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EBR PHASES

RELEASE 8.4

FUNCTIONAL REQUIREMENT SPECIFICATION

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Allen-Bradley • Rockwell Software

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Chapter 1

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 93).

The revision history (page 96) list the changes made to the document with PharmaSuite 8.3 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

- 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.

Chapter 2

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 12) (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.

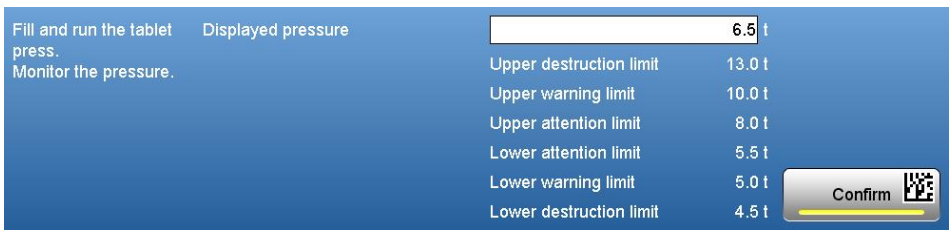

Figure 1: Get process value during execution

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 7))
2. Box for <actual process value, default value>
   (UoM taken from **Value configuration (SR0010.8.2)** process parameter (page 7) and default taken from **Limit definition (SR0010.8.5)** process parameter (page 10))
3. List of configured limits
   (taken from **Limit configuration (SR0010.8.4)** process parameter (page 7) and **Limit definition (SR0010.8.5)** process parameter (page 10))
4. **Confirm** button (disabled).

Active mode (SR0010.1.1)

1. <Instruction text> (column 1 and column 2)
   (taken from **Instruction (SR0010.8.1)** process parameter (page 7))
2. Box for <actual process value, default value><UoM>
   (UoM and editable status taken from **Value configuration (SR0010.8.2)** process parameter (page 7) and default taken from **Limit definition (SR0010.8.5)** process parameter (page 10))
3. List of configured limits
   (taken from **Limit configuration (SR0010.8.4)** process parameter (page 7) and **Limit definition (SR0010.8.5)** process parameter (page 10))
4. **Confirm** button.

Completed mode (SR0010.1.3)

1. <Instruction text> (column 1 and column 2)
   (taken from **Instruction (SR0010.8.1)** process parameter (page 7))
2. <Actual value>
   (UoM taken from **Value configuration (SR0010.8.2)** process parameter (page 7))

3. List of configured limits
   (taken from **Limit configuration (SR0010.8.4)** process parameter (page 7) and **Limit definition (SR0010.8.5)** process parameter (page 10))
4. **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)

- 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	■ 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 10). Limits are checked in the following order: LLL/HHH » LL/HH » L/H.
	10.1	If the check is violated, phase creates the **Limit violation (SR0010.3.2.1)** system-triggered exception (page 12).
	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.

BASIC PARAMETERS

Instruction (SR0010.8.1)

➢ For recent changes, see revision history (page 96).

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	
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 10).
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 10) 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.
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 10) 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.

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 10) 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.
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 12).

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 7) (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	Defines the values of the lower 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.
LL limit	MeasuredValue	
L limit	MeasuredValue	
Reference value	MeasuredValue	Defines the reference value in case of a limit range of the **Relative** limit type.
H limit	MeasuredValue	Defines 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	Defines 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

Limit	Absolute value definition	Relative value definition
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 13).

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 14).

Exceptions (SR0010.3+)

The phase supports user-defined, user-triggered (page 13), system-triggered (page 12), and post-completion exceptions (page 14) and their configuration by means of process parameters (page 6).

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+)

➢ For recent changes, see revision history (page 96).

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 7))
  <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 exception.

Step	#	Description
	20	In case of a limit violation, the phase can be completed if all of the following applies: ■ 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 7)).

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 11))
  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.

Step	#	Description
	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 11).
Operator signs exception	40	Phase records 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 11))
  - 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 10).
	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.

Chapter 3

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 19).
Anomalies that occur during processing are covered by the phase exception handling (page 23) (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 17), in the Navigator (page 18), and in the sub-report (page 19).

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 20))
2. Box for <actual text value, default value>
   (Default taken from **Expected value definition (SR0020.8.5)** process parameter (page 21))
3. Configured expected value
   (taken from **Expected value configuration (SR0020.8.4)** process parameter (page 21) and **Expected value definition (SR0020.8.5)** process parameter (page 21))
4. **Confirm** button (completed).

