

# White Paper

## Configuration of Workflow Escalations

Fabasoft Folio 2019

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## 1 Introduction

This document describes how escalations can be defined and users are informed prior to expiration of activities. By default, names of activities whose deadline for beginning or completion has expired are shown in italics. For missed deadlines an escalation can be configured. In this way for example a message is sent to one or multiple users to inform them about expiration of the deadline.

## 2 Software Requirements

**System environment:** All information contained in this document implicitly assumes a Microsoft Windows environment.

**Supported platforms:** For detailed information on supported operating systems and software see the software product information on the Fabasoft distribution media.

## 3 Prerequisites

In the Fabasoft Folio Domain the software product *Fabasoft Folio/Wf* (`ComponentWf@1.1`) has to be installed so that workflow escalations can be defined.

Escalations are triggered automatically. For this the installation and configuration of a Fabasoft Folio AT Service is required and the software product *Fabasoft Folio/AT* (`ComponentAT@1.1`) has to be installed in the Fabasoft Folio Domain. The installation and configuration of the Fabasoft Folio AT Service is not part of this document. However, it describes some key points concerning the execution of automated tasks.

## 4 Settings for Running Tasks using a Fabasoft Folio AT Service

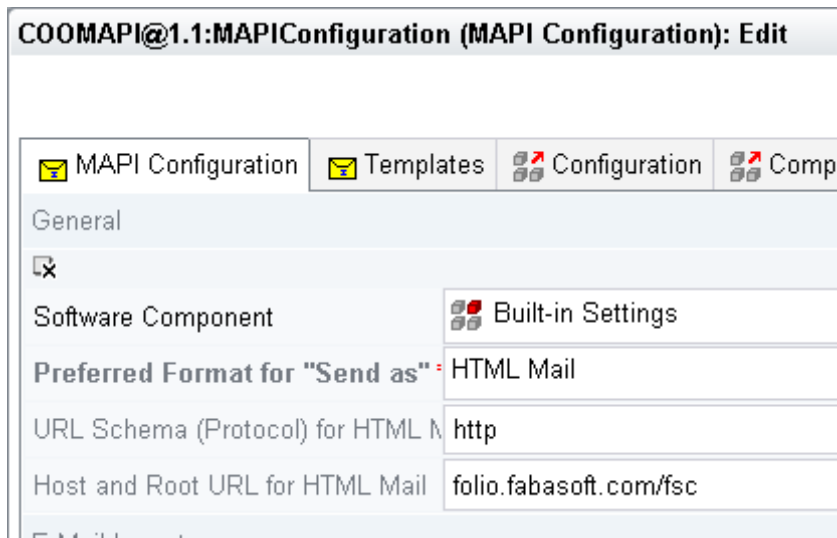
Escalations are triggered automatically using a Fabasoft Folio AT Service. For this purpose a task list and an automated task have to be created (see chapter 5 "Creating Automated Tasks").

For executing automated tasks the user in whose context the Fabasoft Folio AT Service is running has to be registered in the Fabasoft Folio Domain.

In case of an escalation, users can be notified in different ways, e.g. event in Fabasoft Folio, message of the Microsoft Windows Messenger Service or e-mail.

Sending e-mails is done via MAPI or SMTP, whereby via SMTP only HTML and plain text can be sent, RTF is not supported. For sending escalation e-mails, the following settings are required in the Fabasoft Folio Domain in the *MAPI Configuration* (`COOMAPI@1.1:MAPIConfiguration`):

- *Preferred Format for "Send as"*  
e.g. "HTML Mail"
- *URL Schema (Protocol) for HTML Mail*  
e.g. "http"
- *Host and Root URL for HTML Mail*  
Specification of the format: <web server>/<virtual directory>).



**Note:** Using tenants, the *MAPI Configuration* is taken from the tenant of the user, in whose context the Fabasoft Folio AT Service is running, The type of link, that is inserted into the e-mail, is determined in the property *Preferred Format for "Send as"*.

Additionally, the user in whose context the Fabasoft Folio AT service is running needs a MAPI profile.

## 5 Creating Automated Tasks

To execute tasks automatically by the Fabasoft Folio AT Service and so be able to send escalation messages, an *Automated Task* has to be created and assigned to the *Task List* (object of the object class *Task List*) of the user executing the Fabasoft Folio AT Service.

