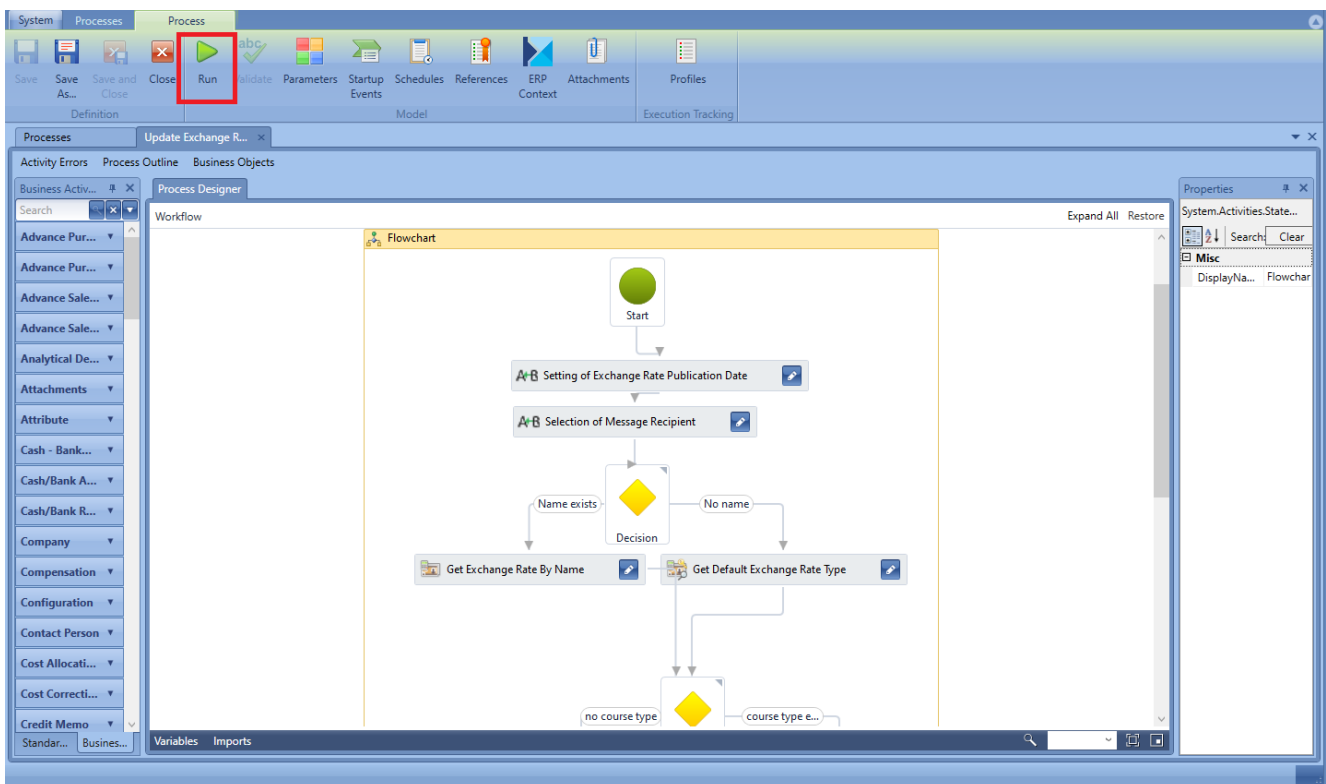# Process simulator

Process editor allows for verifying process execution with the use of a built-in simulator. Functioning of a process can be verified for different process configurations without the necessity of starting the BPM service.
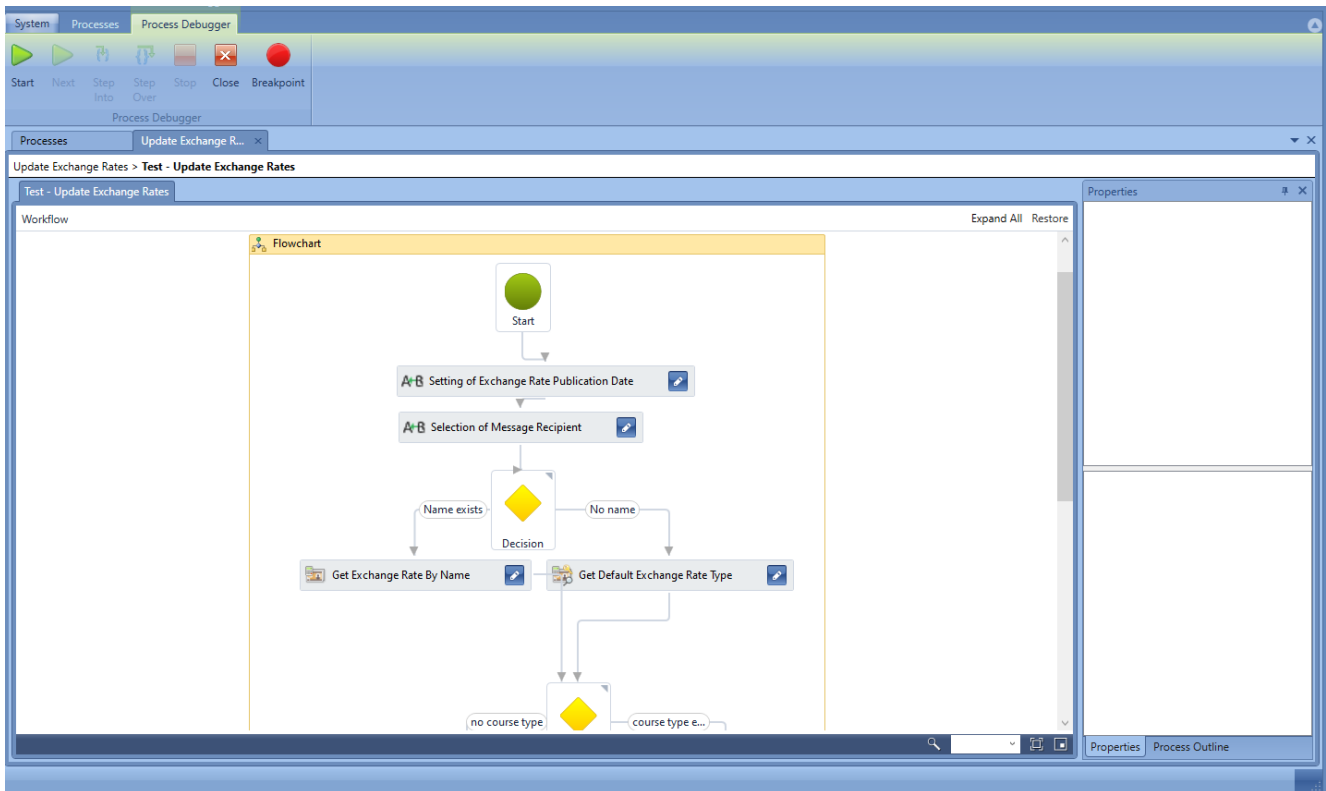
Note
The process simulator works on company database to which the BPM process designer is logged-in. All changes applied by a process started in the simulator will be saved in the database.
To open the process simulator window, select button [**Run**], available from the level of the process modification window

