

SAP BUSINESS TECHNOLOGY PLATFORM | EXTERNAL

Configuration Guide

Capital Expenditure Approval Process

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Overview

This document provides information about what needs to be configured to make the Live Process content package Capital Expenditure Approval (CAPEX) Process run. The main audience of this document are IT administrators, developers, LOB experts, and product owners. The document describes what needs to be done to make the solution run.

The live process content package enables customers to accelerate the digitalization of their capital investment approval process in a transparent way and provide flexibility to meet business requirements. It includes processes, decisions and visibility scenario content enabling customers to flexibly configure process variants in a low-code to no-code approach.

The CAPEX process enables customers to automate capital expenditure request approvals and provide automation across all steps. A request is created by the user and depending on the amount of investment and other related attributes, number of approval steps are determined. The following steps are included as a part of this CAPEX process:

- Business user creates a Capital Expenditure Approval Process request
- Approvers are determined using decisions
- Approvers are notified via email
- Approvers have three decision options (Approve, Reject, Request Rework), and based on the decision, the next approval step will be created or requested for a rework or the approval request will be terminated.
- Acceptance from all Approvers will send a notification to the requestor and complete the process.

Prerequisite

Please make sure you have completed the setup guide shared with this content package.

Live Process Artifacts

Process content package

A process content package consists of process steps, process templates, process variants, decisions, visibility models, and documentation. Refer to the [help documentation](#) about these artifacts.

A business process consists of steps that can be executed independently. A process step consists of set of activities together add value to the business. Decisions and Policies as business rules are invoked from a process step. All the activities involved in a process step are grouped and represented as a process step. Table 1 represents the list of steps defined to use in Capital Expenditure Approval process.

A process step is added to a process template with a constraint model. The constraint model defines the number of times a process step could occur in a new process variant.

Table 1. Process Steps.

PROCESS STEPS	CARDINALITY	DETAILED DESCRIPTION
Initialization	1..1	Initialize the business process with appropriate business data retrieved from business rules. This step can occur only once, and it must be the first step in a process variant.
Approval	0.. N	Approval of Capital Expenditure Request. This step can occur multiple times in a process variant. It is possible to rename the step to appropriate approval roles.
Finalization	1..1	Post processing after completion of all the configured approval steps. This step can occur only once, and it should be the last step in a process variant.

Table 2. Process Step Properties.

PROCESS STEP	PROPERTIES	DETAILED DESCRIPTION
Approval	Role Name	The role of the approver. This text is added to all the activities which are part of this step. This will be visible in Process Visibility.
	Approval Step	The approval step name. The Step names are used in Decisions, which can be configured to determine the approvers.
	Full Re-Approval	When an approver requests rework, this value defines which approval step is taken next: <ul style="list-style-type: none"> • 'true' will let the same approver continue (keeping the previous approvals) • 'false' will restart the approval request from the first approver.

Table 3. Process Attributes.

PROCESS ATTRIBUTES	DETAILED DESCRIPTION
Request Id	Unique ID of the request
Total Cost	Total cost of Investment
Investment Type	Type of investment
CAPEX	Capital Expenditure
OPEX	Operational Expenditure
ROI	Return on Investment
IRR	Internal Rate of Return
Country	Country of Investment
Currency	Currency of Investment
Business Unit	Business Unit requesting Investment
Energy Efficiency	Energy Efficiency of the asset in percentage
CO2 Efficiency	CO2 efficiency of the asset
Energy Cost Savings	Energy Cost savings of the asset in percentage
Water Savings	Water Savings of the asset in percentage
Status of the Approval Workflow	Current status of the Approval Workflow

Process Variants

A process variant consists of multiple process steps configured by a line-of-business expert. It is possible to create multiple process variants depending on the number of approval steps to configure. An example of a Capital Expenditure Approval Process Variant is given below. Refer to [help documentation](#) about how to import content packages and configure a process variant.

The screenshot displays the SAP Manage Process Variants interface. At the top, the title bar shows 'SAP Manage Process Variants' and a user icon. Below the title bar, the process name 'CapitalExp Approval for high value investment' is displayed, along with 'Undo', 'Redo', 'Save', and 'Activate' buttons. On the left, a panel titled 'Available Steps (4)' lists four step types: 'Approval' (checked), 'Initialization' (selected), 'Finalization' (checked), and 'Generic Extension Step'. The central area shows a vertical flowchart with the following steps: 'Initialization' (green box), 'Approval by Local Manager' (blue box), 'Approval by Group Head' (blue box), 'Approval by CFO' (blue box), and 'Finalization' (orange box). The flow starts with a green circle and ends with a red circle. On the right, a 'Process Variant Properties' panel shows the 'Name' as 'CapitalExp Approval for high value investment', the 'Process' as 'Capital Expenditure', and the 'Description' as 'Capital Expenditure Approval Process'. A zoom level of 86% is indicated.