To assign a *Task List* to a user, perform the following steps:

1. In the *Domain Administration* navigate to the object list *User Objects* and switch to the "List of Automated Tasks" tab.
2. Depending on whether the Fabasoft Folio AT Service has already been started, there are two possibilities:
  - If the Fabasoft Folio AT Service has already been started, a task list (object of the object class *Task List*) has been created automatically. On the "View" menu click "Refresh" to get all available task lists.
  - If the Fabasoft Folio AT Service has not been started yet, manually create a *Task List* (COOAT@1.1001:TaskList).
3. Edit the properties of the task list.
  - On the "Object" tab the *Name* can be edited.
  - On the "Security" tab, select as *Owner* the user in whose context the task list should be executed (the user executing the Fabasoft Folio AT Service). Thereby the user gets the right

to change the task list and so to be able to add tasks to the task list.

The screenshot shows the 'Expired Activities (List of Automated Tasks): Edit' dialog box. The 'List of Automated Tasks' tab is selected. The 'Owner' field is highlighted in yellow and contains the text 'Fabasoft, AT Service'. Other fields visible include 'Security Level', 'Access Definition', 'ACL Object' (with a key icon and text 'ACL for "List of Automated Tasks" Object'), and 'Referenced Object'. The 'Final Form' section is also visible at the top.

- On the "List of Automated Tasks" tab, *Automated Tasks* (COOAT@1.1001:Task) can be entered in the *Tasks* area. An object of this object class defines a task to be executed by a Fabasoft Folio AT Service. A task specifies what action is executed on which object and when it is executed.

Click "Create" to create an *Automated Task*.

The screenshot shows the 'Expired Activities (List of Automated Tasks): Edit' dialog box with the 'Tasks' section highlighted in yellow. Below the 'Tasks' header, there are several toolbars and a search bar. The 'Name', 'Start on/at', and 'State' fields are visible. The search bar contains the text 'No Entries'. There are also icons for 'Object', 'Clipboard', 'View', 'Tools', and 'Settings'.

- Type a name for the task and click "Next".
- Now edit the properties of the *Automated Task*.
  - In the *Start on/at* field enter a date for the beginning.
  - In the dropdown list *Object* create an object of the object class *List of Background Activities* (COOWF@1.1:BackgroundActivities). Type a name for the created object and click "Next".
  - In the *Action* field, find the action "Check expired activities in background" (COOWF@1.1:CheckExpiredActivities) to search for expired activities in the background. The search for expired activities uses the search area *Query for Worklist* (COOWF@1.1:WorkListQuery). As search criteria the properties *Activity State* (COOWF@1.1:actinststate),

*Period of Time for Submission* (COOWF@1.1:actinstsubmitdeadline),  
*Period of Time for Start* (COOWF@1.1:actinststartdeadline) and  
*Period of Time for Completion* (COOWF@1.1:actinstenddeadline) are used.

- Tasks for checking the escalation of activities are triggered periodically. Enter a value for *Repetition* and a *Repetition Type* (e.g. "Minutes After Ending").  
**Note:** An escalation is triggered by an automated task. If in the automated task a longer period is defined for repeating the task than in the *Escalation Definition* for repeating the escalation, the escalation is triggered when the automated task is executed.
- Additionally can be determined which information should be logged (*Configuration for History*) and how many entries are displayed in the *History* field (*Maximum Number of History Entries*).

**Check expired activities (Automated Task): Edit**

Buttons: [Refresh] [Users] [Print] [Help] [Cancel] [Apply] [Next]

Tabs: Versions | Security | Audit Log | Digital Signature | Workflow | Additional Properties

Sub-tabs: Automated Task | Processes | Signatures | Basic Object (Advanced) | Object

State \*

Start on/at

Object

Action

Resource

Repetition

Repetition Type

Restrict to Weekdays

Automatic Delete

Configuration for History

Maximum Number of History Entries

History

Buttons: [Add] [Copy] [Paste] [Delete]

Fields: Should Start on/at, Start on/at, End on/at, Error, Error Message

- Switch to the "Security" tab. In the *Owner* field select the user to which the task should be assigned (the user executing the Fabasoft Folio AT Service).

