definition (SR0140.8.3) process parameter (page 144) and key defined at any of the bundle process parameters</p> <ul style="list-style-type: none"> ■ [BigDecimal] Master (Bundle identifier) (SR0140.8.6) process parameter (page 145), ■ [Boolean] Master (Bundle identifier) (SR0140.8.7) process parameter (page 146), ■ [Duration] Master (Bundle identifier) (SR0140.8.8) process parameter (page 146), ■ [Long] Master (Bundle identifier) (SR0140.8.9) process parameter (page 147), ■ [MeasuredValue] Master (Bundle identifier) (SR0140.8.10) process parameter (page 147), ■ [String] Master (Bundle identifier) (SR0140.8.11) process parameter (page 148), ■ [Timestamp] Master (Bundle identifier) (SR0140.8.12) process parameter (page 148), <p>already exists with a different data type than that of the bundle process parameters, phase displays the Change of data type not allowed (SR0140.3.6.3) error message (page 152). When the error message has been confirmed, phase returns to the Active mode (SR0140.1.2) layout (page 132). Otherwise continue with step 50.</p>

Step	#	Description
System checks if context data already exists	50	<p>If check is enabled according to the Context and key check (SR0140.8.5) process parameter (page 144) and both context data for the context identifier defined by the Context definition (SR0140.8.3) process parameter (page 144) and key defined at any of the bundle process parameters</p> <ul style="list-style-type: none"> ■ [BigDecimal] Master (Bundle identifier) (SR0140.8.6) process parameter (page 145), ■ [Boolean] Master (Bundle identifier) (SR0140.8.7) process parameter (page 146), ■ [Duration] Master (Bundle identifier) (SR0140.8.8) process parameter (page 146), ■ [Long] Master (Bundle identifier) (SR0140.8.9) process parameter (page 147), ■ [MeasuredValue] Master (Bundle identifier) (SR0140.8.10) process parameter (page 147), ■ [String] Master (Bundle identifier) (SR0140.8.11) process parameter (page 148), ■ [Timestamp] Master (Bundle identifier) (SR0140.8.12) process parameter (page 148), <p>already exist, phase creates the Context and key check (SR0140.3.2.1) system-triggered exception (page 149). Otherwise continue with step 60.</p>

Step	#	Description
System writes context data	60	<p>Phase stores the context data with the context identifier defined by the Context definition (SR0140.8.3) process parameter (page 144) and key and value defined at any of the bundle process parameters</p> <ul style="list-style-type: none"> ■ [BigDecimal] Master (Bundle identifier) (SR0140.8.6) process parameter (page 145), ■ [Boolean] Master (Bundle identifier) (SR0140.8.7) process parameter (page 146), ■ [Duration] Master (Bundle identifier) (SR0140.8.8) process parameter (page 146), ■ [Long] Master (Bundle identifier) (SR0140.8.9) process parameter (page 147), ■ [MeasuredValue] Master (Bundle identifier) (SR0140.8.10) process parameter (page 147), ■ [String] Master (Bundle identifier) (SR0140.8.11) process parameter (page 148), ■ [Timestamp] Master (Bundle identifier) (SR0140.8.12) process parameter (page 148), <p>in the database.</p>
	70	Phase is completed.

Process Parameters (SR0140.8+)

The following process parameters define the behavior of the phase.

INSTRUCTION TABLE-SPECIFIC PARAMETERS

Instruction table definition (Framework capability)

Attribute	Type	Comment
Table layout	Choice list	<p>Defines the layout of the instruction table holding the instruction texts. Available settings: 1 column, 2 columns, 3 columns, 4 columns, 5 columns.</p> <p>Default setting: 1 column.</p>

Attribute	Type	Comment
First column narrow	Boolean	Defines if the first column of the table shall be narrow.
Show all borders	Boolean	Defines if the borders of the table shall be visible.

Instruction table text (Framework capability)

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed in a column. Restriction: Maximum length is 2000 characters (including HTML tags).
Column 2	HTML text	
Column 3	HTML text	
Column 4	HTML text	
Column 5	HTML text	

INSTRUCTION LINK-SPECIFIC PARAMETERS

Instruction text with links (Framework capability)

Attribute	Type	Comment
Instruction text	HTML text	Instruction text to be displayed. For any text enclosed in curly brackets you can define a hyperlink with the Instruction link definition process parameter (page 143). Example: Refer to {SOP1270} for guidance. Maximum length is 2000 characters (including HTML tags).

Instruction link definition (Framework capability)

Attribute	Type	Comment
Link text	Text	Text to be used as link. For any text enclosed in curly brackets within the instruction text you can define a link with the Link URL attribute. Including the brackets in the link text is optional. Maximum length is 80 characters.
Link URL	Text	URL of the file to be displayed. The link opens the external application assigned to the file type by the operating system. Maximum length is 256 characters.

BASIC PARAMETERS

Instruction (SR0140.8.1)

Attribute	Type	Comment
Text	HTML text	Instruction text to be displayed. Restriction: Maximum length is 2000 characters (including HTML tags).

Mode (SR0140.8.2)

Attribute	Type	Comment
Mode	Choice list	Defines the processing mode. Manual completion (default): Operator confirms the phase. Automatic completion: Phase is automatically completed after the data has been written.

Context definition (SR0140.8.3)

Attribute	Type	Comment
Identifier	String	Defines the context identifier for all key/value pairs. Maximum length is 250 characters.

CONFIGURATION OF SYSTEM-TRIGGERED EXCEPTIONS

Context and key check (SR0140.8.5)

Attribute	Type	Comment
Enabled	String	Controls if a check is performed.
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 250 characters.

See also [Context and key check \(SR0140.3.2.1\)](#) system-triggered exception (page 149).

CONFIGURATION OF USER-TRIGGERED EXCEPTIONS

Override value (SR0140.8.4)

Attribute	Type	Comment
Risk assessment	Choice list	Defines the risk level of the exception and thus controls the related signature privilege. Available settings: None , Low , Low (mandatory comment) , Medium , Medium (mandatory comment) , High , High (mandatory comment) . Default setting: High .

Attribute	Type	Comment
Exception text	Text	Defines the exception description used during exception handling and within the batch record. Maximum length is 250 characters.

See also **Override value (SR0140.3.1.1)** user-triggered exception (page 150).

BigDecimal Value Bundle

[BigDecimal] Bundle process parameters (Framework capability)

For the master process parameter of a bundle, its internal identifier is populated from the bundle identifier.

For all other process parameters of the bundle, their internal identifier is a concatenation of the bundle identifier and the process parameter name.

This framework capability refers to **Bundle Process Parameters (SR3146.9.7.4.1)** in "Functional Requirement Specification Recipe and Workflow Management" [A2].

[BigDecimal] Master (Bundle identifier) (SR0140.8.6)

Attribute	Type	Comment
Key	String	Defines the key that can be used with the context identifier to retrieve the value. Maximum length is 250 characters.
Value	BigDecimal	Defines the value for the key and context identifier.

Boolean Value Bundle

[Boolean] Bundle process parameters (Framework capability)

For the master process parameter of a bundle, its internal identifier is populated from the bundle identifier.

For all other process parameters of the bundle, their internal identifier is a concatenation of the bundle identifier and the process parameter name.

This framework capability refers to **Bundle Process Parameters (SR3146.9.7.4.1)** in "Functional Requirement Specification Recipe and Workflow Management" [A2].

[Boolean] Master (Bundle identifier) (SR0140.8.7)

Attribute	Type	Comment
Key	String	Defines the key that can be used with the context identifier to retrieve the value. Maximum length is 250 characters.
Value	Boolean	Defines the value for the key and context identifier.

Duration Value Bundle

[Duration] Bundle process parameters (Framework capability)

For the master process parameter of a bundle, its internal identifier is populated from the bundle identifier.

For all other process parameters of the bundle, their internal identifier is a concatenation of the bundle identifier and the process parameter name.

This framework capability refers to **Bundle Process Parameters (SR3146.9.7.4.1)** in "Functional Requirement Specification Recipe and Workflow Management" [A2].

[Duration] Master (Bundle identifier) (SR0140.8.8)

Attribute	Type	Comment
Key	String	Defines the key that can be used with the context identifier to retrieve the value. Maximum length is 250 characters.
Value	Duration	Defines the value for the key and context identifier.

Long Value Bundle

[Long] Bundle process parameters (Framework capability)

For the master process parameter of a bundle, its internal identifier is populated from the bundle identifier.

For all other process parameters of the bundle, their internal identifier is a concatenation of the bundle identifier and the process parameter name.

This framework capability refers to **Bundle Process Parameters (SR3146.9.7.4.1)** in "Functional Requirement Specification Recipe and Workflow Management" [A2].

[Long] Master (Bundle identifier) (SR0140.8.9)

Attribute	Type	Comment
Key	String	Defines the key that can be used with the context identifier to retrieve the value. Maximum length is 250 characters.
Value	Long	Defines the value for the key and context identifier.

Measured Value Bundle**[Measured Value] Bundle process parameters (Framework capability)**

For the master process parameter of a bundle, its internal identifier is populated from the bundle identifier.