Starting process simulator

In the process simulator window, a preview of analysed process is available.

Process simulator window

Simulation will be started upon clicking on [**Run**] button and specifying [tracking profile](#).

Note
When using the process simulator, it is necessary to define default [startup parametrs](#), because it is not possible to enter them in a process in the same way as it happens when starting a process from the level of the [Task Inbox](#).
Buttons [**Next**], [**Step Into**] and [**Step Ober**] are active after the user selects his/her own breakpoints. A breakpoint can be set by clicking on a given activity and selecting [**Breakpoint**] button. A red dot will appear next to the selected activity. Now, during the elaboration, the process will stop after reaching that point. To resume the activity, user's action is necessary.
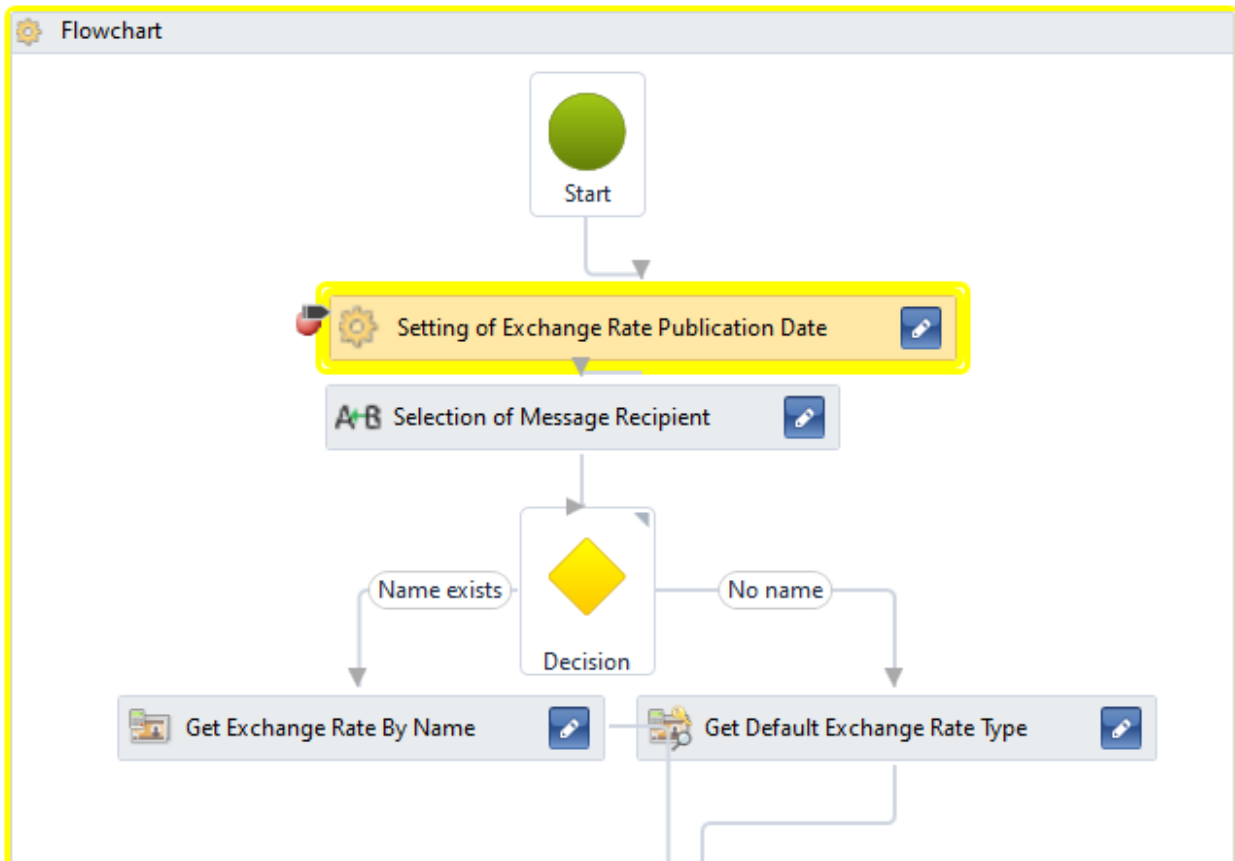
Activity with added breakpoint

During the simulation, activities have borders in three colors:

- Yellow — the activity is just being executed
- Green — the activity has been executed successfully
- Red — an error occurred during activity execution

Execution tracing and properties view are the same as in the case of process monitoring.