Active mode (SR0020.1.1)

1. <Instruction text> (column 1 and column 2)
   (taken from **Instruction (SR0020.8.1)** process parameter (page 20))
2. Box for <actual text value, default value>
   (Default taken from **Expected value definition (SR0020.8.5)** process parameter (page 21))
3. Configured expected value
   (taken from **Expected value configuration (SR0020.8.4)** process parameter (page 21) and **Expected value definition (SR0020.8.5)** process parameter (page 21))
4. **Confirm** button.

Completed mode (SR0020.1.3)

1. <Instruction text> (column 1 and column 2)
   (taken from **Instruction (SR0020.8.1)** process parameter (page 20))
2. <Actual value>
3. Configured expected value
   (taken from **Expected value configuration (SR0020.8.4)** process parameter (page 21) and **Expected value definition (SR0020.8.5)** process parameter (page 21))
4. **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)

- 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 18).
	20	■ 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 20).

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 21).
	10.1	If the check is violated, phase creates the **Violation of expected value (SR0020.3.2.1)** system-triggered exception (page 23).
	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.

BASIC PARAMETERS

Instruction (SR0020.8.1)

➢ For recent changes, see revision history (page 96).

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	
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 21) 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 23).

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 24).

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 25).

Exceptions (SR0020.3+)

The phase supports user-defined, user-triggered (page 24), system-triggered (page 23), and post-completion exceptions (page 25) and their configuration by means of process parameters (page 20).

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+)

➢ For recent changes, see revision history (page 96).

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 21))
  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 exception.
	20	In case of a violation of an expected value, the phase can be completed if all of the following applies: ■ 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 21)).

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 22))
  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 22).
Operator signs exception	40	Phase records 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 22))
  - 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 21).
	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.

Chapter 4

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 30).

Figure 3: Show instruction text during execution

Layout

The phase provides individual layouts for its representation during execution (page 29), in the Navigator (page 30), and in the sub-report (page 30).

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 31) and the **Layout (SR0030.8.2)** process parameter (page 31))
2. **Confirm** button (disabled).

Active mode (SR0030.1.1)

1. <Instruction text> (column 1, column 2, and column 3)
   (taken from **Instruction (SR0030.8.1)** process parameter (page 31) and the **Layout (SR0030.8.2)** process parameter (page 31))

2. **Confirm** button.

Completed mode (SR0030.1.3)

1. <Instruction text> (column 1, column 2, and column 3)
   (taken from **Instruction (SR0030.8.1)** process parameter (page 31) and the **Layout (SR0030.8.2)** process parameter (page 31))
2. **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)

- 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.

BASIC PARAMETERS

Instruction (SR0030.8.1)

➢ For recent changes, see revision history (page 96).

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 31)).
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 32), system-triggered (page 32), and post-completion exceptions (page 32) and their configuration by means of process parameters (page 31).

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.

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 37).

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

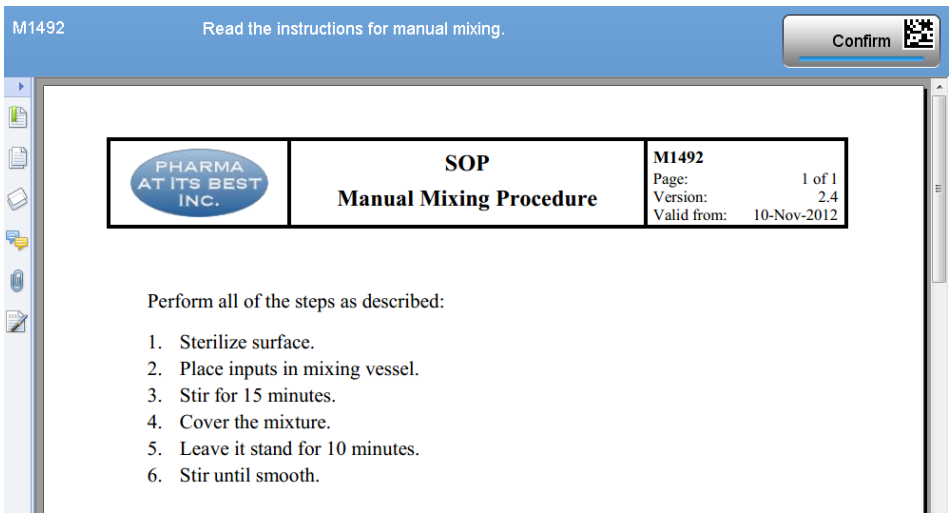

Figure 4: Show document during execution

Layout

The phase provides individual layouts for its representation during execution (page 36), in the Navigator (page 36), and in the sub-report (page 37).