For all other process parameters of the bundle, their internal identifier is a concatenation of the bundle identifier and the process parameter name.

This framework capability refers to **Bundle Process Parameters (SR3146.9.7.4.1)** in "Functional Requirement Specification Recipe and Workflow Management" [A2].

[Measured Value] Master (Bundle identifier) (SR0140.8.10)

Attribute	Type	Comment
Key	String	Defines the key that can be used with the context identifier to retrieve the value. Maximum length is 250 characters.
Value	MeasuredValue	Defines the value for the key and context identifier.

String Value Bundle**[String] Bundle process parameters (Framework capability)**

For the master process parameter of a bundle, its internal identifier is populated from the bundle identifier.

For all other process parameters of the bundle, their internal identifier is a concatenation of the bundle identifier and the process parameter name.

This framework capability refers to **Bundle Process Parameters (SR3146.9.7.4.1)** in "Functional Requirement Specification Recipe and Workflow Management" [A2].

[String] Master (Bundle identifier) (SR0140.8.11)

Attribute	Type	Comment
Key	String	Defines the key that can be used with the context identifier to retrieve the value. Maximum length is 250 characters.
Value	String	Defines the value for the key and context identifier.

Timestamp Value Bundle

[Timestamp] Bundle process parameters (Framework capability)

For the master process parameter of a bundle, its internal identifier is populated from the bundle identifier.

For all other process parameters of the bundle, their internal identifier is a concatenation of the bundle identifier and the process parameter name.

This framework capability refers to **Bundle Process Parameters (SR3146.9.7.4.1)** in "Functional Requirement Specification Recipe and Workflow Management" [A2].

[Timestamp] Master (Bundle identifier) (SR0140.8.12)

Attribute	Type	Comment
Key	String	Defines the key that can be used with the context identifier to retrieve the value. Maximum length is 250 characters.
Value	Timestamp	Defines the value for the key and context identifier.

Exceptions (SR0140.3+)

The phase supports user-defined, user-triggered (page 109), system-triggered (page 109), and post-completion exceptions (page 109) and their configuration by means of process parameters (page 106).

User-defined exceptions cannot be configured by process parameters since they are provided by the framework and independent of phases.

System-triggered Exceptions (SR0140.3.2+)

A system-triggered exception is represented in a message dialog along with an **Exception** button, in the Exception Window as the read-only description of the exception, and in the batch report.

The following system-triggered exceptions are available.

Context and key check (SR0140.3.2.1)

If enabled, the **Context and key check** exception checks if for the context identifier and key there is already a data set, which would consequently be updated.

Representation of the exception:

- <Exception text>
(taken from **Context and key check (SR0140.8.5)** process parameter (page 144))
The <Key> key already exists and will be updated.
- Example:
Unexpected update of existing key, review of recipe is needed.
The washing program key already exists and will be updated.

Context and key check Logic (SR0140.3.2.1.1)

- Trigger: Operator confirms phase
- Postcondition: Exception is recorded

Step	#	Description
Operator confirms phase	10	Phase creates Context and key check (SR0140.3.2.1) system-triggered exception.
Operator triggers and confirms exception	20	Phase records the exception and returns to the Active mode (SR0140.1.2) layout (page 132).

User-triggered Exceptions (SR0140.3.1+)

A user-triggered exception is represented in the list of available user-triggered exceptions in the Exception Window, as the description of the exception, and in the batch report.

The following user-triggered exceptions are available.

Override value (SR0140.3.1.1)

The **Override value** exception allows an operator to change the value for a bundle parameter that was defined in the master recipe or master workflow. Each defined bundle parameter allows a data type-specific change of the value.

Representation during exception handling:

- Instruction
 <bundle parameter key>
 Override the defined value:
 Current value <current value>
 Override value <box for a new value, in case of a boolean value bundle display options (Yes, No)>
 Confirm button.
- Exception text:
 <Exception text>
 (taken from **Override value (SR0140.8.4)** process parameter (page 144))
 Manual override of value for the <bundle parameter key> key.
 Old value: <Old value>
 New value: <New value>
- Example:
 Review of recipe definitions required.
 Manual override of value for the washing program key.
 Old value: CleanP102
 New value: CleanP109

Override value - Logic (SR0140.3.1.1.1)

- Trigger: Exception is selected
- Postcondition: Changed value is available

Step	#	Description
Operator confirms exception	10	<p>Phase checks the format of the input. In case of an input with wrong format, the phase shows an error message. Depending on the type of the bundle parameter, the following error messages are displayed:</p> <ul style="list-style-type: none"> ■ Override BigDecimal value with wrong format (SR0140.3.6.4) error (page 152) ■ Override Duration value with wrong format (SR0140.3.6.5) error (page 152) ■ Override Long value with wrong format (SR0140.3.6.6) error (page 153) ■ Override Measured Value with wrong format (SR0140.3.6.7) error (page 153) ■ Override Timestamp value with wrong format (SR0140.3.6.8) error (page 153) <p>If no error has occurred, phase shows the exception description to be signed according to the Override value (SR0140.8.4) process parameter (page 144).</p>
Operator signs exception	20	Phase records the exception and updates the value for key and context identifier to be used.

Post-completion Exceptions

There are no post-completion exceptions available.

Information Messages

There are no information messages available.

Questions

There are no questions available.

Decisions

There are no decisions available.

Error Messages (SR0140.3.6+)

Error messages are represented in an error message dialog containing a message type-specific icon, the error message, and an **OK** button.

The following error messages are available to inform the operator about error conditions.

Key not defined (SR0140.3.6.1)

UI text	Comment
<Information that a key is not defined for a bundle parameter.>	Message pack: PhaseWriteContextData<version> Message ID: ContextDataKeyEmptyException_msg

Context identifier not defined (SR0140.3.6.2)

UI text	Comment
<Information that context identifier is not defined.>	Message pack: PhaseWriteContextData<version> Message ID: ContextIdentifierEmptyException_msg

Change of data type not allowed (SR0140.3.6.3)

UI text	Comment
<Information that an existing key exists with different data type. Change of data type is not allowed.>	Message pack: PhaseWriteContextData<version> Message ID: ContextDataExistsWrongDataTypeException_msg

Override BigDecimal value with wrong format (SR0140.3.6.4)

UI text	Comment
<Information that the override value has a wrong format.>	Message pack: PhaseWriteContextData<version> Message ID: OverrideBigDecimalValueError_ErrorMsg

Override Duration value with wrong format (SR0140.3.6.5)

UI text	Comment
<Information that the override value has a wrong format.>	Message pack: PhaseWriteContextData<version> Message ID: OverrideDurationValueError_ErrorMsg

Override Long value with wrong format (SR0140.3.6.6)

UI text	Comment
<Information that the override value has a wrong format.>	Message pack: PhaseWriteContextData<version> Message ID: OverrideLongValueError_ErrorMsg

Override Measured Value with wrong format (SR0140.3.6.7)

UI text	Comment
<Information that the override value has a wrong format.>	Message pack: PhaseWriteContextData<version> Message ID: OverrideMeasuredValueValueError_ErrorMsg

Override Timestamp Value with wrong format (SR0140.3.6.8)

UI text	Comment
<Information that the override value has a wrong format.>	Message pack: PhaseWriteContextData<version> Message ID: OverrideTimestampValueError_ErrorMsg

Output Variables (SR0140.9+)

The following output variables are available to reference the phase's output.

Instance count (Framework capability)

- Data type: Long
- Usage: The output variable provides the count of the number of instances the phase has been processed, for example in a loop. The count is also increased when the phase is skipped from an operator's perspective, since the phase is still executed, but as a hidden phase.
The count variable of a phase that has not been executed provides 0 as output value.

Start time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the start time of the phase.

Completion time (Framework capability)

- Data type: Timestamp
- Usage: The output variable provides the completion time of the phase.

Identifier (Framework capability)

- Data type: String
- Usage: The output variable provides the identifier of the phase.

Context identifier (SR0140.9.1)

- Data type: String
- Usage: The output variable provides the context identifier that was used to store the keys and values and is taken from the **Context definition (SR0140.8.3)** process parameter (page [144](#)).

Reference Documents

The following documents are available from the Rockwell Automation Download Site.

No.	Document Title	Part Number
A1	PharmaSuite Functional Requirement Specification Execution Framework	PSFRSEF-RM006B-EN-E

TIP

To access the Rockwell Automation Download Site, you need to acquire a user account from Rockwell Automation Sales or Support.

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- FT PharmaSuite® 10.01.00 - Functional Requirement Specification EBR Phases
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Document Information

The document information covers various data related to the document.

Approval

This document has been approved electronically via the Rockwell Automation Document Management System (DMS). The required approvers of this document include the following:

Name	Role
Norbert Ern	Product Owner
Jürgen Stieber	Technical Lead
Ignaz Wangler	Test Lead

Version Information

Object	Version
PharmaSuite	10.01.00
Get process value	2.1 MR7
Get text value	2.1 MR6
Show instruction text	2.0 MR6
Show document	2.0 MR6
Get choice value	1.0 MR6
Upload image	1.0 MR9
Upload PDF	1.0 MR9
Show URL	1.0 MR5
Create workflow	1.0 MR1
Write context data	1.0 MR1
Functional Requirement Specification	1.0

Revision History

The following tables describe the history of this document.