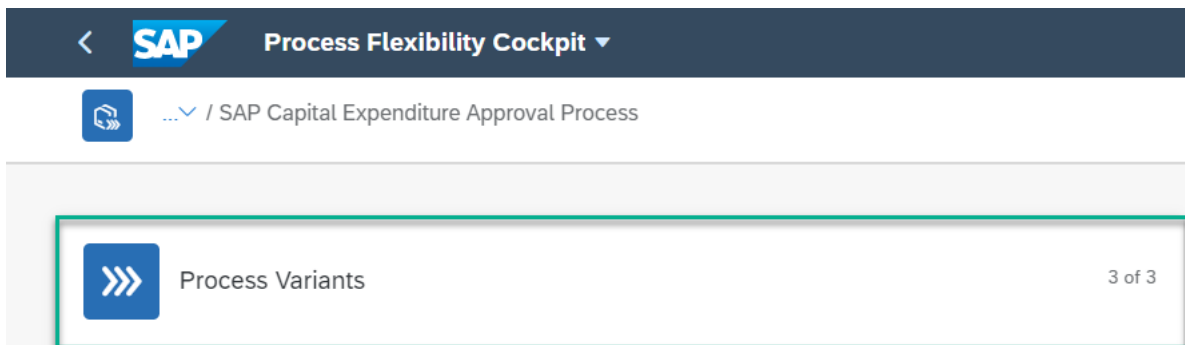
Import Capital Expenditure Approval Process Content

1. Open the **SAP Workflow Management** app. For information on accessing the app, see [Subscribe to SAP Workflow Management](#).
2. Import content package Capital Expenditure Approval Process. Refer to the standard help document about [how to import a content package](#).

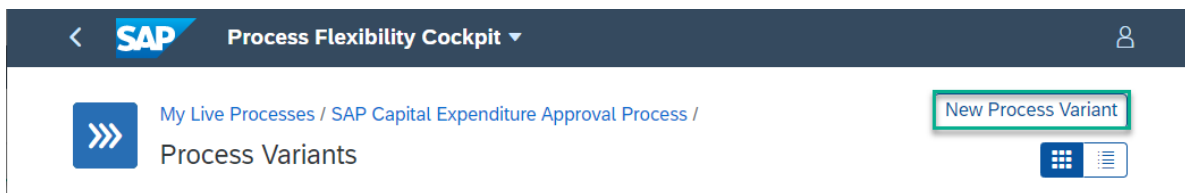


[Learn more](#)

3. Create a new variant of Capital Expenditure Approval Process. Refer to the standard help documentation about [how to create new Process Variants](#).
Open content package Capital Expenditure Approval Process in Process Flexibility Cockpit and click Process Variants.



4. Click New Process Variant.



5. Enter Name of the new Process Variant and select CapitalExpenditure as the Process.

New Process Variant

Name: *

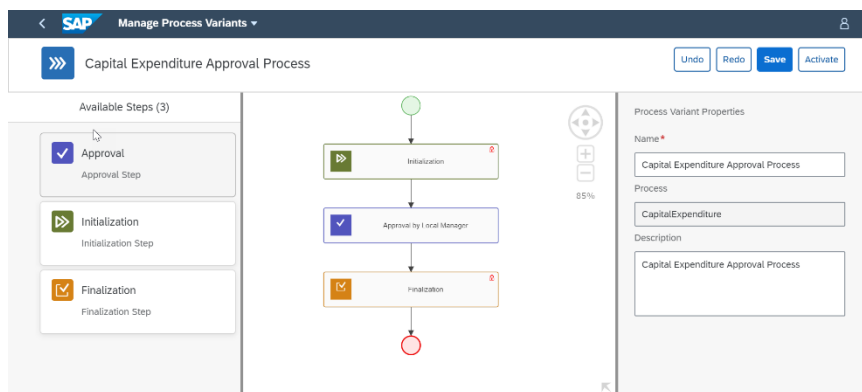
Capital Expenditure Approval Process

Process: *

CapitalExpenditure

Create Cancel

Process variant editor enable Line of Business Expert to configure Process variants.