Parameters

Parameter is a variable being a part of a process. To open a list of parameters, it is necessary to click on [**Parameters**] button, available in *Model* group of buttons.
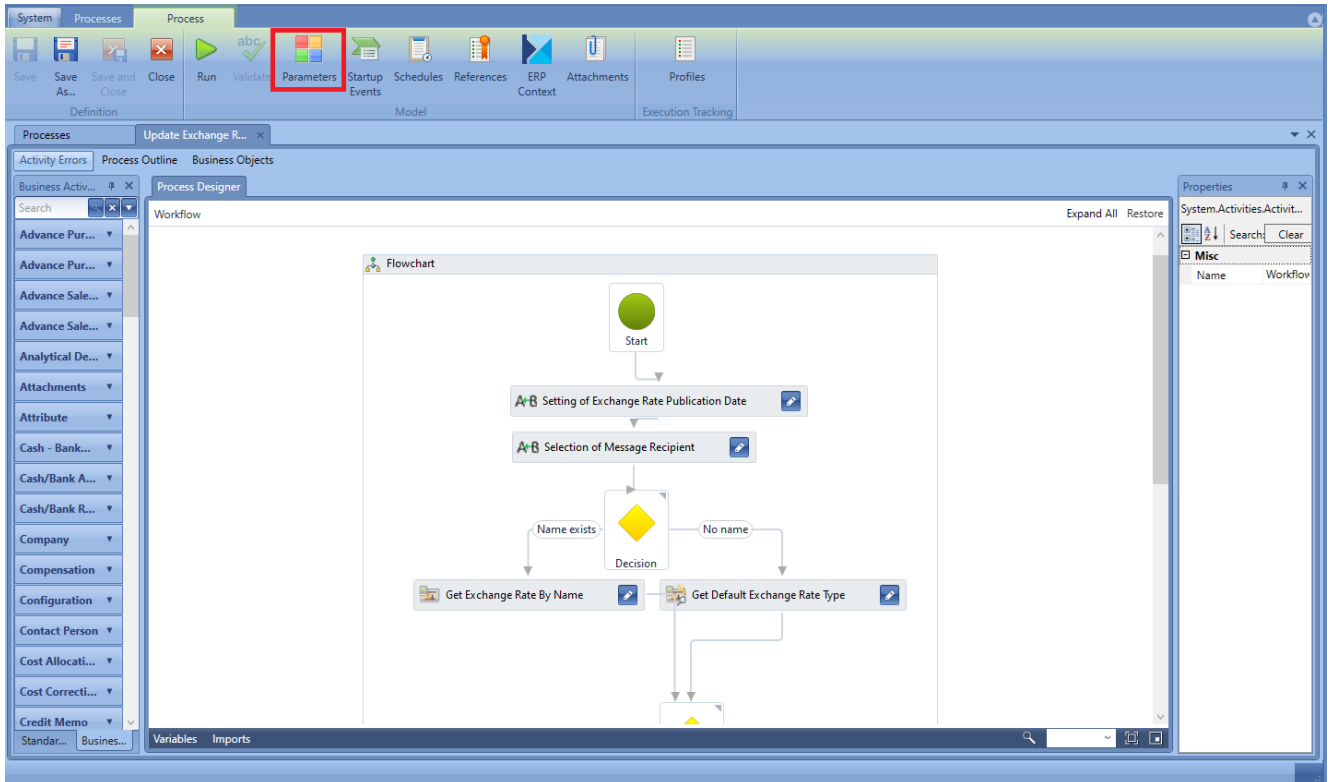
Opening the list of parameters

A list containing all parameters defined within a user's process, as well as default system parameters, is opened.

List of process parameters

Each process has three default parameters:

- **WorkflowInitiator** – process initiator
    - **UserName** – name of the operator who has started the process manually or name of the operator for BPM service in the case of an automatic process startup
    - **WorkflowUserId** – operator's ID
- **Context** – context in which the process is being executed
    - **Instance** – information about the process instance, its definition and type
    - **Session** – information about process session, center and company for which the process was started. This parameter can be used, for example, to retrieve a current center by its ID.
    - **StartMode** – information about the method in which the process was started
- **WorkflowCreationTime**– time of process initiation

To add a parameter, it is necessary to select [**Add**] button and select variable type and parameter's textual type (*Parameter*

column).

Hint
Variable type can be chosen from a drop-down list containing types available in the whole system. Recently used variable types are available on the list on the next selection. Additionally, it is possible to set the following options:

- **Name** – name presented for the user during the manual process startup
- **Description**
- **Default Value**– value assumed by a parameter if it is not specified by the user when starting a process
- **Startup** – if the option is checked, a parameter can be transferred from outside during a process startup. If the option is unchecked, also *Value Required* option is automatically unchecked.
- **Value Required** – after checking the option, a parameter is presented on the list during the manual process startup in the Comarch ERP Standard system and its value ca be set or changed. If the user does not select that option and the option *Startup* is checked, it is necessary to enter the default value.

Example
To transfer a file to a process, a new parameter named *File,* of *FileDataType* type, is added. The fields *Startup* and *Value Required* remain unchecked.

WorkflowInitiator	Process Initiator	Name of the operator whose actio...		Comarch.Workflow.Library.WorkflowUser	☑	☑
WorkflowCreationTime	Process Start Time	The exact date and hour of receive...		System.DateTime	☑	☑
UserName	User Name (operator name)	Name of the user to be informed a...		String	☑	☑
Context	Context of Process Instance Executi...	Information on the context in whic...		Comarch.Workflow.Library.Arguments.InstanceE	☑	☑
File				Comarch.Workflow.Library.FileDataType	☑	☑