Changes related to the document:

Object	Description	Document
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Changes related to "Get Process Value Phase" (page 3):

Object	Description	Document
Active Mode (SR0010.1.1) (page 4)	Update Instruction link panel added.	1.0
Completed Mode (SR0010.1.3) (page 5)	Update Instruction link panel added.	1.0
Instruction Text with Links (Framework Capability) (page 8)	New process parameter.	1.0
Instruction Link Definition (Framework Capability) (page 8)	New process parameter.	1.0

Changes related to "Get Text Value Phase" (page 19):

Object	Description	Document
Active Mode (SR0020.1.1) (page 20)	Update Instruction link panel added.	1.0
Completed Mode (SR0020.1.3) (page 21)	Update Instruction link panel added.	1.0
Instruction Text with Links (Framework Capabilities) (page 24)	New process parameter.	1.0
Instruction Link Definition (Framework Capabilities) (page 24)	New process parameter.	1.0

Changes related to "Show Instruction Text Phase" (page 33):

Object	Description	Document
Active Mode (SR0030.1.1) (page 33)	Update Instruction link panel added.	1.0

Object	Description	Document
Completed Mode (SR0030.1.3) (page 34)	Update Instruction link panel added.	1.0
Instruction Text with Links (Framework Capabilities) (page 36)	New process parameter.	1.0
Instruction Link Definition (Framework Capabilities) (page 36)	New process parameter.	1.0

Changes related to "Show Document Phase" (page 41):

Object	Description	Document
Active Mode (SR0040.1.1) (page 42)	Update Instruction link panel added.	1.0
Completed Mode (SR0040.1.3) (page 42)	Update Instruction link panel added.	1.0
Instruction Text with Links (Framework Capabilities) (page 45)	New process parameter.	1.0
Instruction Link Definition (Framework Capabilities) (page 45)	New process parameter.	1.0

Changes related to "Get Choice Value Phase" (page 49):

Object	Description	Document
Active Mode (SR0080.1.2) (page 50)	Update Instruction link panel added.	1.0
Completed Mode (SR0080.1.3) (page 50)	Update Instruction link panel added.	1.0
Instruction Text with Links (Framework Capabilities) (page 54)	New process parameter.	1.0
Instruction Link Definition (Framework Capabilities) (page 54)	New process parameter.	1.0

Changes related to "Upload Image Phase" (page 63):

Object	Description	Document
Active Mode (SR0090.1.2) (page 64)	Update Instruction link panel added.	1.0
Completed Mode (SR0090.1.3) (page 65)	Update Instruction link panel added.	1.0
Instruction Text with Links (Framework Capabilities) (page 72)	New process parameter.	1.0
Instruction Link Definition (Framework Capabilities) (page 72)	New process parameter.	1.0

Changes related to "Upload PDF Phase" (page 83):

Object	Description	Document
Active Mode (SR0100.1.2) (page 85)	Update Instruction link panel added.	1.0
Completed Mode (SR0100.1.3) (page 85)	Update Instruction link panel added.	1.0
Instruction Text with Links (Framework Capabilities) (page 92)	New process parameter.	1.0
Instruction Link Definition (Framework Capabilities) (page 92)	New process parameter.	1.0
Load PDF Error (SR0100.3.6.1) (page 99)	Update Error messages for password-protected and for encrypted, non-printable files added.	1.0

Changes related to "Show URL Phase" (page 103):

Object	Description	Document
Active Mode (SR0120.1.2) (page 104)	Update Instruction link panel added.	1.0
Completed Mode (SR0120.1.3) (page 104)	Update Instruction link panel added.	1.0
Instruction Text with Links (Framework Capabilities) (page 107)	New process parameter.	1.0

Object	Description	Document
Instruction Link Definition (Framework Capabilities) (page 107)	New process parameter.	1.0
Loading Failed (SR0120.3.2.1) (page 109)	New system-triggered exception, includes Loading failed - Logic (SR0120.3.2.1.1) .	1.0

Changes related to "Create Workflow Phase" (page 111):

Object	Description	Document
Active Mode (SR0130.1.2) (page 112)	Update Instruction link panel added.	1.0
Completed Mode (SR0130.1.3) (page 113)	Update Instruction link panel added.	1.0
Instruction Text with Links (Framework Capabilities) (page 119)	New process parameter.	1.0
Instruction Link Definition (Framework Capabilities) (page 120)	New process parameter.	1.0

Changes related to "Write Context Data Phase" (page 131):

Object	Description	Document
Active Mode (SR0140.1.2) (page 132)	Update Instruction link panel added.	1.0
Completed Mode (SR0140.1.3) (page 133)	Update Instruction link panel added.	1.0
Instruction Text with Links (Framework Capabilities) (page 142)	New process parameter.	1.0
Instruction Link Definition (Framework Capabilities) (page 143)	New process parameter.	1.0

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- FT PharmaSuite® 10.01.00 - Functional Requirement Specification EBR Phases
-
-

C

- Compliance-related
 - Exceptions (Show document) • 46
 - Exceptions (Show instruction text) • 37
 - SR0010.3+ - Exceptions (Get process value) • 14
 - SR0020.3+ - Exceptions (Get text value) • 27
 - SR0080.3+ - Exceptions (Get choice value) • 57
 - SR0090.3+ - Exceptions (Upload image) • 76
 - SR0100.3+ - Exceptions (Upload PDF) • 96
 - SR0120.3+ - Exceptions (Show URL) • 108
 - SR0130.3+ - Exceptions (Create workflow) • 124
 - SR0140.3+ - Exceptions (Write context data) • 148
- Conventions (typographical) • 1
- Create workflow (SR0130+) • 111
 - Active mode (SR0130.1.2) • 112
 - Append workflow (SR0130.8.5) • 121
 - Automatic completion mode (SR0130.2.2) • 115
 - Business Logic (SR0130.2+) • 115
 - Common sub-report elements (Framework capability) • 114
 - Completed mode (SR0130.1.3) • 113
 - Completion time (Create workflow) • 127
 - Completion time (Framework capability) • 127
 - Configuration keys (SR0130.11+) • 129
 - Confirm phase (SR0130.2.3) • 116
 - Creation result (SR0130.9.5) • 128
 - Decisions • 125
 - Detail information (SR0130.8.11) • 123
 - Detail information (SR0130.9.4) • 128
 - Duplicate workflow identifier (SR0130.3.6.5) • 126
 - Enable and configure treatment ID support (SR0130.11.1) • 129
 - Error messages (SR0130.3.6+) • 125
 - Exceptions (SR0130.3+) • 124
 - Identifier (Framework capability) • 127
 - Information column (SR0130.4.1) • 114
 - Information messages • 125
 - Instance count (Framework capability) • 127
 - Instruction (SR0130.8.1) • 120
 - Instruction link definition (Framework capability) • 120
 - Instruction table definition (Framework capability) • 118
 - Instruction table text (Framework capability) • 119
 - Instruction text with links (Framework capability) • 119
 - Manual completion mode (SR0130.2.1) • 115
 - Master workflow (SR0130.8.4) • 121
 - Master workflow not approved (SR0130.3.6.2) • 126
 - Mode (SR0130.8.2) • 120
 - Output variables (SR0130.9+) • 127
 - Phase column (Framework capability) • 113
 - Planned end (SR0130.8.10) • 123
 - Planned end (SR0130.9.3) • 128
 - Planned start (SR0130.8.9) • 122
 - Planned start (SR0130.9.2) • 127
 - Post-completion exceptions • 125
 - Preview mode (SR0130.1.1) • 112
 - Process parameters (SR0130.8+) • 118
 - Questions • 125
 - Representation during Execution (SR0030.1+) • 112
 - Representation in navigator (SR0130.4+) • 113
 - Representation in sub-report (SR0130.5+) • 114
 - Skip workflow creation (SR0130.3.1.1) • 124
 - Skip workflow creation (SR0130.8.12) • 123
 - Start time (Framework capability) • 127
 - Start workflow automatically (SR0130.8.8) • 122
 - Station (SR0130.8.7) • 122
 - Station and work center inconsistency (SR0130.3.6.1) • 125
 - Station does not exist (SR0130.3.6.4) • 126
 - Sub-report elements (SR0130.5.1) • 114
 - System-triggered exceptions • 124
 - User-triggered exceptions (SR0130.3.1+) • 124
 - Work center (SR0130.8.6) • 122
 - Work center and station determination (SR0130.2.4) • 118

Work center does not exist (SR0130.3.6.3) • 126
 Workflow definition (SR0130.8.3) • 121
 Workflow identifier (SR0130.9.1) • 127