Modify or Delete Approval Steps

1. Select Approval by Local Manager step and update Name and Description.
2. Select **Details** Tab and configure the Properties.

Role Name is used in Process Visibility to display activities of a process.

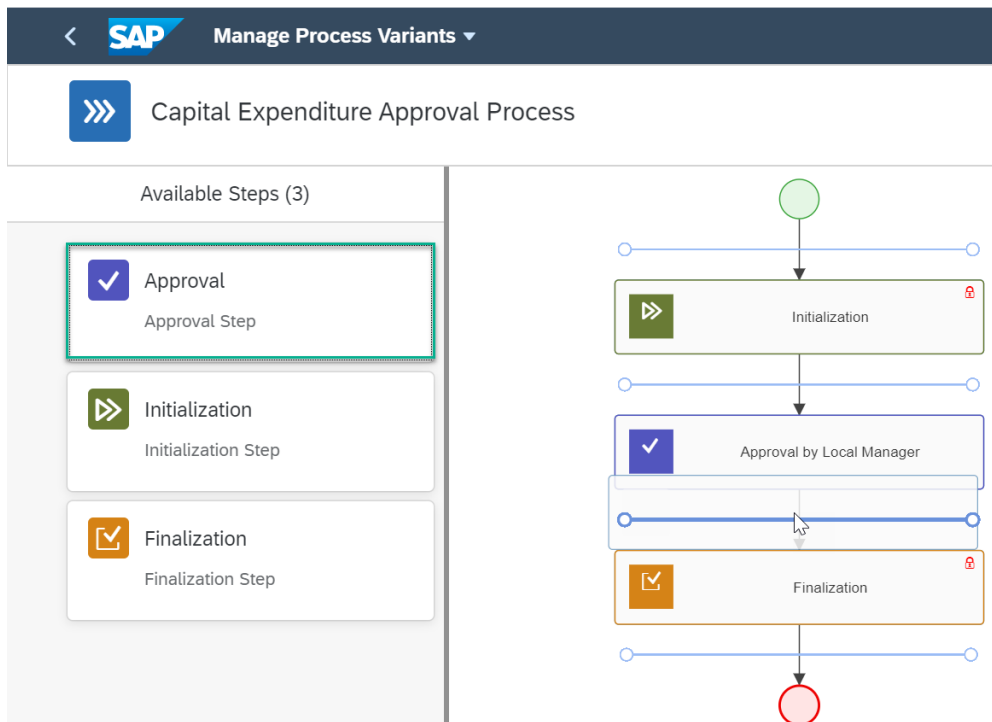
Approval Step is used to determine approvers using a preconfigured Decision.

Full-Re Approval is used to determine approval from all approvers are required.

Add new Approval Step to Process Variant

It is possible to add additional approval steps to a process variant. It is mandatory that these approval steps should be between Initialization and Finalization steps.

1. . Drag and drop the Approval step between the steps



2. Select the newly added process step and update Name and Description.
3. Select the Details Tab and update the properties Role Name, Approval Step and Full Re-Approval.
4. Save and Activate the new Process Variant.

Activation of the process variant will generate the workflow definition and deploy it to your BTP account. You can see the newly deployed Workflow definition in Monitor Workflow – Workflow Definitions application in your Fiori Launch pad.

Decisions & Policies

Decisions and policies allow to encapsulate the business logic from core applications. Business Rules capability in SAP Workflow Management enables customers to author, deploy and execute decisions. Please refer to [help documentation](#) for more details. Capital Expenditure Approval Process enables customers to flexibly configure decision to gain flexibility to:

1. Define auto-approval policy;
2. Define approval due date policy;
3. Define manual approvers policy;
4. Define process variant policy;
5. Define process administrator policy.

Auto-Approval Policy

For certain exceptions, the manual approvals can be skipped. This policy enforces those exceptions.

Input and output

Rule Name: Auto Approval

Input: Investment Details (Structure data type)

ATTRIBUTE	TYPE	DESCRIPTION
Approval Step	String	A unique identification of the approval step, as configured as the input parameter for the approval step in the process variant.
Total Cost	Number	Total cost of the investment.
Business Unit Code	String	Code of business unit or the division that is proposing the investment.
Country Code	String	Code of the country where the investment shall be made.
Investment Type Code	String	Code of the investment type

Output: Is Approval Required (Boolean)

ATTRIBUTE	TYPE	DESCRIPTION
Is Approval Required	Boolean	A flag to determine if the step can be auto approved.