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 38))
2. <Instruction text>
   (taken from **Instruction (SR0040.8.1)** process parameter (page 38))
3. **Confirm** button (disabled).

Active mode (SR0040.1.1)

1. <Name of the work instruction>
   (taken from **Document (SR0040.8.2)** process parameter (page 38))
2. <Instruction text>
   (taken from **Instruction (SR0040.8.1)** process parameter (page 38))
3. <Work instruction>, in an HTML container
4. **Confirm** button.

Completed mode (SR0040.1.3)

1. <Name of the work instruction>
   (taken from **Document (SR0040.8.2)** process parameter (page 38))
2. <Instruction text>
   (taken from **Instruction (SR0040.8.1)** process parameter (page 38))
3. **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)

- 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.

BASIC PARAMETERS

Instruction (SR0040.8.1)

➢ For recent changes, see revision history (page 96).

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 38), system-triggered (page 38), and post-completion exceptions (page 38) and their configuration by means of process parameters (page 37).

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 43).
Anomalies that occur during processing are covered by the phase exception handling (page 47) (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.

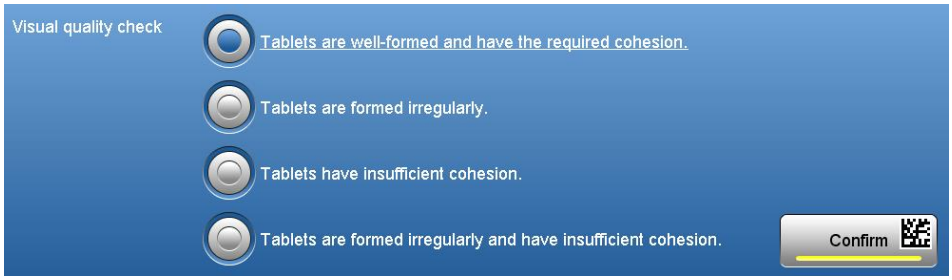

Figure 5: Get choice value during execution

Layout

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

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 45))
2. List of options
   (taken from **List of options (SR0080.8.2)** process parameter (page 45))
   In case of configuration errors, phase displays **Invalid expected value configuration (SR0080.3.6.1)** error message (page 50), **Invalid default value configuration (SR0080.3.6.2)** error message (page 51), or **Invalid choice item configuration (SR0080.3.6.3)** error message (page 51).
3. **Confirm** button (disabled).

Active mode (SR0080.1.2)

1. <Instruction text>
   (taken from **Instruction (SR0080.8.1)** process parameter (page 45))
2. List of options
   (taken from **List of options (SR0080.8.2)** process parameter (page 45))
   In case of configuration errors, phase displays **Invalid expected value configuration (SR0080.3.6.1)** error message (page 50), **Invalid default value configuration (SR0080.3.6.2)** error message (page 51), or **Invalid choice item configuration (SR0080.3.6.3)** error message (page 51).
3. **Confirm** button.

Completed mode (SR0080.1.3)

1. <Instruction text>
   (taken from **Instruction (SR0080.8.1)** process parameter (page 45))
2. Selected option
3. **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 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 42).
	20	In case of configuration errors, phase displays **Invalid expected value configuration (SR0080.3.6.1)** error message (page 50), **Invalid default value configuration (SR0080.3.6.2)** error message (page 51), or **Invalid choice item configuration (SR0080.3.6.3)** error message (page 51).

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 46)	20	One-click completion is enabled: ■ Phase is completed automatically. ■ Phase checks expected value in corresponding step of **Confirm phase (SR0080.2.3)** function (page 44). If a **system-triggered (SR0080.3.2+)** exception (page 48) 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 42) 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 51). When the error message has been confirmed, phase returns to the **Active mode (SR0080.1.2)** layout (page 42). 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 47).
	20.1	If the check is violated, phase creates the **Expected value check (SR0080.3.2.1)** system-triggered exception (page 48).
	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.