- Click "Next" to save the settings for the automated task. Now the task is in the *Tasks* area of the *Task List* object.

**Expired Activities (List of Automated Tasks): Edit**

Buttons: Cancel, Apply, Next

Tabs: Versions, Security, Digital Signature, Workflow, Additional Properties

Sub-tabs: List of Automated Tasks, Signatures, Object With Object List (Advanced), Object

**Tasks**

Object: One Entry

Name	Start on/at	State
Check expired activities	01.11.2011 08:00:00	Activated

Configuration fields:

- Maximum Number of Threads: 4
- Maximum Run Time (Min.):
- Wait for Lock (Sec.): 10
- Restart After (Minutes): 60

**Resources**

No Entries

Resource settings: Resource, Maximum Run Time (Min.), Maximum Number of Threads, Restart

- Click "Next" to save the metadata settings of the *List of Automated Tasks*.

To assign the list of automated tasks to the user object of the user executing the Fabasoft Folio AT Services, perform the following steps:

- In the *Domain Administration* navigate to the object list *User Objects* and switch to the "Users" tab.
- Open the context menu of the user to which the list of automated tasks should be assigned and click "Properties".
- On the "Advanced" tab, in the *List of Automated Tasks* field search for the *List of Automated Tasks* you have been creating in the previous description.
- Click "Next" to save the user settings.

**Note:** After the first start of the Fabasoft Folio AT Service, the task "Check list of background activities" is added to the *List of Automated Tasks* automatically. It is created automatically and checks whether workflow activities are available that should be executed in the background.



## 6 Defining an Escalation

An escalation can be used to inform a user when deadlines of activities are nearly or already expired. Workflow escalations are defined in objects of the object class *Escalation Definition* (COOWF@1.1:EscalationDefinition).

To create an *Escalation Definition*, perform the following steps:

1. Switch to a *Administration Tool*.
2. Create an *Escalation Definition* ("Object" > "New").
3. On the context menu of the *Escalation Definition* click "Properties".
4. Edit the metadata of the *Escalation Definition*. The following escalation settings are available:

- *Escalation, if Date for Submit Is Expired*
- *Escalation, if Deadline for Start Is Expired*
- *Escalation, if Deadline for Completion is Expired*

Each of these fields contains the following fields:

- *Escalation Type*

In this dropdown list is determined, whether the escalation is done before or after expiry of the deadline.

Selecting "Before Expiry of Deadline" the escalation is triggered before the deadline expires, but earliest one week before expiry. To get the concrete time for escalation, the deadline is deducted by the specified *Period of Time*.

Selecting "After Expiry of Deadline" the escalation is triggered after expiry of the deadline. If a *Period of Time* is specified, in this case this period is added to the deadline to get the concrete escalation time.

- *Recipients of Escalation Message*

In this object list for the escalation message one or more recipients can be determined. The recipients are defined in a component object of the object class *Recipient of Escalation Message* (COOWF@1.1:EscalationRecipient).

All entries in the *Recipients in Fabasoft Folio* field are dissolved and handled separately. There is no check for double entries.

If a recipient cannot be dissolved or a message cannot be delivered the escalation is not canceled. If the number of successful messages is higher than the number of errors the activity is considered as successfully escalated. The errors are logged in the Fabasoft Folio AT Service.

- *Message Text*

In this field type the message text that should be used for escalation.

- *Action to Call*

In is possible to select an action that is executed on the activity after expiry of the deadline before sending the escalation message.

- *For Workflow Priority*

In this dropdown list a priority can be selected. In this case, only activities having this priority are escalated.

- *Period of Time*

Depending on the *Escalation Type*, the deadline is deducted by the specified period (escalation before expiry) or the period is added to the deadline (escalation after expiry).

- *Repeat Every*  
This field can be used to determine a time interval for repeated execution of the escalation.  
**Note:** An escalation is triggered by an automated task. If in the automated task a longer period is defined for repeating the task than in the *Escalation Definition* for repeating the escalation, the escalation is triggered when the automated task is executed.

If there is no suitable *Recipient of Escalation Message* is available, a new one can be created. Therefore in the *Recipients of Escalation Message* field perform the following steps:

1. Click "New".
2. Type a name for the recipients and click "Next".
3. On the context menu click "Properties".
4. Edit the metadata of the *Recipient of Escalation Message* and click "Next".