Example of a prameter of File type

When starting a process for the *File parameter,* it is possible to select a file which will be transferred to the process. The path to the indicated file will be entered to the parameter.
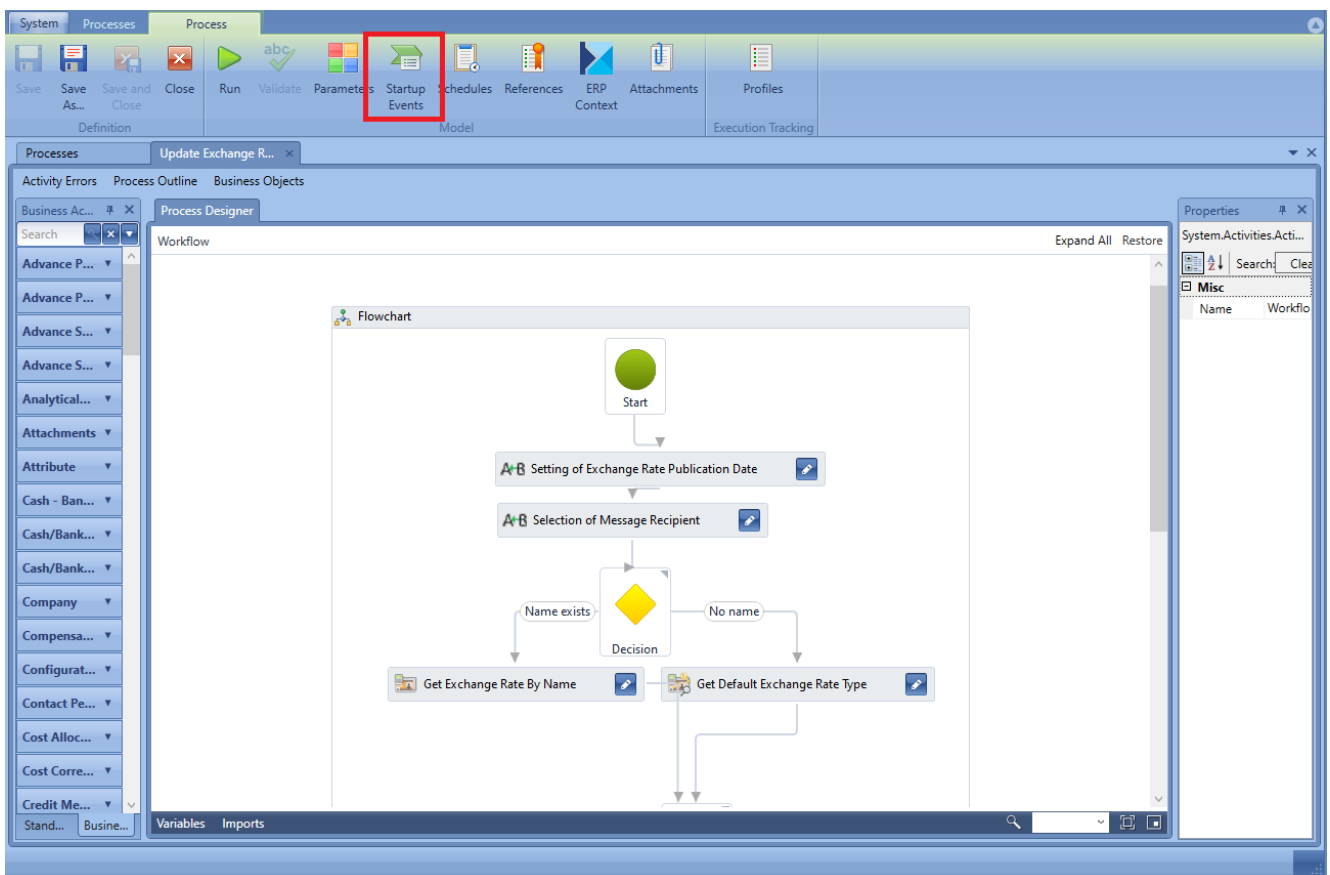
Sartup events

Startup events enable automating starting of a process before or after execution of a specific operation in the Comarch ERP Standard system.

Example
It is possible to define a process that will automatically compete item's attribute after it is saved.
Startup events differ depending on process type (local or global). They can be selected when adding a new process or when editing a process, by selecting [**Startup Events**] button, available in *Model* group of buttons.

Opening window for selecting startup events

A list of startup events grouped by names of objects available

in the system is opened.
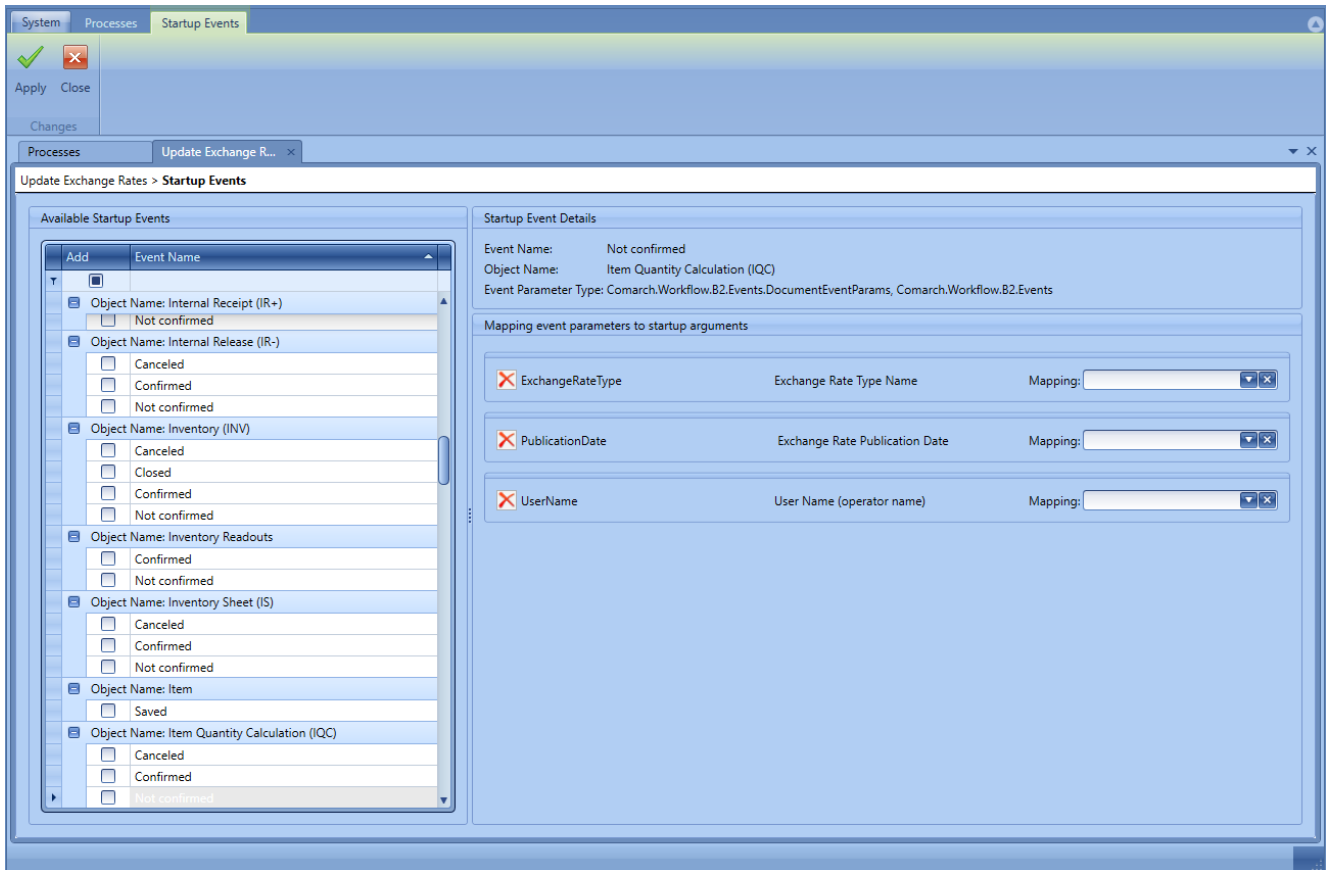
Startup events selection window