BASIC PARAMETERS

Instruction (SR0080.8.1)

➢ For recent changes, see revision history (page 96).

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 47) 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 47) 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 48).

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 49).

Exceptions (SR0080.3+)

The phase supports user-defined, user-triggered (page 48), system-triggered (page 48), and post-completion exceptions (page 49) and their configuration by means of process parameters (page 45).

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+)

➢ For recent changes, see revision history (page 96).

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 46))
  Expected key/text: <expected key>/<expected text> (taken from **Expected value definition (SR0080.8.3)** process parameter (page 47))
  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 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 42)
  Confirm button.
- <Exception text>
  (taken from **Correct value (SR0080.8.6)** process parameter (page 47))
  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.

Step	#	Description
Operator confirms exception	30	Phase checks the value against the settings of the **Expected value definition (SR0080.8.3)** process parameter (page 47).
	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 42) and the **Active mode (SR0080.1.2)** layout (page 42). 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.

Chapter 7

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 55). Anomalies that occur during processing are covered by the phase exception handling (page 63) (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

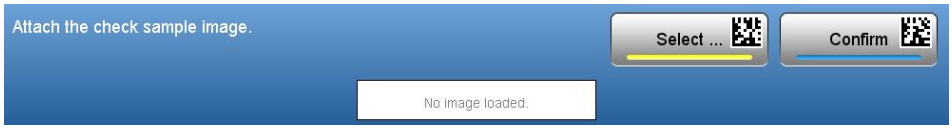

Figure 7: Upload image during execution - Selection mode

Layout

The phase provides individual layouts for its representation during execution (page 54), in the Navigator (page 55), and in the sub-report (page 55).

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 60))
2. Depends on **Mode (SR0090.8.2)** process parameter (page 60):
   - 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 text>
   (taken from **Instruction (SR0090.8.1)** process parameter (page 60))
2. Depends on **Mode (SR0090.8.2)** process parameter (page 60):
   - In **Selection** mode: **Select** button to open file selection dialog
   - In all other modes than **Selection**: **Load** button to load pre-defined image

3. <Full path name of image file>
   <Modification time of image file>
   Uploaded image.
4. **Confirm** button.

Completed mode (SR0090.1.3)

1. <Instruction text>
   (taken from **Instruction (SR0090.8.1)** process parameter (page 60))
2. <Full path name of image file>
   <Modification time of image file>
   Uploaded image.
3. **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 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 54).
Operator action	20	The **Select** button opens a file selection dialog, see **Select image (SR0090.2.2)** function (page 58).

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 54).

Step	#	Description
Operator action	20	The **Load** button loads an image file, see **Load image (SR0090.2.5)** function (page 59).

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 54).
Phase loads image file	20	Phase loads the image automatically according to the settings of the **File location (SR0090.8.3)** process parameter (page 61). If one of the following issues occurs, phase displays an error message: 1. Image cannot be loaded, **Load image error (SR0090.3.6.1)** error message (page 67). 2. Image cannot be displayed, **Display image error (SR0090.3.6.2)** error message (page 67). 3. Image cannot be determined, **Image ambiguous (SR0090.3.6.3)** error message (page 67). When the error message has been confirmed, phase returns to the **Active mode (SR0090.1.2)** layout (page 54). Otherwise continue with step 40.
Operator interaction	30	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 59). The same checks apply as for step 20.
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 54).
	20	Phase loads the image automatically according to the settings of the **File location (SR0090.8.3)** process parameter (page 61). If one of the following issues occurs, phase displays an error message: 1. Image cannot be loaded, **Load image error (SR0090.3.6.1)** error message (page 67). 2. Image cannot be displayed, **Display image error (SR0090.3.6.2)** error message (page 67). 3. Image cannot be determined, **Image ambiguous (SR0090.3.6.3)** error message (page 67). When the error message has been confirmed, phase returns to the **Active mode (SR0090.1.2)** layout (page 54). Otherwise continue with step 40.
Operator interaction	30	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 59). The same checks apply as for step 20. The phase needs to be completed manually by the operator.
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 61).