F

Framework capability

Bundle process parameters (Write context data, BigDecimal value) • 145
 Bundle process parameters (Write context data, Boolean value) • 145
 Bundle process parameters (Write context data, Duration value) • 146
 Bundle process parameters (Write context data, Long value) • 146
 Bundle process parameters (Write context data, Measured value) • 147
 Bundle process parameters (Write context data, String value) • 147
 Bundle process parameters (Write context data, Timestamp value) • 148
 Common sub-report elements (Framework capability) • 114
 Common sub-report elements (Get choice value) • 51
 Common sub-report elements (Get process value) • 5
 Common sub-report elements (Get text value) • 21
 Common sub-report elements (Show document) • 43
 Common sub-report elements (Show instruction text) • 34
 Common sub-report elements (Show URL) • 105
 Common sub-report elements (Upload image) • 66
 Common sub-report elements (Upload PDF) • 86
 Common sub-report elements (Write context data) • 135
 Completion time (Get choice value) • 62
 Completion time (Get process value) • 18
 Completion time (Get text value) • 31
 Completion time (Show document) • 48
 Completion time (Show instruction text) • 39
 Completion time (Show URL) • 110
 Completion time (Upload image) • 81
 Completion time (Upload PDF) • 101
 Completion time (Write context data) • 154

Identifier (Create workflow) • 127
 Identifier (Get choice value) • 62
 Identifier (Get process value) • 18
 Identifier (Get text value) • 31
 Identifier (Show document) • 48
 Identifier (Show instruction text) • 39
 Identifier (Show URL) • 110
 Identifier (Upload image) • 81
 Identifier (Upload PDF) • 101
 Identifier (Write context data) • 154
 Instance count (Create workflow) • 127
 Instance count (Get choice value) • 61
 Instance count (Get process value) • 17
 Instance count (Get text value) • 30
 Instance count (Show document) • 47
 Instance count (Show instruction text) • 38
 Instance count (Show URL) • 110
 Instance count (Upload image) • 80
 Instance count (Upload PDF) • 100
 Instance count (Write context data) • 153
 Instruction link definition (Create workflow) • 120
 Instruction link definition (Get choice value) • 54
 Instruction link definition (Get process value) • 8
 Instruction link definition (Get text value) • 24
 Instruction link definition (Show document) • 45
 Instruction link definition (Show instruction text) • 36
 Instruction link definition (Show URL) • 107
 Instruction link definition (Upload image) • 72
 Instruction link definition (Upload PDF) • 92
 Instruction link definition (Write context data) • 143
 Instruction table definition (Create workflow) • 118
 Instruction table definition (Get choice value) • 53
 Instruction table definition (Get process value) • 7
 Instruction table definition (Get text value) • 23
 Instruction table definition (Show document) • 44
 Instruction table definition (Show instruction text) • 35
 Instruction table definition (Show URL) • 106
 Instruction table definition (Upload image) • 71
 Instruction table definition (Upload PDF) • 91
 Instruction table definition (Write context data) • 141
 Instruction table text (Create workflow) • 119

Instruction table text (Get choice value) • 54
 Instruction table text (Get process value) • 7
 Instruction table text (Get text value) • 23
 Instruction table text (Show document) • 45
 Instruction table text (Show instruction text) • 36
 Instruction table text (Show URL) • 106
 Instruction table text (Upload image) • 71
 Instruction table text (Upload PDF) • 91
 Instruction table text (Write context data) • 142
 Instruction text with links (Create workflow) • 119
 Instruction text with links (Get choice value) • 54
 Instruction text with links (Get process value) • 8
 Instruction text with links (Get text value) • 24
 Instruction text with links (Show document) • 45
 Instruction text with links (Show instruction text) • 36
 Instruction text with links (Show URL) • 107
 Instruction text with links (Upload image) • 72
 Instruction text with links (Upload PDF) • 92
 Instruction text with links (Write context data) • 142
 Option List Editor (Get choice value) • 55
 Phase column (Create workflow) • 113
 Phase column (Get choice value) • 51
 Phase column (Get process value) • 5
 Phase column (Get text value) • 21
 Phase column (Show document) • 43
 Phase column (Show instruction text) • 34
 Phase column (Show URL) • 105
 Phase column (Upload image) • 65
 Phase column (Upload PDF) • 85
 Phase column (Write context data) • 135
 Start time (Create workflow) • 127
 Start time (Get choice value) • 61
 Start time (Get process value) • 18
 Start time (Get text value) • 31
 Start time (Show document) • 47
 Start time (Show instruction text) • 39
 Start time (Show URL) • 110
 Start time (Upload image) • 80
 Start time (Upload PDF) • 101
 Start time (Write context data) • 153

G

Get choice value (SR0080+) • 49
 Action column (SR0080.4.2) • 51
 Active mode (SR0080.1.2) • 50
 Business logic (SR0080.2+) • 52
 Common sub-report elements (Framework capability) • 51
 Completed mode (SR0080.1.3) • 50
 Completion time (Framework capability) • 62
 Confirm phase (SR0080.2.3) • 53
 Correct value - Logic (SR0080.3.3.1.1) • 59
 Correct value (SR0080.3.3.1) • 59
 Correct value (SR0080.8.6) • 57
 Decisions • 60
 Display choice values (SR0080.2.1) • 52
 Error messages (SR0080.3.6+) • 60
 Exceptions (SR0080.3+) • 57
 Expected value check - Logic (SR0080.3.2.1.1) • 58
 Expected value check (SR0080.3.2.1) • 58
 Expected value configuration (SR0080.8.5) • 56
 Expected value definition (SR0080.8.3) • 56
 Identifier (Framework capability) • 62
 Information column (SR0080.4.1) • 51
 Information messages • 60
 Instance count (Framework capability) • 61
 Instruction (SR0080.8.1) • 55
 Instruction link definition (Framework capability) • 54
 Instruction table definition (Framework capability) • 53
 Instruction table text (Framework capability) • 54
 Instruction text with links (Framework capability) • 54
 Invalid choice item configuration (SR0080.3.6.3) • 61
 Invalid default value configuration (SR0080.3.6.2) • 60
 Invalid expected value configuration (SR0080.3.6.1) • 60
 List of options (SR0080.8.2) • 55
 No choice item selected (SR0080.3.6.4) • 61
 One-click completion (SR0080.8.4) • 55
 Option key (SR0080.9.5) • 62
 Option List Editor (Framework capability) • 55
 Option text (SR0080.9.4) • 62

Output variables (SR0080.9+) • 61	Limit definition (SR0010.8.5) • 11
Phase column (Framework capability) • 51	Limit violation - Completion (SR0010.3.2.2) • 14
Post-completion exceptions (SR0080.3.3+) • 58	Limit violation (SR0010.3.2.1) • 14
Preview mode (SR0080.1.1) • 50	Output variables (SR0010.9+) • 17
Process parameters (SR0080.8+) • 53	Override value - Logic (SR0010.3.1.1.1) • 15
Questions • 60	Override value (SR0010.3.1.1) • 15
Representation during execution (SR0080.1+) • 50	Override value (SR0010.8.7) • 13
Representation in Navigator (SR0080.4+) • 51	Phase column (Framework capability) • 5
Representation in sub-report (SR0080.5+) • 51	Post-completion exceptions (SR0010.3.3+) • 16
Select choice value (SR0080.2.2) • 52	Preview mode (SR0010.1.2) • 4
Start time (Framework capability) • 61	Process parameters (SR0010.8+) • 7
Sub-report elements (SR0080.5.1) • 51	Questions • 17
System-triggered exceptions (SR0080.3.2+) • 57	Representation during execution (SR0010.1+) • 4
User-triggered exceptions • 58	Representation in Navigator (SR0010.4+) • 5
Get process value (SR0010+) • 3	Representation in sub-report (SR0010.5+) • 5
Action column (SR0010.4.2) • 5	Start time (Framework capability) • 18
Active mode (SR0010.1.1) • 4	Sub-report elements (SR0010.5.1) • 6
Business logic (SR0010.2+) • 6	System-triggered exceptions (SR0010.3.2+) • 14
Common sub-report elements (Framework capability) • 5	Unit of measure (SR0010.9.3) • 18
Completed mode (SR0010.1.3) • 5	User-triggered exceptions (SR0010.3.1+) • 15
Completion time (Framework capability) • 18	Validate process value (SR0010.2.2) • 6
Correct value - Combined exception (SR0010.3.3.3) • 17	Value (SR0010.9.4) • 18
Correct value - Validation (SR0010.3.3.2) • 16	Value configuration (SR0010.8.2) • 9
Correct value (SR0010.3.3.1) • 16	Get text value (SR0020+) • 19
Correct value (SR0010.8.6) • 13	Action column (SR0020.4.2) • 21
Decisions • 17	Active mode (SR0020.1.1) • 20
Document process value (SR0010.2.1) • 6	Business logic (SR0020.2+) • 22
Error messages • 17	Common sub-report elements (Framework capability) • 21
Exceptions (SR0010.3+) • 14	Completed mode (SR0020.1.3) • 21
Identifier (Framework capability) • 18	Completion time (Framework capability) • 31
Information column (SR0010.4.1) • 5	Correct value - Combined exception (SR0020.3.3.3) • 30
Information messages • 17	Correct value - Validation (SR0020.3.3.2) • 29
Instance count (Framework capability) • 17	Correct value (SR0020.3.3.1) • 29
Instruction (SR0010.8.1) • 8	Correct value (SR0020.8.6) • 26
Instruction link definition (Framework capability) • 8	Decisions • 30
Instruction table definition (Framework capability) • 7	Document text value (SR0020.2.1) • 22
Instruction table text (Framework capability) • 7	Error messages • 30
Instruction text with links (Framework capability) • 8	Exceptions (SR0020.3+) • 27
Limit configuration (SR0010.8.4) • 9	Expected value configuration (SR0020.8.4) • 25