Rule Definition

The auto-approval policy is defined as a text rule. You will be able use any property of the investment details to define exceptions in the approval process.

The sample decision defines that when the total investment cost is more than or equal to 10000 <any currency unit> then approval is mandatory. Otherwise the all the approval steps can be skipped. This can be changed as per the requirement.

Text Rule

▼ If

Investment Details.Total Cost >= 10000

Then

Is Approval Required: true

▼ Else

Is Approval Required: false

Due Date Determination Policy

This policy can be used to determine the due date for each approval step in the capital expenditure approval process.

Input and output

Rule Name: Determine Task Due Date

Input: Investment Details (Structure data type)

ATTRIBUTE	TYPE	DESCRIPTION
Approval Step	String	A unique identification of the approval step, as configured as the input parameter for the approval step in the process variant.
Total Cost	Number	Total cost of the investment.
Business Unit Code	String	Code of business unit or the division that is proposing the investment.
Country Code	String	Code of the country where the investment shall be made.
Investment Type Code	String	Code of the investment type

Output: Duration Due (Structure data type)

ATTRIBUTE	TYPE	DESCRIPTION
Due Duration Reference	String	Reference date of an event in the workflow to determine the approval task due date. The following value helps are available to choose from – start of approval workflow, start of the approval user task, start of the approval step as configured in the process variant.
Due Duration in Days	Number	The number of days that needs to be added to the reference date to determine the approval task duration. It can also accept decimals, like 0.5

Rule Definition

The due date determination policy is defined as a text rule. You will be able use any property available in the input investment details to determine the due date for the approval steps. You can use the search help (CTRL space -> fixed value -> search help) to choose the *due duration reference*.

Text Rule

▼ If

Investment Details.Total Cost >= 10000 AND Investment Details.Approval Step = 'LocalManager'

Then

Due Duration in Days: 1

Due Duration Reference: 'Task'

> Else If (1)

▼ Else

Due Duration in Days: 2

Due Duration Reference: 'Step'

Manual Approver Policy

Using this policy, you will be able to determine approvers based on provided investment details.

Input and output

Rule Name: Determine Approvers

Input: Investment Details (Structure data type)

ATTRIBUTE	TYPE	DESCRIPTION
Approval Step	String	A unique identification of the approval step, as configured as the input parameter for the approval step in the process variant.
Total Cost	Number	Total cost of the investment.
Business Unit Code	String	Code of business unit or the division that is proposing the investment.
Country Code	String	Code of the country where the investment shall be made.
Investment Type Code	String	Code of the investment type

Result: List of Approvers (Table data type)

ATTRIBUTE	TYPE	DESCRIPTION
User Group	String	The user group in SAP BTP who can approve the task.
User ID	String	User ID in SAP BTP of a single user who can approve the task.
Email	String	Email address of the approver where the notification emails shall be sent.

Is Approval Required	Boolean	A flag to determine if the step can be auto approved. <i>This is a hidden output in this decision, and the value is received from the Auto Approval Policy.</i>
Due Duration Reference	String	Reference date of an event in the workflow to determine the approval task due date. This is a hidden output in this decision, and the value is received from the Determine Due Date Policy.
Task Due Duration in Days	Number	The number of days that needs to be added to the reference date to determine the approval task duration. <i>This is a hidden output in this decision, and the value is received from the Determine Due Date Policy.</i>

Rule Definition

Using this decision, you will be able to determine approvers for each approval step in the capital expenditure approval process. Multiple rules are applied based on the investment details with possibility for more than one matching criteria. Consider the following while defining the rule:

- You can add or remove conditions from the business criteria available under Investment Details.
- The value defined for the condition “*Investment Details.Approval Step*” should match the input as provided in the approval step properties while defining the variant.
- You can either maintain only user id or only user group or both. Based on the configuration the task will be assigned to the appropriate user and/or group.
- If you do not maintain both user id and user group, then irrespective of the auto-approval policy, the approval will be skipped.