Step	#	Description
	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 61).
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	Phase loads the image according to the settings of the **File location (SR0090.8.3)** process parameter (page 61). If one of the following issues occurs, phase displays an error message: 1. Image cannot be loaded, **Load image error (SR0090.3.6.1)** error message (page 67). 2. Image cannot be displayed, **Display image error (SR0090.3.6.2)** error message (page 67). 3. Image cannot be determined, **Image ambiguous (SR0090.3.6.3)** error message (page 67). When the error message has been confirmed, phase returns to the **Active mode (SR0090.1.2)** layout (page 54). Otherwise continue with step 20.
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 61)	20	If **Mandatory upload check** is enabled: ■ If no image has been uploaded, phase creates the **Mandatory upload check (SR0090.3.2.1)** system-triggered exception (page 63). When the exception has been registered, phase returns to the **Active mode (SR0090.1.2)** layout (page 54). ■ 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.

BASIC PARAMETERS

Instruction (SR0090.8.1)

➢ For recent changes, see revision history (page 96).

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.

Attribute	Type	Comment
		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 60) is set to **Selection**, the specified path is the starting point for the file selection dialog. The operator can navigate to another directory.
File name	Text	Defines the name of the image file to be loaded. If the **Mode (SR0090.8.2)** process parameter (page 60) is set to **Selection**, all image files are available for selection. If the **Mode (SR0090.8.2)** process parameter (page 60) is **not** set to **Selection**, the file name must be unique even if wildcards are used.

CONFIGURATION OF SYSTEM-TRIGGERED EXCEPTIONS

Mandatory upload check (SR0090.8.6)

Attribute	Type	Comment
Enabled	Flag	Controls if a check is performed. If not, the phase can be completed without an image upload. If so, the phase can only be completed with an image upload or if the **Mandatory upload check (SR00903.2.1)** system-triggered

Attribute	Type	Comment
		exception (page 63) has been registered.
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. **Mandatory** if the **Enabled** attribute is set to **Yes**.

See also **Mandatory upload check (SR0090.3.2.1)** system-triggered exception (page 63).

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 64).

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 65).

Exceptions (SR0090.3+)

The phase supports user-defined, user-triggered (page 64), system-triggered (page 63), and post-completion exceptions (page 65) and their configuration by means of process parameters (page 60).

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+)

➢ For recent changes, see revision history (page 96).

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 61))

- 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 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 60) 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 62))

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 58).

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 63))
  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 58). 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
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

Chapter 8

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 87).

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 72). Anomalies that occur during processing are covered by the phase exception handling (page 80) (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.

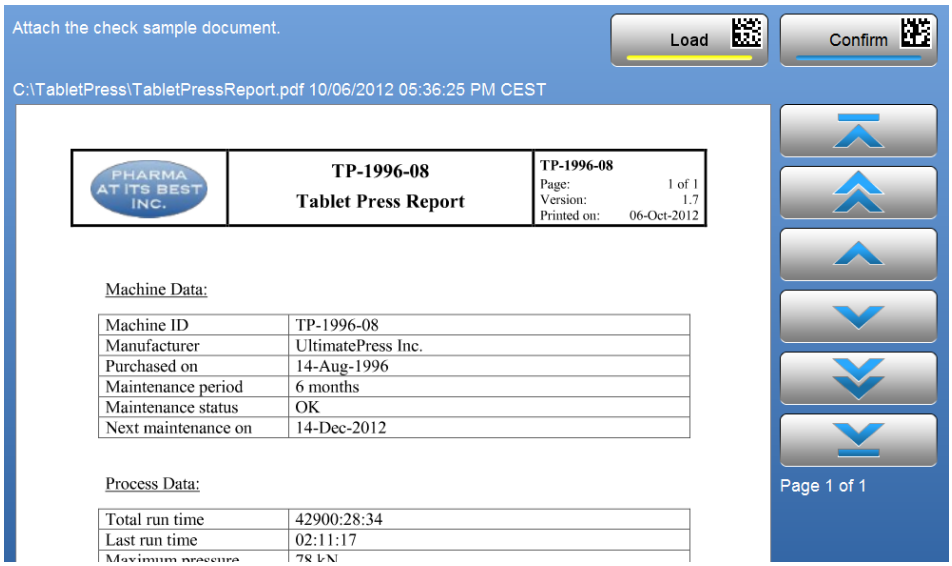

Figure 8: Upload PDF during execution - Automatic loading mode

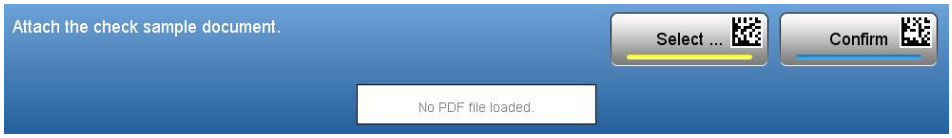

Figure 9: Upload PDF during execution - Selection mode

Layout

The phase provides individual layouts for its representation during execution (page 70), in the Navigator (page 71), and in the sub-report (page 72).