Expected value definition (SR0020.8.5) • 25
 Identifier (Framework capability) • 31
 Information column (SR0020.4.1) • 21
 Information messages • 30
 Instance count (Framework capability) • 30
 Instruction (SR0020.8.1) • 24
 Instruction link definition (Framework capability) • 24
 Instruction table definition (Framework capability) • 23
 Instruction table text (Framework capability) • 23
 Instruction text with links (Framework capability) • 24
 Output variables (SR0020.9+) • 30
 Override value - Logic (SR0020.3.1.1.1) • 28
 Override value (SR0020.3.1.1) • 28
 Override value (SR0020.8.7) • 26
 Phase column (Framework capability) • 21
 Post-completion exceptions (SR0020.3.3+) • 29
 Preview mode (SR0020.1.2) • 20
 Process parameters (SR0020.8+) • 23
 Questions • 30
 Representation during execution (SR0020.1+) • 20
 Representation in Navigator (SR0020.4+) • 21
 Representation in sub-report (SR0020.5+) • 21
 Start time (Framework capability) • 31
 Sub-report elements (SR0020.5.1) • 22
 System-triggered exceptions (SR0020.3.2+) • 27
 User-triggered exceptions (SR0020.3.1+) • 28
 Validate text value (SR0020.2.2) • 22
 Value (SR0020.9.2) • 31
 Violation of expected value - Completion
 (SR0020.3.2.2) • 27
 Violation of expected value (SR0020.3.2.1) • 27

S

Show document (SR0040+) • 41
 Action column • 43
 Active mode (SR0040.1.1) • 42
 Business logic (SR0040.2+) • 43
 Common sub-report elements (Framework capability) •
 43
 Completed mode (SR0040.1.3) • 42
 Completion time (Framework capability) • 48

Decisions • 47
 Display document (SR0040.2.1) • 44
 Document (SR0040.8.2) • 46
 Error messages • 47
 Exceptions • 46
 Identifier (Framework capability) • 48
 Information column (SR0040.4.1) • 43
 Information messages • 47
 Instance count (Framework capability) • 47
 Instruction (SR0040.8.1) • 46
 Instruction link definition (Framework capability) • 45
 Instruction table definition (Framework capability) • 44
 Instruction table text (Framework capability) • 45
 Instruction text with links (Framework capability) • 45
 Output variables • 47
 Phase column (Framework capability) • 43
 Post-completion exceptions • 47
 Preview mode (SR0040.1.2) • 42
 Process parameters (SR0040.8+) • 44
 Questions • 47
 Representation during execution (SR0040.1+) • 42
 Representation in Navigator (SR0040.4+) • 43
 Representation in sub-report (SR0040.5+) • 43
 Start time (Framework capability) • 47
 Sub-report elements (SR0040.5.1) • 43
 System-triggered exceptions • 46
 User-triggered exceptions • 47
 Show instruction text (SR0030+) • 33
 Action column • 34
 Active mode (SR0030.1.1) • 33
 Business logic (SR0030.2+) • 35
 Common sub-report elements (Framework capability) •
 34
 Completed mode (SR0030.1.3) • 34
 Completion time (Framework capability) • 39
 Decisions • 38
 Display instruction text (SR0030.2.1) • 35
 Error messages • 38
 Exceptions • 37
 Identifier (Framework capability) • 39
 Information column (SR0030.4.1) • 34

Information messages • 38	Instruction table definition (Framework capability) • 106
Instance count (Framework capability) • 38	Instruction table text (Framework capability) • 106
Instruction (SR0030.8.1) • 37	Instruction text with links (Framework capability) • 107
Instruction link definition (Framework capability) • 36	Loading failed - Logic (SR0120.3.2.1.1) • 109
Instruction table definition (Framework capability) • 35	Loading failed (SR0120.3.2.1) • 109
Instruction table text (Framework capability) • 36	Loading failed (SR0120.8.3) • 108
Instruction text with links (Framework capability) • 24	Output variables • 110
Layout (SR0030.8.2) • 37	Phase column (Framework capability) • 105
Output variables • 38	Post-completion exceptions • 109
Phase column (Framework capability) • 34	Preview mode (SR0120.1.1) • 104
Post-completion exceptions • 38	Process parameters (SR0120.8+) • 106
Preview mode (SR0030.1.2) • 33	Questions • 109
Process parameters (SR0030.8+) • 35	Representation during execution (SR0120.1+) • 104
Questions • 38	Representation in Navigator (SR0120.4+) • 105
Representation during execution (SR0030.1+) • 33	Representation in sub-report (SR0120.5+) • 105
Representation in Navigator (SR0030.4+) • 34	Start time (Framework capability) • 110
Representation in sub-report (SR0030.5+) • 34	Sub-report elements (SR0120.5.1) • 105
Start time (Framework capability) • 39	System-triggered exceptions (SR0120.3.2+) • 109
Sub-report elements (SR0030.5.1) • 35	User-triggered exceptions • 109
System-triggered exceptions • 38	SR0010.1.1 - Active mode (Get process value) • 4
User-triggered exceptions • 38	SR0010.1.2 - Preview mode (Get process value) • 4
Show URL (SR0120+) • 103	SR0010.1.3 - Completed mode (Get process value) • 5
Action column (SR0120.4.2) • 105	SR0010.1+ - Representation during execution (Get process value) • 4
Active mode (SR0120.1.2) • 104	SR0010.2.1 - Document process value (Get process value) • 6
Business logic (SR0120.2+) • 105	SR0010.2.2 - Validate process value (Get process value) • 6
Common sub-report elements (Framework capability) • 105	SR0010.2+ - Business logic (Get process value) • 6
Completed mode (SR0120.1.3) • 104	SR0010.3.1.1 - Override value (Get process value) • 15
Completion time (Framework capability) • 110	SR0010.3.1.1.1 - Override value - Logic (Get process value) • 15
Decisions • 110	SR0010.3.1+ - User-triggered exceptions (Get process value) • 15
Display document (SR0120.2.1) • 105	SR0010.3.2.1 - Limit violation (Get process value) • 14
Document (SR0120.8.2) • 108	SR0010.3.2.2 - Limit violation - Completion (Get process value) • 14
Error messages • 110	SR0010.3.2+ - System-triggered exceptions (Get process value) • 14
Exceptions (SR0120.3+) • 108	SR0010.3.3.1 - Correct value (Get process value) • 16
Identifier (Framework capability) • 110	
Information column (SR0120.4.1) • 105	
Information messages • 109	
Instance count (Framework capability) • 110	
Instruction (SR0120.8.1) • 107	
Instruction link definition (Framework capability) • 107	

- SR0010.3.3.2 - Correct value - Validation (Get process value) • 16
- SR0010.3.3.3 - Correct value - Combined exception (Get process value) • 17
- SR0010.3.3+ - Post-completion exceptions (Get process value) • 16
- SR0010.3+ - Exceptions (Get process value) • 14
- SR0010.4.1 - Information column (Get process value) • 5
- SR0010.4.2 - Action column (Get process value) • 5
- SR0010.4+ - Representation in Navigator (Get process value) • 5
- SR0010.5.1 - Sub-report elements (Get process value) • 6
- SR0010.5+ - Representation in sub-report (Get process value) • 5
- SR0010.8.1 - Instruction (Get process value) • 8
- SR0010.8.2 - Value configuration (Get process value) • 9
- SR0010.8.4 - Limit configuration (Get process value) • 9
- SR0010.8.5 - Limit definition (Get process value) • 11
- SR0010.8.6 - Correct value (Get process value) • 13
- SR0010.8.7 - Override value (Get process value) • 13
- SR0010.8+ - Process parameters (Get process value) • 7
- SR0010.9.3 - Unit of measure (Get process value) • 18
- SR0010.9.4 - Value (Get process value) • 18
- SR0010.9+ - Output variables (Get process value) • 17
- SR0010+ - Get process value • 3
- SR0020.1.1 - Active mode (Get text value) • 20
- SR0020.1.2 - Preview mode (Get text value) • 20
- SR0020.1.3 - Completed mode (Get text value) • 21
- SR0020.1+ - Representation during execution (Get text value) • 20
- SR0020.2.1 - Document text value (Get text value) • 22
- SR0020.2.2 - Validate text value (Get text value) • 22
- SR0020.2+ - Business logic (Get text value) • 22
- SR0020.3.1.1 - Override value (Get text value) • 28
- SR0020.3.1.1.1 - Override value - Logic (Get text value) • 28
- SR0020.3.1+ - User-triggered exceptions (Get text value) • 28
- SR0020.3.2.1 - Violation of expected value (Get text value) • 27
- SR0020.3.2.2 - Violation of expected value - Completion (Get text value) • 27
- SR0020.3.2+ - System-triggered exceptions (Get text value) • 27
- SR0020.3.3.1 - Correct value (Get text value) • 29
- SR0020.3.3.2 - Correct value - Validation (Get text value) • 29
- SR0020.3.3.3 - Correct value - Combined exception (Get text value) • 30
- SR0020.3.3+ - Post-completion exceptions (Get text value) • 29
- SR0020.3+ - Exceptions (Get text value) • 27
- SR0020.4.1 - Information column (Get text value) • 21
- SR0020.4.2 - Action column (Get text value) • 21
- SR0020.4+ - Representation in Navigator (Get text value) • 21
- SR0020.5.1 - Sub-report elements (Get text value) • 22
- SR0020.5+ - Representation in sub-report (Get text value) • 21
- SR0020.8.1 - Instruction (Get text value) • 24
- SR0020.8.4 - Expected value configuration (Get text value) • 25
- SR0020.8.5 - Expected value definition (Get text value) • 25
- SR0020.8.6 - Correct value (Get text value) • 26
- SR0020.8.7 - Override value (Get text value) • 26
- SR0020.8+ - Process parameters (Get text value) • 23
- SR0020.9.2 - Value (Get text value) • 31
- SR0020.9+ - Output variables (Get text value) • 30
- SR0020+ - Get text value • 19
- SR0030.1.1 - Active mode (Show instruction text) • 33
- SR0030.1.2 - Preview mode (Show instruction text) • 33
- SR0030.1.3 - Completed mode (Show instruction text) • 34
- SR0030.1+ - Representation during execution (Create workflow) • 112
- SR0030.1+ - Representation during execution (Show instruction text) • 33
- SR0030.2.1 - Display instruction text (Show instruction text) • 35
- SR0030.2+ - Business logic (Show instruction text) • 35