Decision Table						
If				Then		
Investment Details.Invest...	Investment Details.Countr...	Investment Details.Busine...	Investment Details.Appro...	User ID	Email	User Group
<input type="text" value="'PLNT'"/>	<input type="text" value="'RU'"/>	<input type="text" value="'PCH'"/>	<input type="text" value="'LocalManager'"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value="'LocalManager'"/>
<input type="text" value="'PLNT'"/>	<input type="text" value="'RU'"/>	<input type="text" value="'PCH'"/>	<input type="text" value="'GroupHead'"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value="'GroupHead'"/>
<input type="text" value="'PLNT'"/>	<input type="text" value="'RU'"/>	<input type="text" value="'PCH'"/>	<input type="text" value="'CFO'"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value="'CFO'"/>

Process Variant Determination Policy

Using this policy, you will be able to determine process variant ID based on provided investment details.

Input and output

Rule Name: Determine Process Variant

Input: Investment Details (Structure data type)

ATTRIBUTE	TYPE	DESCRIPTION
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Approval Step	String	A unique identification of the approval step, as configured as the input parameter for the approval step in the process variant.
Total Cost	Number	Total cost of the investment.
Business Unit Code	String	Code of business unit or the division that is proposing the investment.
Country Code	String	Code of the country where the investment shall be made.
Investment Type Code	String	Code of the investment type

Result: CAPEX Process Variant (Structure data type)

ATTRIBUTE	TYPE	DESCRIPTION
Process Variant ID	String	Process Variant to be used for determination of workflow definition ID <i>Please note that due to current limitations "Process Variant ID" should be equal to "Workflow Definition ID"</i>

Rule Definition

Using this decision, you will be able to determine process variant ID. Multiple rules are applied based on the investment details with possibility for more than one matching criteria. Consider the following while defining the rule:

- You can add or remove conditions from the business criteria available under Investment Details.
- If you do not maintain process variant ID, then the approval process will be skipped.

Decision Table				
If				Then
Investment Details.Investment Type C...	Investment Details.Business Unit Code	Investment Details.Country Code	Investment Details.Total Cost	Process Variant ID
= 'PLNT'	= 'MKT'	= 'DE'	> 100000 AND Investment Details.T...	'capitalex_approval_for_high_valu...
= 'PLNT'	= 'PCH'	= 'DE'	> 100000 AND Investment Details.T...	'capitalex_approval_for_high_valu...
= 'PLNT'	= 'PCH'	= 'RU'	> 100000 AND Investment Details.T...	'capitalex_approval_for_high_valu...
= 'PLNT'	= 'MKT'	= 'RU'	> 100000 AND Investment Details.T...	'capitalex_approval_for_high_valu...
= 'PLNT'	= 'MKT'	= 'RU'	> 10000 AND Investment Details.Tot...	'capitalex_approval_for_high_valu...
= 'PLNT'	= 'PCH'	= 'RU'	<= 10000	'capitalex_approval_for_high_valu...
= 'PLNT'	= 'PCH'	= 'DE'	<= 10000	'capitalex_approval_for_high_valu...
= 'PLNT'	= 'MKT'	= 'DE'	> 10000 AND Investment Details.Tot...	'capitalex_approval_for_high_valu...

Process Administrator Determination Policy

This policy enables determination of process admins based on various statuses of the process.

Input and output

Rule Name: Determine Process Admin

Input: Process Sub Status (Structure data type)

ATTRIBUTE	TYPE	DESCRIPTION
Sub Status	String	The following value helps are available to choose from – Threshold Violation, Overdue, Process Suspended, Process Failed.

Result: Process Admin Details (Table data type)

ATTRIBUTE	TYPE	DESCRIPTION
Email	String	Email address of the process admin where the notification emails shall be sent.
First Name	String	First name of the process admin.
Last Name	String	Last name of the process admin.

Rule Definition

The process administrator determination policy is defined as a decision table. It enables you to determine process administrators responsible for handling a given status of the capital expenditure approval process workflow. You can use the search help (CTRL space -> fixed value -> search help) to choose the *sub status*.

Decision Table			
If	Then		
Process Sub Status.Sub Status	First Name	Last Name	Email
= 'OVERDUE'			
= 'PROCESS_FAILED'			
= 'PROCESS_SUSPENDED'			
= 'THRESHOLD_VIOLATION'			

Process Visibility

Process visibility enable Process Owners and Process Operators to gain real time visibility on processes and key process performance indicators. Process visibility capability in SAP Workflow Management enables customers gain out of the box process visibility into their deployed processes. Please refer [help documentation](#) for more details.

Capital Expenditure Approval

Capital Expenditure Approval Process content package provide out of the box visibility on all the deployed process variants in SAP Workflow Management. A process owner or line of business expert will be able to enhance the visibility scenario.