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 76))
2. Depends on **Mode (SR0100.8.2)** process parameter (page 77):
   - 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 text>
   (taken from **Instruction (SR0100.8.1)** process parameter (page 76))
2. Depends on **Mode (SR0100.8.2)** process parameter (page 77):
   - In **Selection** mode: **Select** button to open file selection dialog
   - In all other modes than **Selection**: **Load** button to load pre-defined PDF file
3. <Full path name of PDF file>
   <Modification time of PDF file>
   Content of uploaded PDF file.
4. Buttons to navigate through the uploaded PDF file (**First page**, **Previous page**, **Next page**, **Last page**)
5. Page number of the currently displayed page and the total number of pages
6. **Confirm** button.

Completed mode (SR0100.1.3)

1. <Instruction text>
   (taken from **Instruction (SR0100.8.1)** process parameter (page 76))
2. <Full path name of PDF file>
   <Modification time of PDF file>
   Content of uploaded PDF file.
3. **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 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 71).

Step	#	Description
Operator action	20	The **Select** button opens a file selection dialog, see **Select PDF (SR0100.2.2)** function (page 75).

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 71).
Operator action	20	The **Load** button loads a PDF file, see **Load PDF (SR0100.2.5)** function (page 75).

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	Phase loads the PDF file automatically according to the settings of the **File location (SR0100.8.3)** process parameter (page 77). If one of the following issues occurs, phase displays an error message: 1. PDF cannot be loaded, **Load PDF error (SR0100.3.6.1)** error message (page 83). 2. PDF cannot be displayed, **Display PDF error (SR0100.3.6.2)** error message (page 84). 3. PDF cannot be determined, **PDF ambiguous (SR0100.3.6.3)** error message (page 84). When the error message has been confirmed, phase returns to the **Active mode (SR0100.1.2)** layout (page 71). Otherwise continue with step 40.

Step	#	Description
Operator interaction	30	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 75). The same checks apply as for step 20.
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 71).
	20	Phase loads the PDF file automatically according to the settings of the **File location (SR0100.8.3)** process parameter (page 77). If one of the following issues occurs, phase displays an error message: 1. PDF cannot be loaded, **Load PDF error (SR0100.3.6.1)** error message (page 83). 2. PDF cannot be displayed, **Display PDF error (SR0100.3.6.2)** error message (page 84). 3. PDF cannot be determined, **PDF ambiguous (SR0100.3.6.3)** error message (page 84). When the error message has been confirmed, phase returns to the **Active mode (SR0100.1.2)** layout (page 71). Otherwise continue with step 40.
Operator interaction	30	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 75). The same checks apply as for step 20. The phase needs to be completed manually by the operator.
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 77).
	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 77).
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	Phase loads the PDF file according to the settings of the **File location (SR0100.8.3)** process parameter (page 77). If one of the following issues occurs, phase displays an error message: 1. PDF cannot be loaded, **Load PDF error (SR0100.3.6.1)** error message (page 83). 2. PDF cannot be displayed, **Display PDF error (SR0100.3.6.2)** error message (page 84). 3. PDF cannot be determined, **PDF ambiguous (SR0100.3.6.3)** error message (page 84).

Step	#	Description
		When the error message has been confirmed, phase returns to the **Active mode (SR0100.1.2)** layout (page 71). Otherwise continue with step 20.
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.
Phase checks setting of **Mandatory upload check (SR0100.8.6)** process parameter (page 78)	20	If **Mandatory upload check** is enabled: ■ If no PDF file has been uploaded, phase creates the **Mandatory upload check (SR0100.3.2.1)** system-triggered exception (page 80). When the exception has been registered, phase returns to the **Active mode (SR0100.1.2)** layout (page 71). ■ 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.

BASIC PARAMETERS

Instruction (SR0100.8.1)

➢ For recent changes, see revision history (page 96).

Attribute	Type	Comment
Column 1	HTML text	Instruction text to be displayed. **Restriction:** Maximum length is 2000 characters (including HTML tags).