On the "Recipient of Escalation Message" the following properties are available:

- *Multilingual Name*  
In this field a name can be defined for the object.
- *Types of Escalation*  
In this dropdown list select the way in which the message is received.
  - "Fabasoft Folio Event"  
In this case the escalation message is displayed as Fabasoft Folio Event for the users specified in the *Recipient in Fabasoft Folio* field.  
**Note:** For this escalation type the user executing the Fabasoft Folio AT Service needs change permissions on the *User Events* object of the user receiving the escalation message.
  - "NT Messenger Service Message"  
In this case the escalation message is sent via Microsoft Windows Messenger Service to the recipient specified in the *NT message to* field. If this field is left empty, the login name of the user specified in the *Recipient in Fabasoft Folio* field is used.
  - "E-Mail"  
In this case the escalation message is sent via e-mail whereas the escalated activity is inserted as a link. The e-mail is sent to the recipient defined in the *E-Mail to* field. If this field is left empty, the e-mail address of the user specified in the *Recipient in Fabasoft Folio* field is used. The e-mail is sent by the action `COOMAPI@1.1:SendObjects` (for further information see chapter 4 "Settings for Running Tasks using a Fabasoft Folio AT Service").
- *Recipient in Fabasoft Folio*  
In this field specify a user of the Fabasoft Folio Domain as recipient for the escalation. The specified user is informed:
  - using the escalation type "Fabasoft Folio Event".
  - using the escalation type "NT Messenger Service Message", if the *NT Message to* field is left empty.
  - using the escalation type "E-Mail", if the *E-Mail to* field is left empty.
  - **Note:** For further information to this field see chapter 6.1 "Evaluation of the Recipient in Fabasoft Folio".
- *NT Message to*  
Using the escalation type "NT Messenger Service Message" a Microsoft Windows Messenger Service contact name can be specified.

- *E-Mail to*

Using the escalation type "E-Mail", an e-mail address can be specified in this field.

The objects *Escalation Definition* and *Recipient of an Escalation Message* are component objects, so on the "Component Object" tab a *Reference* and a *Software Component* have to be entered.

## 6.1 Evaluation of the Recipient in Fabasoft Folio

In the escalation definition in the *Recipient in Fabasoft Folio* field the recipients of the escalation message are defined. The definition can be done using abstract participants or concrete users. The following possibilities are available:

- *Abstract Participant*

In this dropdown list an abstract participant can be selected:

- Process Initiator

Process initiator is the person who initiated the process of the activity.

- Responsible for Process

For each process a responsible is defined. By default the process initiator is responsible for the process.

- Process Owner

The process owner is the owner of the process instance.

- Process Group

The process group is the group to which the process instance belongs. If no further restrictions (e.g. a position) are defined, all users of this group are informed about the escalation.

- Object Owner

The object owner is the user who is owner of the object on which the process has been initiated.

- Object Group

The object group is the group to which the object belongs on which the process has been initiated. . If no further restrictions (e.g. a position) are defined, all users of this group are informed about the escalation.

- Current User

The current user is the user the activity is assigned to.

- According to the organizational structure further options are available.

- *User*

In this field a concrete user can be selected by performing a search or using the hierarchical structure.

- *Group*

In this field a concrete group can be selected by performing a search or using the hierarchical structure. If no further restrictions (e.g. a position) are defined, all users of this group are informed about the escalation.

- *Position*

In this field a position can be selected. If no further restrictions (e.g. a group) are defined, all users having this position are informed about the escalation.

- *Organizational Unit*

In this field an organizational unit can be selected.

If no concrete user is defined, the selected values are used to get a list of users receiving the event. So the event is sent e.g. to all users of a group or all users of a certain position. If several values are selected, all of them have to be true for a user to be a recipient.

If the evaluation determines a user several times, he or she receives the event several times.

If a recipient cannot be dissolved or a message cannot be delivered the escalation is not canceled. If the number of successful messages is higher than the number of errors the activity is considered as successfully escalated. The errors are logged in the Fabasoft Folio AT Service.

## 7 Triggering an Escalation

To trigger an escalation an *Escalation Definition* has to be defined for example when prescribing or editing an activity. An *Escalation Definition* can also be predefined in an *Activity Definition* or for all activities of a process in a *Process Definition*.