Configure Visibility Scenarios

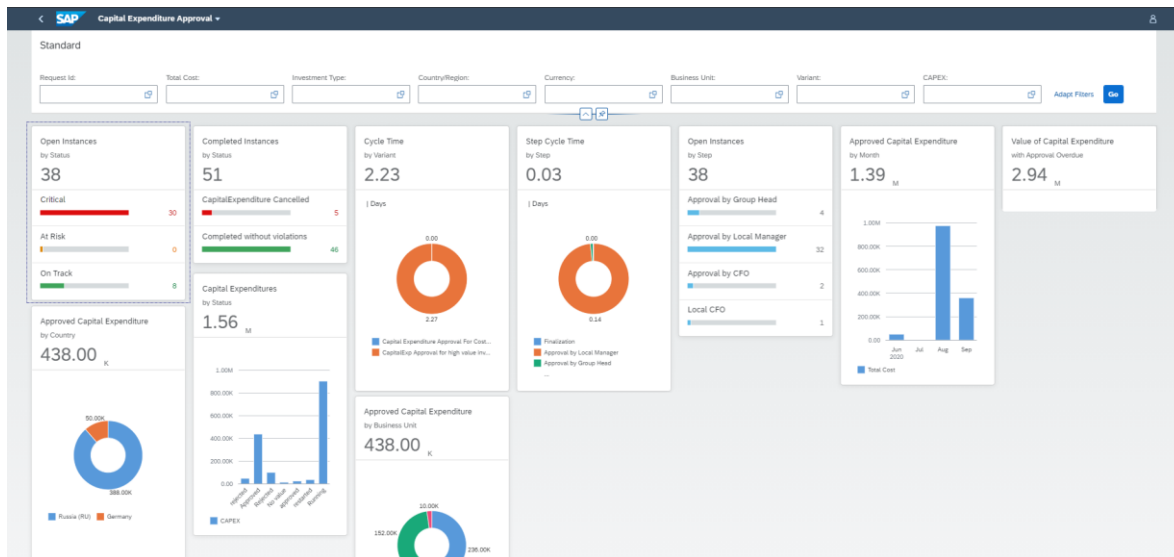
1. Go to Process Flexibility Cockpit
2. Select SAP Capital Expenditure Approval Process
3. Click Visibility Scenarios and Select Capital Expenditure Approval

Please go through [help documentation](#) how to model a visibility scenario.

Access Process Workspace

1. Go to Process Flexibility Cockpit
2. Select SAP Capital Expenditure Approval Process
3. Click Live Process Insights Capital Expenditure Approval

Please go through [help documentation](#) how to access process workspace.



Insight to Actions

Restarting Approval Process

A business user can restart an existing request in critical or failed status. The business user will be triggering new request, it will cancel the existing request and create new request. The business user requires Workflow Initiator and Workflow Admin role.

Type: User Triggered

The steps to restart approval process:

1. Go to Process Flexibility Cockpit
2. Select SAP Capital Expenditure Approval Process
3. Click Live Process Insights Capital Expenditure Approval
4. Select open instances with a "Critical" status
5. Select the instance you want to restart
6. Click on "Restart Approval" in a right bottom corner.

SAP Capital Expenditure Approval Request

State: **Open** Cycle Time: **20 Days 21 Hrs 59 Min** Start Date: **Sep 11, 2020, 5:00:07 PM**
 Status: **Critical** Target Cycle Time: **10 Days** End Date: **—**
 Sub-Status: **Process Failed** Target Date: **Sep 21, 2020, 5:00:07 PM**

Information Path Action Logs

Request Id: 1597954187
 Total Cost: 120000.0
 Investment Type: Plant (PLNT)
 Country/Region: Russia (RU)
 Currency: EURO (EUR)
 Business Unit: Purchasing (PCH)
 Variant: CapitalExp Approval for high value investment
 CAPEX: 12000.0
 OPEX: 1200.0
 ROI: 0.0 %
 IRR: 0.0 %
 Energy Efficiency: 0.0 %
 CO2 Efficiency: 0.0 %
 Energy Cost Savings: 0.0 %
 Water Savings: 0.0 %

[Restart Approval](#)

Notifying Process Admin

Type: System Triggered

Depending on the sub-status (Overdue, Process Failed, Process Suspended, Threshold Violation) of the workflow, system automatically triggers an action to send an email notification to the relevant process administrators determined using Process Admin Determination Policy.