On the left side of the window, it is possible to select those startup events, which will trigger a process. Along with an event, parameters can be sent to a process. They can be selected from the drop-down list of a given startup event. These values can be connected with parameters by means of mapping. Mapping section is located on the right side of the section containing startup event details.

Selecting event parameter

Hint
One of the most common arguments of startup events is

DocumentEventParams. It is available for all events regarding documents. It contains the following information:

- **CurrentStateType**— current document status
- **DocumentId**— document ID
- **DocumentTypeNamespace** — parameter identifying document type
- **PreviousStateType** — previous document status

This parameter is generated for events of global processes only.

Note
Processes *Copy Attribute From Customer Form To Sales Complaint (SCL)* and *Display Message About Customer Submitting Complaint (SCL)* use the same startup event. It is necessary to ensure that the last modification is executed for the second process. Otherwise, data returned by both processes might be incorrect.
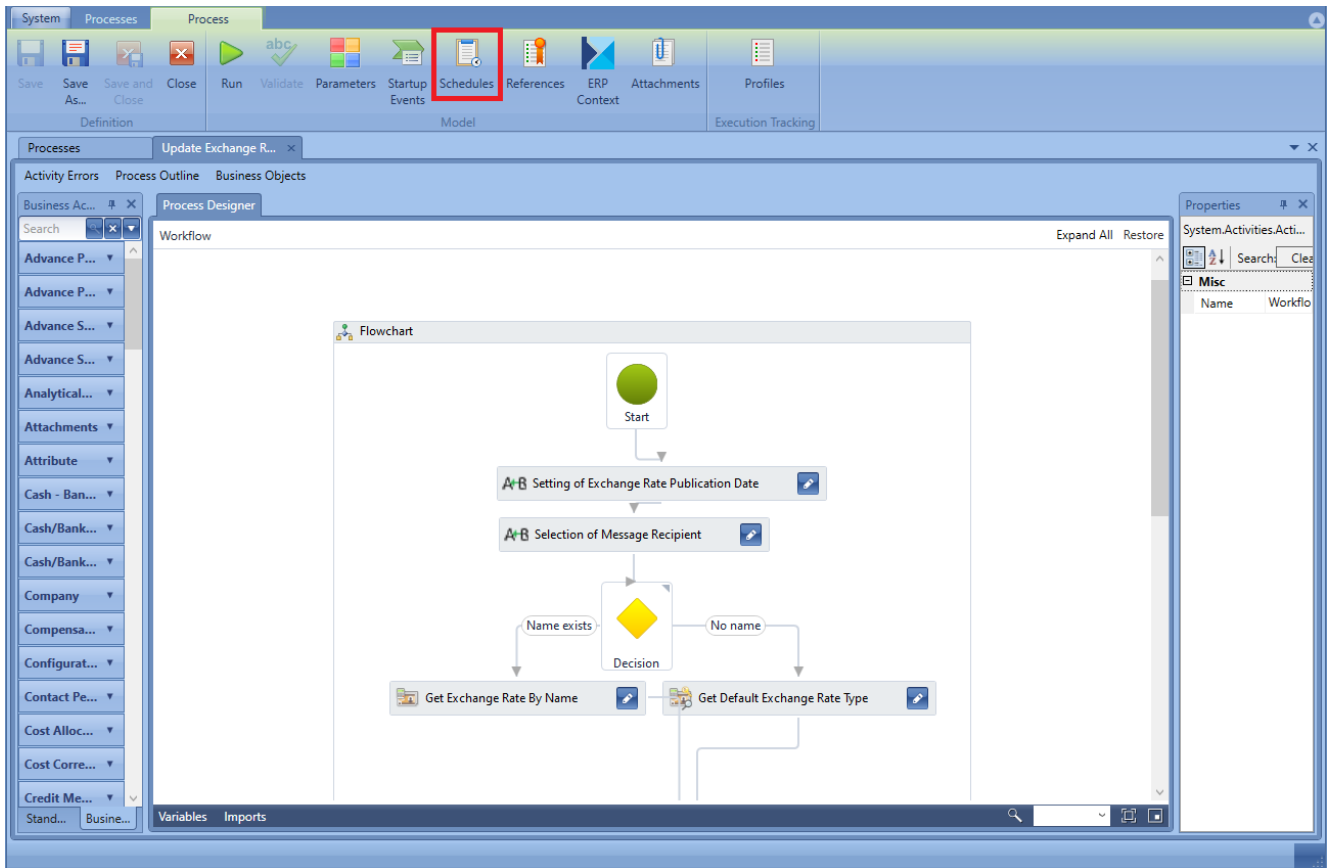

Schedules

Besides manual and automatic triggering of processes on an event, the system allows for starting processes according to defined schedules.