Deadlines for the escalation can be defined in *Activity Definitions*, in *Activities* or when prescribing an activity.

### 7.1 Activity Definition

The following properties are available in an *Activity Definition* on the “When” tab:

**Signing (Activity Definition): Edit**

Usability | References | Explanation Texts | Assertion Expression | Component Object

Object | Versions | Security | Signatures

Activity Definition | Who | What | **When** | Prescriptions | Type of Join

Ignore Completion  Undefined

Period of Time for Submission: [ ] d [ ] h [ ] min [ ] sec

Period of Time for Start: [ ] d [ ] h [ ] min [ ] sec

Period of Time for Completion: [ ] d [ ] h [ ] min [ ] sec

Working Days Until Submission: [ ]

Working Days Until Start: [ ]

Working Days Until Completion: [ ]

Expressions to Compute Deadlines

Deadline Property	Expression to Compute Deadline Base
Escalation	

- *Period of Time for Submission*  
In this field a period of time can be defined within that the activity should be submitted.
- *Period of Time for Start*  
In this field a period of time can be defined within that the activity should be started. The calculation starts when the user receives the activity in the worklist.
- *Period of Time for Completion*  
In this field a period of time can be defined within that the activity should be completed. The calculation starts when the user receives the activity in the worklist.

- *Working Days Until Submission*  
In this field a number of working days can be defined within that the activity should be submitted.  
**Note:** For evaluating working days when calculating deadlines in the current domain a *Holiday Table* has to be defined.
- *Working Days Until Start*  
In this field a number of working days can be defined within that the activity should be started. The calculation starts when the user receives the activity in the worklist.
- *Working Days Until Completion*  
In this field a number of working days can be defined within that the activity should be completed. The calculation starts when the user receives the activity in the worklist.
- *Expressions to Compute Deadlines*  
In addition to defining periods and working days, deadlines also can be calculated using Fabasoft DUCX Expressions. Therefore the *Expressions to Compute Deadlines* field is available. For the evaluation of the expression the current activity is in the global scope.
- *Escalation*  
In this field an *Escalation Definition* can be selected or created.

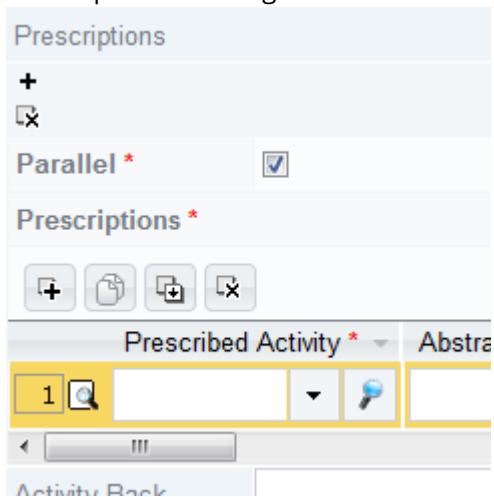
The values of the *Activity Definition* are used when creating an activity.

## 7.2 Performing Prescriptions

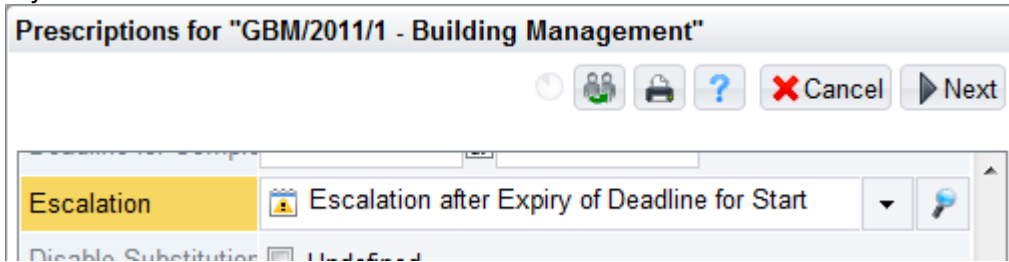
Deadlines for the escalation and an *Escalation Definition* can be defined during the prescription an activity.

To configure an escalation in the scope of prescribing an activity, perform the following steps:

1. Select a business object.
2. On the "Tools" menu click "Start new Activities" and click the button "Advanced View".
3. Click "Open Detail" to get the detail view of an aggregate line.