SR0030.4.1 - Information column (Show instruction text) • 34	SR0080.3.2.1.1 - Expected value check - Logic (Get choice value) • 58
SR0030.4+ - Representation in Navigator (Show instruction text) • 34	SR0080.3.2+ - System-triggered exceptions (Get choice value) • 57
SR0030.5.1 - Sub-report elements (Show instruction text) • 35	SR0080.3.3.1 - Correct value (Get choice value) • 59
SR0030.5+ - Representation in sub-report (Show instruction text) • 34	SR0080.3.3.1.1 - Correct value - Logic (Get choice value) • 59
SR0030.8.1 - Instruction (Show instruction text) • 37	SR0080.3.3+ - Post-completion exceptions (Get choice value) • 58
SR0030.8.2 - Layout (Show instruction text) • 37	SR0080.3.6.1 - Invalid expected value configuration (Get choice value) • 60
SR0030.8+ - Process parameters (Show instruction text) • 35	SR0080.3.6.2 - Invalid default value configuration (Get choice value) • 60
SR0030+ - Show instruction text • 33	SR0080.3.6.3 - Invalid choice item configuration (Get choice value) • 61
SR0040.1.1 - Active mode (Show document) • 42	SR0080.3.6.4 - No choice item selected (Get choice value) • 61
SR0040.1.2 - Preview mode (Show document) • 42	SR0080.3.6+ - Error messages (Get choice value) • 60
SR0040.1.3 - Completed mode (Show document) • 42	SR0080.3+ - Exceptions (Get choice value) • 57
SR0040.1+ - Representation during execution (Show document) • 42	SR0080.4.1 - Information column (Get choice value) • 51
SR0040.2.1 - Display document (Show document) • 44	SR0080.4.2 - Action column (Get choice value) • 51
SR0040.2+ - Business logic (Show document) • 43	SR0080.4+ - Representation in Navigator (Get choice value) • 51
SR0040.4.1 - Information column (Show document) • 43	SR0080.5.1 - Sub-report elements (Get choice value) • 51
SR0040.4+ - Representation in Navigator (Show document) • 43	SR0080.5+ - Representation in sub-report (Get choice value) • 51
SR0040.5.1 - Sub-report elements (Show document) • 43	SR0080.8.1 - Instruction (Get choice value) • 55
SR0040.5+ - Representation in sub-report (Show document) • 43	SR0080.8.2 - List of options (Get choice value) • 55
SR0040.8.1 - Instruction (Show document) • 46	SR0080.8.3 - Expected value definition (Get choice value) • 56
SR0040.8.2 - Document (Show document) • 46	SR0080.8.4 - One-click completion (Get choice value) • 55
SR0040.8+ - Process parameters (Show document) • 44	SR0080.8.5 - Expected value configuration (Get choice value) • 56
SR0040+ - Show document • 41	SR0080.8.6 - Correct value (Get choice value) • 57
SR0080.1.1 - Preview mode (Get choice value) • 50	SR0080.8+ - Process parameters (Get choice value) • 53
SR0080.1.2 - Active mode (Get choice value) • 50	SR0080.9.4 - Option text (Get choice value) • 62
SR0080.1.3 - Completed mode (Get choice value) • 50	SR0080.9.5 - Option key (Get choice value) • 62
SR0080.1+ - Representation during execution (Get choice value) • 50	SR0080.9+ - Output variables (Get choice value) • 61
SR0080.2.1 - Display choice values (Get choice value) • 52	SR0080+ - Get choice value • 49
SR0080.2.2 - Select choice value (Get choice value) • 52	SR0090.1.1 - Preview mode (Upload image) • 64
SR0080.2.3 - Confirm phase (Get choice value) • 53	SR0090.1.2 - Active mode (Upload image) • 64
SR0080.2+ - Business logic (Get choice value) • 52	
SR0080.3.2.1 - Expected value check (Get choice value) • 58	

- SR0090.1.3 - Completed mode (Upload image) • 65
- SR0090.1+ - Representation during execution (Upload image) • 64
- SR0090.11.1 - Maximum file size (Upload image) • 81
- SR0090.11+ - Configuration keys (Upload image) • 81
- SR0090.2.1 - Selection mode (Upload image) • 66
- SR0090.2.2 - Select image (Upload image) • 69
- SR0090.2.3 - Confirm phase (Upload image) • 70
- SR0090.2.4 - Loading mode (Upload image) • 67
- SR0090.2.5 - Load image (Upload image) • 69
- SR0090.2.6 - Automatic loading mode (Upload image) • 67
- SR0090.2.7 - Automatic completion mode (Upload image) • 68
- SR0090.2+ - Business logic (Upload image) • 66
- SR0090.3.1.1 - Select manually (Upload image) • 77
- SR0090.3.1.1.1 - Select manually - Logic (Upload image) • 77
- SR0090.3.1+ - User-triggered exceptions (Upload image) • 77
- SR0090.3.2.1 - Mandatory upload check (Upload image) • 76
- SR0090.3.2.1.1 - Mandatory upload check - Logic (Upload image) • 76
- SR0090.3.2+ - System-triggered exceptions (Upload image) • 76
- SR0090.3.3.1 - Replace file (Upload image) • 78
- SR0090.3.3.1.1 - Replace file - Logic (Upload image) • 78
- SR0090.3.3+ - Post-completion exceptions (Upload image) • 78
- SR0090.3.6.1 - Load image error (Upload image) • 79
- SR0090.3.6.2 - Display image error (Upload image) • 80
- SR0090.3.6.3 - Image ambiguous (Upload image) • 80
- SR0090.3.6+ - Error messages (Upload image) • 79
- SR0090.3+ - Exceptions (Upload image) • 76
- SR0090.4.1 - Information column (Upload image) • 65
- SR0090.4.2 - Action column (Upload image) • 65
- SR0090.4+ - Representation in Navigator (Upload image) • 65
- SR0090.5.1 - Sub-report elements (Upload image) • 66
- SR0090.5+ - Representation in sub-report (Upload image) • 65
- SR0090.8.1 - Instruction (Upload image) • 73
- SR0090.8.2 - Mode (Upload image) • 73
- SR0090.8.3 - File location (Upload image) • 73
- SR0090.8.4 - Select manually (Upload image) • 75
- SR0090.8.5 - Replace file (Upload image) • 75
- SR0090.8.6 - Mandatory upload check (Upload image) • 74
- SR0090.8+ - Process parameters (Upload image) • 71
- SR0090.9.4 - Image full path (Upload image) • 81
- SR0090.9.5 - Image timestamp (Upload image) • 81
- SR0090.9+ - Output variables (Upload image) • 80
- SR0090+ - Upload image • 63
- SR0100.1.1 - Preview mode (Upload PDF) • 84
- SR0100.1.2 - Active mode (Upload PDF) • 85
- SR0100.1.3 - Completed mode (Upload PDF) • 85
- SR0100.1+ - Representation during execution (Upload PDF) • 84
- SR0100.11.1 - Maximum file size (Upload PDF) • 101
- SR0100.11+ - Configuration keys (Upload PDF) • 101
- SR0100.2.1 - Selection mode (Upload PDF) • 87
- SR0100.2.2 - Select PDF (Upload PDF) • 89
- SR0100.2.3 - Confirm phase (Upload PDF) • 90
- SR0100.2.4 - Loading mode (Upload PDF) • 87
- SR0100.2.5 - Load PDF (Upload PDF) • 90
- SR0100.2.6 - Automatic loading mode (Upload PDF) • 88
- SR0100.2.7 - Automatic completion mode (Upload PDF) • 88
- SR0100.2+ - Business logic (Upload PDF) • 86
- SR0100.3.1.1 - Select manually (Upload PDF) • 97
- SR0100.3.1.1.1 - Select manually - Logic (Upload PDF) • 97
- SR0100.3.1+ - User-triggered exceptions (Upload PDF) • 97
- SR0100.3.2.1 - Mandatory upload check (Upload PDF) • 96
- SR0100.3.2.1.1 - Mandatory upload check - Logic (Upload PDF) • 96
- SR0100.3.2+ - System-triggered exceptions (Upload PDF) • 96