Attribute	Type	Comment
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 77) is set to **Selection**, the specified path is the starting point for the file selection dialog. The operator can navigate to another directory.
File name	Text	Defines the name of the PDF file to be loaded. If the **Mode (SR0100.8.2)** process parameter (page 77) is set to **Selection**, wildcards are supported to restrict the number of displayed PDF files. Example: rep*.pdf displays all PDF files starting with rep.

Attribute	Type	Comment
		If the **Mode (SR0100.8.2)** process parameter (page 77) is **not** set to **Selection**, the file name must be unique even if wildcards are used.

CONFIGURATION OF SYSTEM-TRIGGERED EXCEPTIONS

Mandatory upload check (SR0100.8.6)

Attribute	Type	Comment
Enabled	Flag	Controls if a check is performed. If not, the phase can be completed without a PDF file upload. 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 80) has been registered.
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. **Mandatory** if the **Enabled** attribute is set to **Yes**.

See also **Mandatory upload check (SR0100.3.2.1)** system-triggered exception (page 80).

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 81).

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 82).

Exceptions (SR0100.3+)

The phase supports user-defined, user-triggered (page 80), system-triggered (page 80), and post-completion exceptions (page 81) and their configuration by means of process parameters (page 76).

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+)

➢ For recent changes, see revision history (page 96).

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 78))
  - 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 exception.
Operator confirms exception	30	Phase returns to the **Active mode (SR0100.1.2)** layout (page 71).

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 77) 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 79))
  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 75).

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 79))
  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.

Step	#	Description
Operator confirms exception	30	See **Select PDF (SR0100.2.2)** function (page 75). 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
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

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

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 89).

Anomalies that occur during processing are covered by the phase exception handling (page 91) (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).

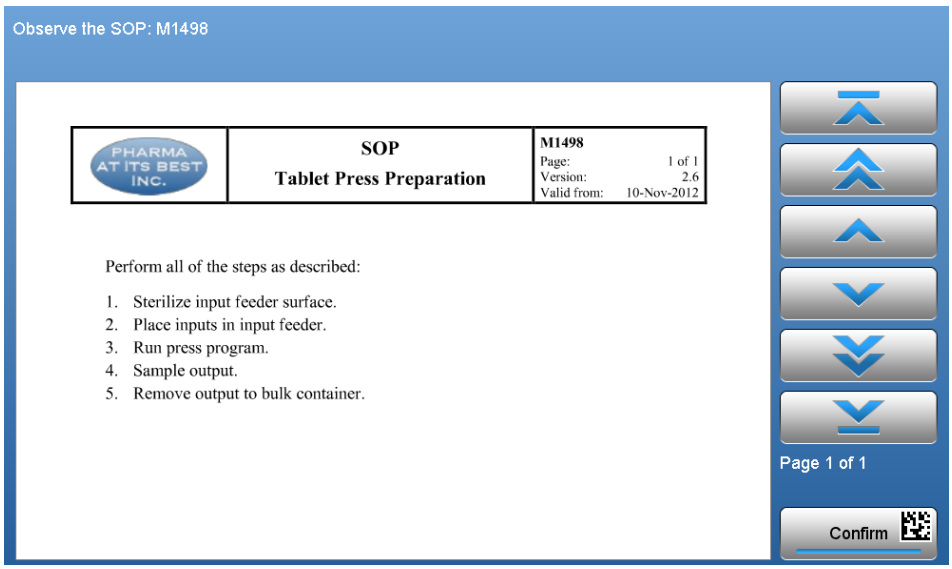

Figure 10: Show URL during execution

Layout

The phase provides individual layouts for its representation during execution (page 88), in the Navigator (page 88), and in the sub-report (page 89).

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 90))
2. <URL>
   (taken from **Document (SR0120.8.2)** process parameter (page 90))
3. **Confirm** button (disabled).

Active mode (SR0120.1.2)

1. <URL>
   (taken from **Document (SR0120.8.2)** process parameter (page 90))
2. <Instruction text>
   (taken from **Instruction (SR0120.8.1)** process parameter (page 90))
3. <Document>, in a PDF viewer
4. Buttons to navigate through the document (**First page**, **Previous page**, **Previous line**, **Next line**, **Next page**, **Last page**)
5. **Confirm** button.