Note
Schedules are available for global processes only.
To add a schedule to a process, it is necessary to select [**Schedules**] button, available in *Model* group of buttons.

Opening window of process schedules

In case there are no defined schedules for a process, the system asks whether the user wants to create a new schedule. After answering *Yes* a window for defining a schedule with a list of schedules is opened, where it is possible to add new schedules and delete existing ones by means of [**Add**] and [**Delete**] buttons. On the left side of the view, details regarding schedule currently marked on the list, are displayed.
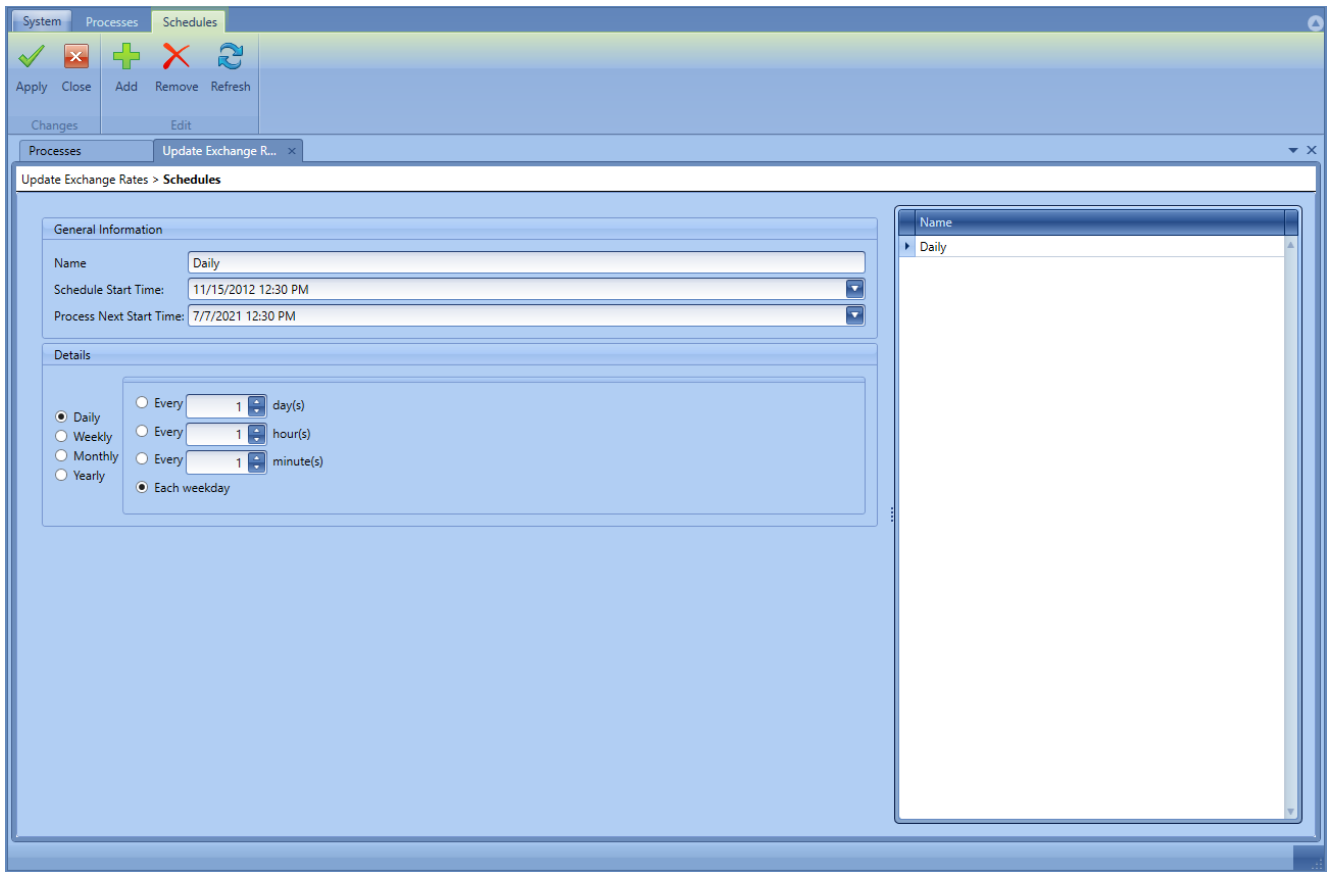
Window for defining schedules

A schedule can be defined as daily, weekly, monthly or yearly.

Example
To allow a process to start automatically each last Saturday of a month, it is necessary to:

- Select *Monthly* schedule type
- Select option *On the following day*
- Select day — from drop-down lists it is necessary to select options *last* and *Saturday*
- Define period of schedule validity — in this case, it is necessary to select option *every 1 mth,* because the process is supposed to be started every month.

Schedule example

Note
In case the BPM server is deactivated, processes are not executed, but they are queued. It means that they will be executed after the server is started. In the case of processes with schedules, when the server is started, in a queue there can be only one instance of such process. Subsequent startups of that process are not queued.