4. Edit the fields of the prescription as needed. In the *Escalation* field select an *Escalation Definition*.



5. Click "Next" to close all dialog windows and save the settings. The prescription is performed automatically.

If in the scope of the prescription the fields *Period of Time for Submission*, *Period of Time for Start*, *Period of Time for Completion* and *Escalation* are left empty, the values are taken from the *Activity Definition*.

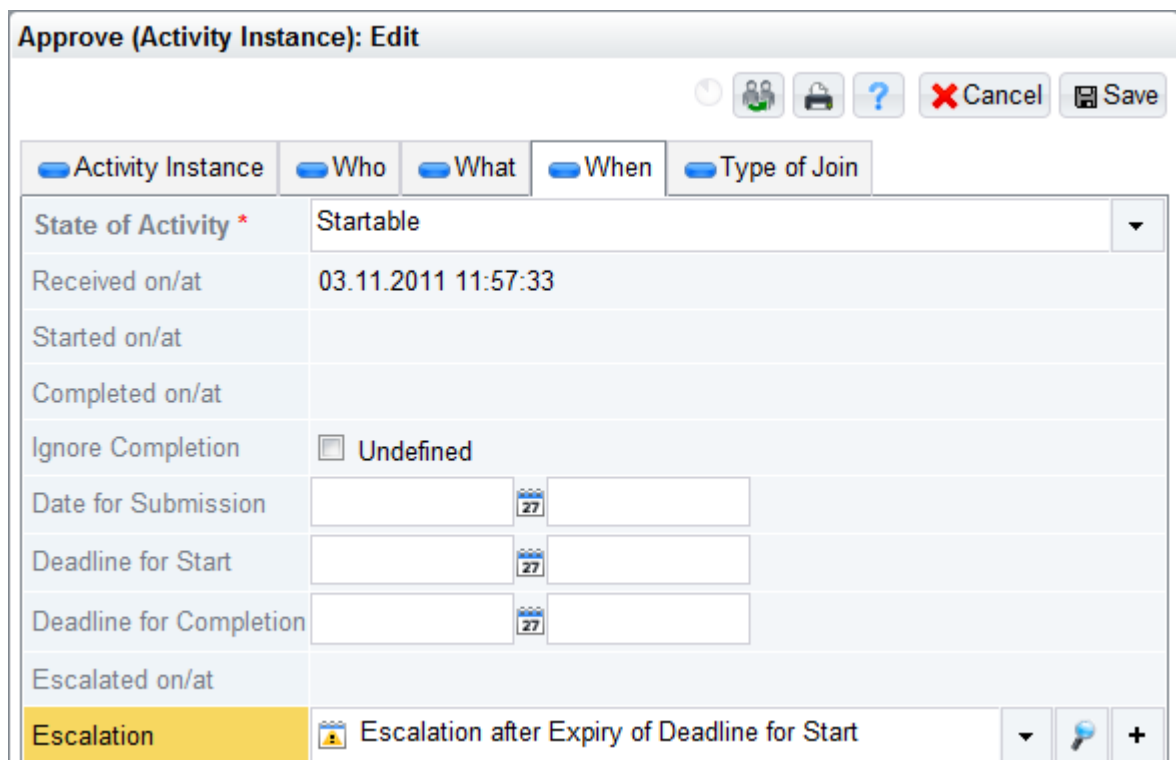
**Note:**

- Only values that are not defined in a prescription are taken from the *Activity Definition*.
- If in the *User Environment* of a user the option *Use Working Days for Deadlines* is set to "Yes" ("Workflow" tab) deadlines can be defined using working days.

### 7.3 Activity

The *Escalation Definition* and periods for submission, start and completion can be read, defined and changed directly in the activity.

For this purpose the following fields are available on the "When" tab of an activity:



- *Date for Submission*  
In this field a date for submission can be defined, if the activity has yet not been submitted.

- *Deadline for Start*  
In this field a date for starting the activity can be defined.
- *Deadline for Completion*  
In this field a date for completing the activity can be defined.
- *Escalated on/at*  
In this field the date of the last escalation gets noted.
- *Escalation*  
In this drop-down list an escalation definition can be selected.