Completed mode (SR0120.1.3)

1. <Instruction text>
   (taken from **Instruction (SR0120.8.1)** process parameter (page 90))
2. <URL>
   (taken from **Document (SR0120.8.2)** process parameter (page 90))
3. **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)

- 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.

BASIC PARAMETERS

Instruction (SR0120.8.1)

➢ For recent changes, see revision history (page 96).

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 (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 91).

Exceptions (SR0120.3+)

The phase supports user-defined, user-triggered (page 91), system-triggered (page 91), and post-completion exceptions (page 91) and their configuration by means of process parameters (page 90).

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+)

➢ For recent changes, see revision history (page 96).

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:

- <Exception text>
  (taken from **Loading failed (SR0120.8.3)** process parameter (page 90))
  URL: <URL>
  - Example:
    SOP 0001 could not be loaded.
    URL: 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 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.

Chapter 10

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-RM004E-EN-E

TIP

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

Appendix A

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
Martin Dittmer	Product Manager
Steffen Landes	Development Manager
Martin Irmisch	Test Manager

In addition, the electronic document approval via DMS is confirmed by a handwritten signature of all approvers in the Quality Document when the release is completed. The Quality Document summarizes the quality-related planning activities and results of a PharmaSuite release.

Version Information

Object	Version
PharmaSuite	8.4
Get process value	2.1 MR6
Get text value	2.1 MR6
Show instruction text	2.0 MR6
Show document	2.0 MR5
Get choice value	1.0 MR5
Upload image	1.0 MR7
Upload PDF	1.0 MR6
Show URL	1.0 MR2
Functional Requirement Specification	1.0

Revision History

The following table describes 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
System-triggered Exceptions (SR0010.3.2+) (page 12)	Update The message dialog of a system-triggered exception no longer provides a **Cancel** button.	1.0
Instruction (SR0010.8.1) (page 7)	Update The maximum length of the **Instruction** process parameter is 2000 characters (including HTML tags). No change of code.	1.0

Changes related to "Get Text Value Phase" (page 17):

Object	Description	Document
System-triggered Exceptions (SR0020.3.2+) (page 23)	Update The message dialog of a system-triggered exception no longer provides a **Cancel** button.	1.0
Instruction (SR0020.8.1) (page 20)	Update The maximum length of the **Instruction** process parameter is 2000 characters (including HTML tags). No change of code.	1.0

Changes related to "Show Instruction Text Phase" (page 29):

Object	Description	Document
Instruction (SR0030.8.1) (page 31)	Update The maximum length of the **Instruction** process parameter is 2000 characters (including HTML tags). No change of code.	1.0

Changes related to "Show Document Phase" (page 35):

Object	Description	Document
Instruction (SR0040.8.1) (page 38)	Update The maximum length of the **Instruction** process parameter is 2000 characters (including HTML tags). No change of code.	1.0

Changes related to "Get Choice Value Phase" (page 41):

Object	Description	Document
System-triggered Exceptions (SR0080.3.2+) (page 48)	Update The message dialog of a system-triggered exception no longer provides a **Cancel** button.	1.0
Instruction (SR0080.8.1) (page 45)	Update The maximum length of the **Instruction** process parameter is 2000 characters (including HTML tags). No change of code.	1.0

Changes related to "Upload Image Phase" (page 53):

Object	Description	Document
System-triggered Exceptions (SR0090.3.2+) (page 63)	Update The message dialog of a system-triggered exception no longer provides a **Cancel** button.	1.0
Instruction (SR0090.8.1) (page 60)	Update The maximum length of the **Instruction** process parameter is 2000 characters (including HTML tags). No change of code.	1.0

Changes related to "Upload PDF Phase" (page 69):

Object	Description	Document
System-triggered Exceptions (SR0100.3.2+) (page 80)	Update The message dialog of a system-triggered exception no longer provides a **Cancel** button.	1.0
Instruction (SR0100.8.1) (page 76)	Update The maximum length of the **Instruction** process parameter is 2000 characters (including HTML tags). No change of code.	1.0

Changes related to "Show URL Phase" (page 87):

Object	Description	Document
System-triggered Exceptions (SR0120.3.2+) (page 91)	Update The message dialog of a system-triggered exception no longer provides a **Cancel** button.	1.0
Instruction (SR0120.8.1) (page 90)	Update The maximum length of the **Instruction** process parameter is 2000 characters (including HTML tags). No change of code.	1.0

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