SR0100.3.3.1 - Replace file (Upload PDF) • 98	SR0120.4.2 - Action column (Show URL) • 105
SR0100.3.3.1.1 - Replace file - Logic (Upload PDF) • 98	SR0120.4+ - Representation in Navigator (Show URL) • 105
SR0100.3.3+ - Post-completion exceptions (Upload PDF) • 98	SR0120.5.1 - Sub-report elements (Show URL) • 105
SR0100.3.6.1 - Load PDF error (Upload PDF) • 99	SR0120.5+ - Representation in sub-report (Show URL) • 105
SR0100.3.6.2 - Display PDF error (Upload PDF) • 100	SR0120.8.1 - Instruction (Show URL) • 107
SR0100.3.6.3 - PDF ambiguous (Upload PDF) • 100	SR0120.8.2 - Document (Show URL) • 108
SR0100.3.6+ - Error messages (Upload PDF) • 99	SR0120.8.3 - Loading failed (Show URL) • 108
SR0100.3+ - Exceptions (Upload PDF) • 96	SR0120.8+ - Process parameters (Show URL) • 106
SR0100.4.1 - Information column (Upload PDF) • 86	SR0120+ - Show URL • 103
SR0100.4.2 - Action column (Upload PDF) • 86	SR0130.1.1 - Preview mode (Create workflow) • 112
SR0100.4+ - Representation in Navigator (Upload PDF) • 85	SR0130.1.2 - Active mode (Create workflow) • 112
SR0100.5.1 - Sub-report elements (Upload PDF) • 86	SR0130.1.3 - Completed mode (Create workflow) • 113
SR0100.5+ - Representation in sub-report (Upload PDF) • 86	SR0130.11.1 - Enable and configure treatment ID support (Create workflow) • 129
SR0100.8.1 - Instruction (Upload PDF) • 93	SR0130.11+ - Configuration keys (Create workflow) • 129
SR0100.8.2 - Mode (Upload PDF) • 93	SR0130.2.1 - Manual completion mode (Create workflow) • 115
SR0100.8.3 - File location (Upload PDF) • 93	SR0130.2.2 - Automatic completion mode (Create workflow) • 115
SR0100.8.4 - Select manually (Upload PDF) • 95	SR0130.2.3 - Confirm phase (Create workflow) • 116
SR0100.8.5 - Replace file (Upload PDF) • 95	SR0130.2.4 - Work center and station determination (Create workflow) • 118
SR0100.8.6 - Mandatory upload check (Upload PDF) • 94	SR0130.2+ - Business Logic (Create workflow) • 115
SR0100.8+ - Process parameters (Upload PDF) • 91	SR0130.3.1.1 - Skip workflow creation (Create workflow) • 124
SR0100.9.1 - PDF full path (Upload PDF) • 101	SR0130.3.1+ - User-triggered exceptions (Create workflow) • 124
SR0100.9.2 - PDF timestamp (Upload PDF) • 101	SR0130.3.6.1 - Station and work center inconsistency (Create workflow) • 125
SR0100.9+ - Output variables (Upload PDF) • 100	SR0130.3.6.2 - Master workflow not approved (Create workflow) • 126
SR0100+ - Upload PDF • 83	SR0130.3.6.3 - Work center does not exist (Create workflow) • 126
SR0120.1.1 - Preview mode (Show URL) • 104	SR0130.3.6.4 - Station does not exist (Create workflow) • 126
SR0120.1.2 - Active mode (Show URL) • 104	SR0130.3.6.5 - Duplicate workflow identifier (Create workflow) • 126
SR0120.1.3 - Completed mode (Show URL) • 104	SR0130.3.6+ - Error messages (Create workflow) • 125
SR0120.1+ - Representation during execution (Show URL) • 104	SR0130.3+ - Exceptions (Create workflow) • 124
SR0120.2.1 - Display document (Show URL) • 105	
SR0120.2+ - Business logic (Show URL) • 105	
SR0120.3.2.1 - Loading failed (Show URL) • 109	
SR0120.3.2.1.1 - Loading failed - Logic (Show URL) • 109	
SR0120.3.2+ - System-triggered exceptions (Show URL) • 109	
SR0120.3+ - Exceptions (Show URL) • 108	
SR0120.4.1 - Information column (Show URL) • 105	

- SR0130.4.1 - Information column (Create workflow) • 114
- SR0130.4+ - Representation in navigator (Create workflow) • 113
- SR0130.5.1 - Sub-report elements (Create workflow) • 114
- SR0130.5+ - Representation in sub-report (Create workflow) • 114
- SR0130.8.1 - Instruction (Create workflow) • 120
- SR0130.8.10 - Planned end (Create workflow) • 123
- SR0130.8.11 - Detail information (Create workflow) • 123
- SR0130.8.12 - Skip workflow creation (Create workflow) • 123
- SR0130.8.2 - Mode (Create workflow) • 120
- SR0130.8.3 - Workflow definition (Create workflow) • 121
- SR0130.8.4 - Master workflow (Create workflow) • 121
- SR0130.8.5 - Append workflow (Create workflow) • 121
- SR0130.8.6 - Work center (Create workflow) • 122
- SR0130.8.7 - Station (Create workflow) • 122
- SR0130.8.8 - Start workflow automatically (Create workflow) • 122
- SR0130.8.9 - Planned start (Create workflow) • 122
- SR0130.8+ - Process parameters (Create workflow) • 118
- SR0130.9.1 - Workflow identifier (Create workflow) • 127
- SR0130.9.2 - Planned start (Create workflow) • 127
- SR0130.9.3 - Planned end (Create workflow) • 128
- SR0130.9.4 - Detail information (Create workflow) • 128
- SR0130.9.5 - Creation result (Create workflow) • 128
- SR0130.9+ - Output variables (Create workflow) • 127
- SR0130+ - Create workflow • 111
- SR0140.1.1 - Preview mode (Write context data) • 132
- SR0140.1.2 - Active mode (Write context data) • 132
- SR0140.1.3 - Completed mode (Write context data) • 133
- SR0140.1+ - Representation during execution (Write context data) • 131
- SR0140.2.1 - Manual completion mode (Write context data) • 137
- SR0140.2.2 - Automatic completion mode (Write context data) • 137
- SR0140.2.3 - Confirm phase (Write context data) • 138
- SR0140.2+ - Business logic (Write context data) • 137
- SR0140.3.1.1 - Override value (Write context data) • 150
- SR0140.3.1.1.1 - Override value - Logic (Write context data) • 150
- SR0140.3.1+ - User-triggered exceptions (Write context data) • 150
- SR0140.3.2.1 - Context and key check (Write context data) • 149
- SR0140.3.2.1.1 - Context and key check - Logic (Write context data) • 149
- SR0140.3.2+ - System-triggered exceptions (Write context data) • 149
- SR0140.3.6.1 - Key not defined (Write context data) • 152
- SR0140.3.6.2 - Context identifier not defined (Write context data) • 152
- SR0140.3.6.3 - Change of data type not allowed (Write context data) • 152
- SR0140.3.6.4 - Override BigDecimal value with wrong format (Write context data) • 152
- SR0140.3.6.5 - Override Duration value with wrong format (Write context data) • 152
- SR0140.3.6.6 - Override Long value with wrong format (Write context data) • 153
- SR0140.3.6.7 - Override Measured Value with wrong format (Write context data) • 153
- SR0140.3.6.8 - Override Timestamp value with wrong format (Write context data) • 153
- SR0140.3.6+ - Error messages (Write context data) • 152
- SR0140.3+ - Exceptions (Write context data) • 148
- SR0140.4.1 - Information column (Write context data) • 135
- SR0140.4+ - Representation in Navigator (Write context data) • 135
- SR0140.5.1 - Sub-report elements (Write context data) • 136
- SR0140.5+ - Representation in sub-report (Write context data) • 135
- SR0140.8.1 - Instruction (Write context data) • 143
- SR0140.8.10 - Master (Bundle identifier) (Write context data) • 147
- SR0140.8.11 - Master (Bundle identifier) (Write context data) • 148

SR0140.8.12 - Master (Bundle identifier) (Write context data) • 148
SR0140.8.2 - Mode (Write context data) • 143
SR0140.8.3 - Context definition (Write context data) • 144
SR0140.8.4 - Override value (Write context data) • 144
SR0140.8.5 - Context and key check (Write context data) • 144
SR0140.8.6 - Master (Bundle identifier) (Write context data) • 145
SR0140.8.7 - Master (Bundle identifier) (Write context data) • 146
SR0140.8.8 - Master (Bundle identifier) (Write context data) • 146
SR0140.8.9 - Master (Bundle identifier) (Write context data) • 147
SR0140.8+ - Process parameters (Write context data) • 141
SR0140.9.1 - Context identifier (Write context data) • 154
SR0140.9+ - Output variables (Write context data) • 153
SR0140+ - Write context data • 131

U

Upload image (SR0090+) • 63
Action column (SR0090.4.2) • 65
Active mode (SR0090.1.2) • 64
Automatic completion mode (SR0090.2.7) • 68
Automatic loading mode (SR0090.2.6) • 67
Business logic (SR0090.2+) • 66
Common sub-report elements (Framework capability) • 66
Completed mode (SR0090.1.3) • 65
Completion time (Framework capability) • 81
Configuration keys (SR0090.11+) • 81
Confirm phase (SR0090.2.3) • 70
Decisions • 79
Display image error (SR0090.3.6.2) • 80
Error messages (SR0090.3.6+) • 79
Exceptions (SR0090.3+) • 76
File location (SR0090.8.3) • 73
Identifier (Framework capability) • 81
Image ambiguous (SR0090.3.6.3) • 80
Image full path (SR0090.9.4) • 81

Image timestamp (SR0090.9.5) • 81
Information column (SR0090.4.1) • 65
Information messages • 79
Instance count (Framework capability) • 80
Instruction (SR0090.8.1) • 73
Instruction link definition (Framework capability) • 72
Instruction table definition (Framework capability) • 71
Instruction table text (Framework capability) • 71
Instruction text with links (Framework capability) • 72
Load image (SR0090.2.5) • 69
Load image error (SR0090.3.6.1) • 79
Loading mode (SR0090.2.4) • 67
Mandatory upload check - Logic (SR0090.3.2.1.1) • 76
Mandatory upload check (SR0090.3.2.1) • 76
Mandatory upload check (SR0090.8.6) • 74
Maximum file size (SR0090.11.1) • 81
Mode (SR0090.8.2) • 73
Output variables (SR0090.9+) • 80
Phase column (Framework capability) • 65
Post-completion exceptions (SR0090.3.3+) • 78
Preview mode (SR0090.1.1) • 64
Process parameters (SR0090.8+) • 71
Questions • 79
Replace file - Logic (SR0090.3.3.1.1) • 78
Replace file (SR0090.3.3.1) • 78
Replace file (SR0090.8.5) • 75
Representation during execution (SR0090.1+) • 64
Representation in Navigator (SR0090.4+) • 65
Representation in sub-report (SR0090.5+) • 65
Select image (SR0090.2.2) • 69
Select manually - Logic (SR0090.3.1.1.1) • 77
Select manually (SR0090.3.1.1) • 77
Select manually (SR0090.8.4) • 75
Selection mode (SR0090.2.1) • 66
Start time (Framework capability) • 80
Sub-report elements (SR0090.5.1) • 66
System-triggered exceptions (SR0090.3.2+) • 76
User-triggered exceptions (SR0090.3.1+) • 77
Upload PDF (SR0100+) • 83
Action column (SR0100.4.2) • 86
Active mode (SR0100.1.2) • 85

Automatic completion mode (SR0100.2.7) • 88
 Automatic loading mode (SR0100.2.6) • 88
 Business logic (SR0100.2+) • 86
 Common sub-report elements (Framework capability) • 86
 Completed mode (SR0100.1.3) • 85
 Completion time (Framework capability) • 101
 Configuration keys (SR0100.11+) • 101
 Confirm phase (SR0100.2.3) • 90
 Decisions • 99
 Display PDF error (SR0100.3.6.2) • 100
 Error messages (SR0100.3.6+) • 99
 Exceptions (SR0100.3+) • 96
 File location (SR0100.8.3) • 93
 Identifier (Framework capability) • 101
 Information column (SR0100.4.1) • 86
 Information messages • 99
 Instance count (Framework capability) • 100
 Instruction (SR0100.8.1) • 93
 Instruction link definition (Framework capability) • 92
 Instruction table definition (Framework capability) • 91
 Instruction table text (Framework capability) • 91
 Instruction text with links (Framework capability) • 92
 Load PDF (SR0100.2.5) • 90
 Load PDF error (SR0100.3.6.1) • 99
 Loading mode (SR0100.2.4) • 87
 Mandatory upload check - Logic (SR0100.3.2.1.1) • 96
 Mandatory upload check (SR0100.3.2.1) • 96
 Mandatory upload check (SR0100.8.6) • 94
 Maximum file size (SR0100.11.1) • 101
 Mode (SR0100.8.2) • 93
 Output variables (SR0100.9+) • 100
 PDF ambiguous (SR0100.3.6.3) • 100
 PDF full path (SR0100.9.1) • 101
 PDF timestamp (SR0100.9.2) • 101
 Phase column (Framework capability) • 85
 Post-completion exceptions (SR0100.3.3+) • 98
 Preview mode (SR0100.1.1) • 84
 Process parameters (SR0100.8+) • 91
 Questions • 99
 Replace file - Logic (SR0100.3.3.1.1) • 98

Replace file (SR0100.3.3.1) • 98
 Replace file (SR0100.8.5) • 95
 Representation during execution (SR0100.1+) • 84
 Representation in Navigator (SR0100.4+) • 85
 Representation in sub-report (SR0100.5+) • 86
 Select manually - Logic (SR0100.3.1.1.1) • 97
 Select manually (SR0100.3.1.1) • 97
 Select manually (SR0100.8.4) • 95
 Select PDF (SR0100.2.2) • 89
 Selection mode (SR0100.2.1) • 87
 Start time (Framework capability) • 101
 Sub-report elements (SR0100.5.1) • 86
 System-triggered exceptions (SR0100.3.2+) • 96
 User-triggered exceptions (SR0100.3.1+) • 97

W

Write context data (SR0140+) • 131
 Active mode (SR0140.1.2) • 132
 Automatic completion mode (SR0140.2.2) • 137
 Bundle process parameters (BigDecimal value, Framework capability) • 145
 Bundle process parameters (Boolean value, Framework capability) • 145
 Bundle process parameters (Duration value, Framework capability) • 146
 Bundle process parameters (Long value, Framework capability) • 146
 Bundle process parameters (Measured value, Framework capability) • 147
 Bundle process parameters (String value, Framework capability) • 147
 Bundle process parameters (Timestamp value, Framework capability) • 148
 Business logic (SR0140.2+) • 137
 Change of data type not allowed (SR0140.3.6.3) • 152
 Common sub-report elements (Framework capability) • 135
 Completed mode (SR0140.1.3) • 133
 Completion time (Framework capability) • 154
 Confirm phase (SR0140.2.3) • 138
 Context and key check - Logic (SR0140.3.2.1.1) • 149

Context and key check (SR0140.3.2.1) • 149	Preview mode (SR0140.1.1) • 132
Context and key check (SR0140.8.5) • 144	Process parameters (SR0140.8+) • 141
Context definition (SR0140.8.3) • 144	Questions • 151
Context identifier (SR0140.9.1) • 154	Representation during execution (SR0140.1+) • 131
Context identifier not defined (SR0140.3.6.2) • 152	Representation in Navigator (SR0140.4+) • 135
Decisions • 151	Representation in Sub-report (SR0140.5+) • 135
Error messages (SR0140.3.6+) • 152	Start time (Framework capability) • 153
Exceptions (SR0140.3+) • 148	Sub-report elements (SR0140.5.1) • 136
Identifier (Framework capability) • 154	System-triggered exceptions (SR0140.3.2+) • 149
Information column (SR0140.4.1) • 135	User-triggered exceptions (SR0140.3.1+) • 150
Information messages • 151	
Instance count (Framework capability) • 153	
Instruction (SR0140.8.1) • 143	
Instruction link definition (Framework capability) • 143	
Instruction text with links (Framework capability) • 142	
Key not defined (SR0140.3.6.1) • 152	
Manual completion mode (SR0140.2.1) • 137	
Master (Bundle identifier) (SR0140.8.10) • 147	
Master (Bundle identifier) (SR0140.8.11) • 148	
Master (Bundle identifier) (SR0140.8.12) • 148	
Master (Bundle identifier) (SR0140.8.6) • 145	
Master (Bundle identifier) (SR0140.8.7) • 146	
Master (Bundle identifier) (SR0140.8.8) • 146	
Master (Bundle identifier) (SR0140.8.9) • 147	
Mode (SR0140.8.2) • 143	
Output variables (SR0140.9+) • 153	
Override BigDecimal value with wrong format (SR0140.3.6.4) • 152	
Override Duration value with wrong format (SR0140.3.6.5) • 152	
Override Long value with wrong format (SR0140.3.6.6) • 153	
Override Measured Value with wrong format (SR0140.3.6.7) • 153	
Override Timestamp value with wrong format (SR0140.3.6.8) • 153	
Override value - Logic (SR0140.3.1.1.1) • 150	
Override value (SR0140.3.1.1) • 150	
Override value (SR0140.8.4) • 144	
Phase column (Framework capability) • 135	
Post-completion exceptions • 151	