References

References refer to .dll assemblies which extend standard system functioning, e.g., by adding author activities. To use a given reference in a process, it is necessary to add it to the system. It is done by selecting button [**Import**] from *References* group of buttons which is available from the level of the process assembly and next, by selecting appropriate files from the disc. It is also possible to export references.
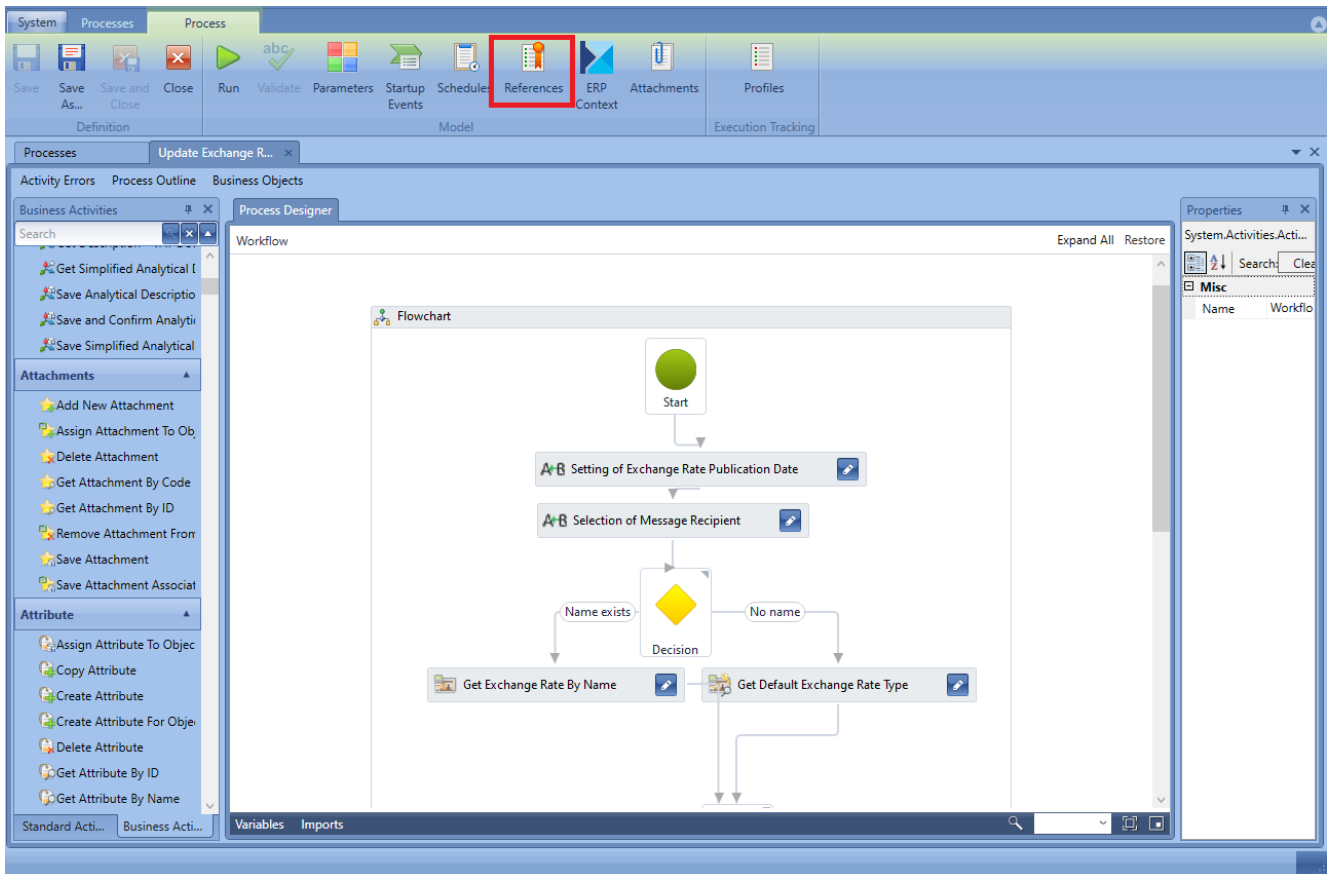
Hint
For a proper functioning of added extensions, it may be necessary to restart the Comarch ERP Standard system.
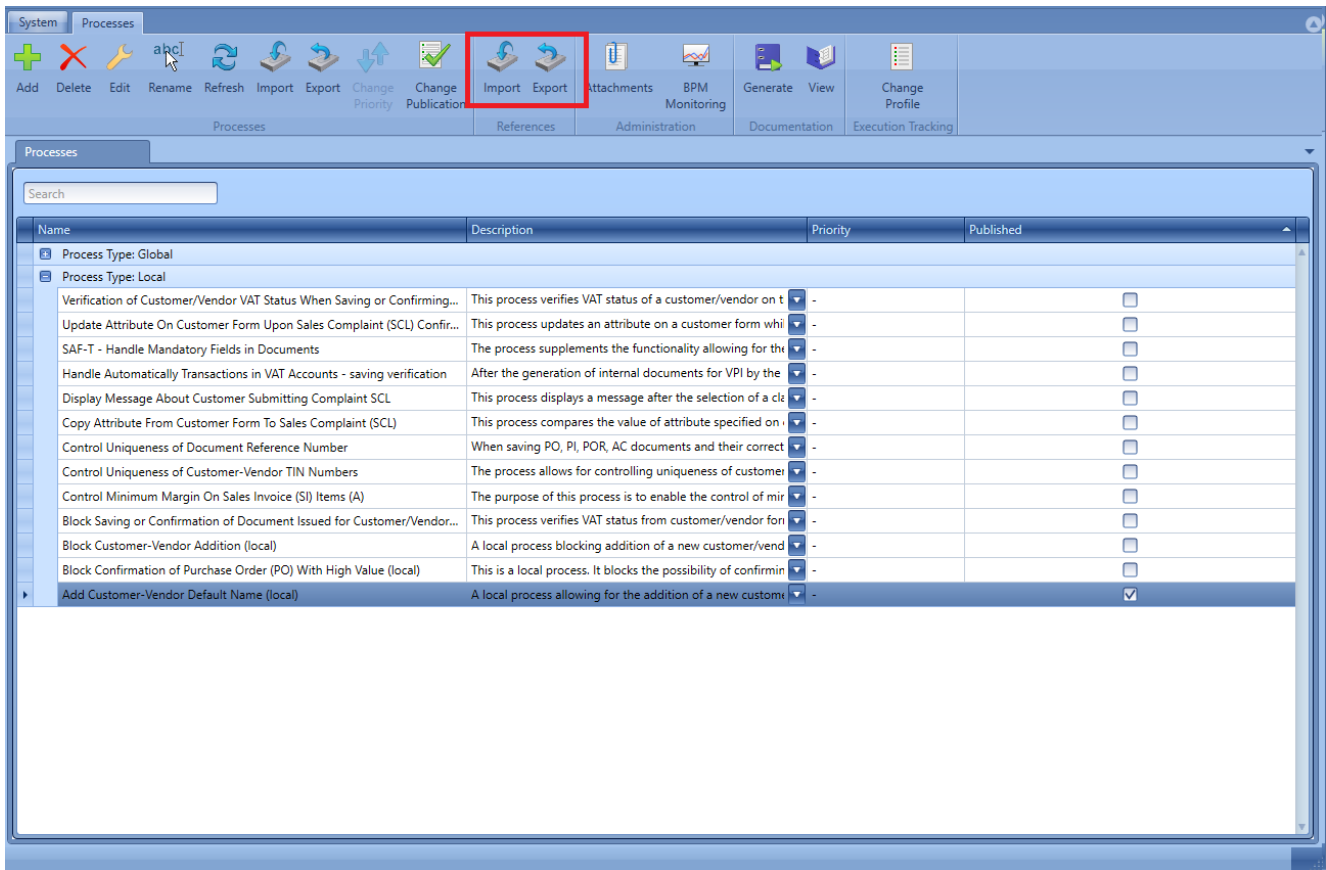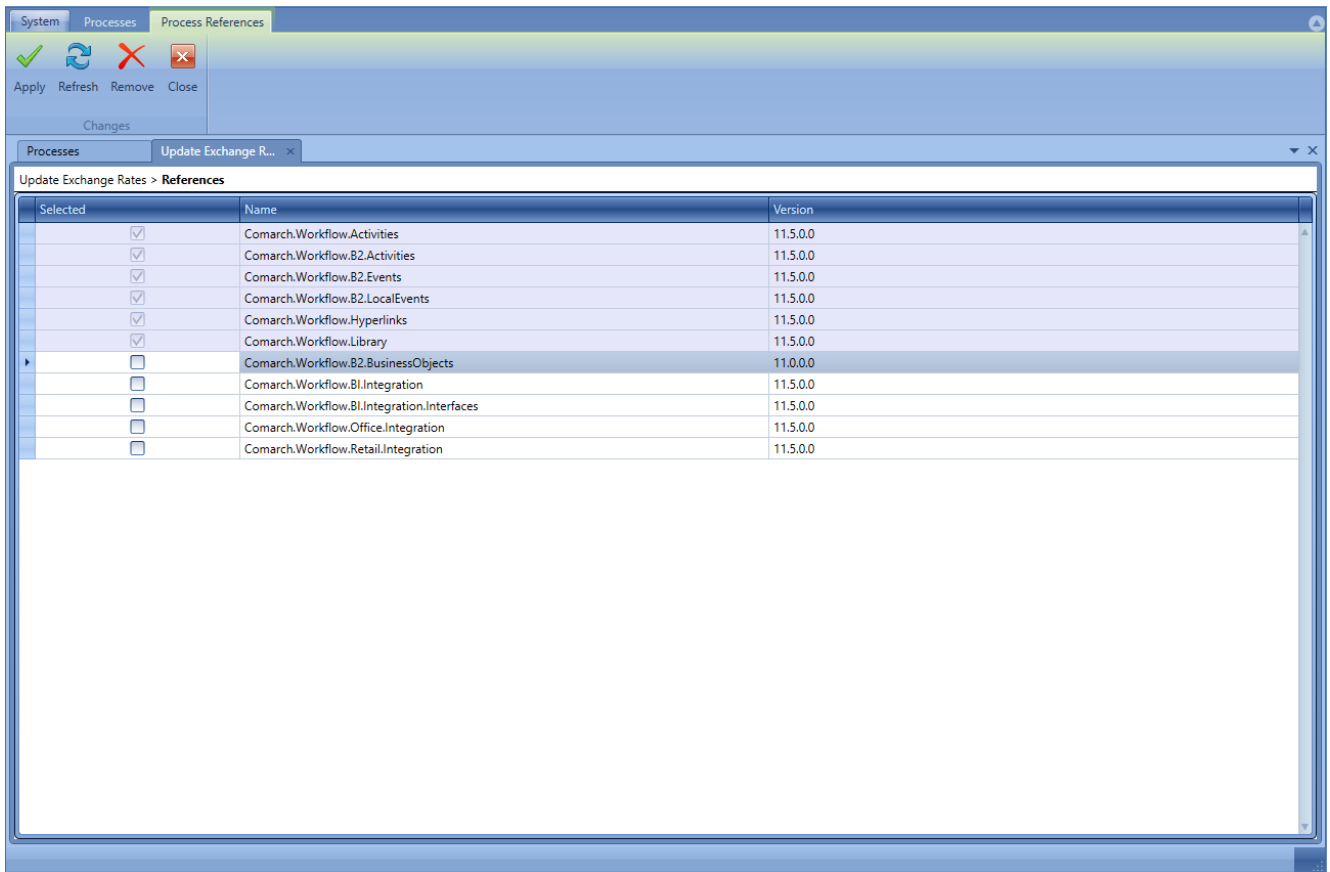
Adding references to the system

After uploading references to the system, it is possible to add them to particular processes. In process edition window, it is necessary to click on [**References**] button, available in *Model* group of buttons.

Opening window for adding references to a process

On the list of references, there are standard references which cannot be deleted. Additionally, the user has access to standard assemblies for integrating the Comarch ERP BPM with Comarch Business Intelligence, Microsoft Office or Comarch Retail POS.

List of references

After being added to the system, own, dedicated references are automatically displayed on the list of references available from the level of process definition. After selecting a reference and clicking on [**Apply**] button, it is possible to use the created extension.

Note
Upon importing new version of a process which refers to newer own assemblies, it is necessary to restart the BPM server service to retrieve new extension definitions.

ERP Context

The functionality of contexts allows for assigning a global process to a Comarch ERP Standard object from the level of which the process is to be started. A list or object (e.g., invoice) detail can be used as a context. To define a context, it is necessary to select [**ERP Context**] button from *Model* group of buttons.
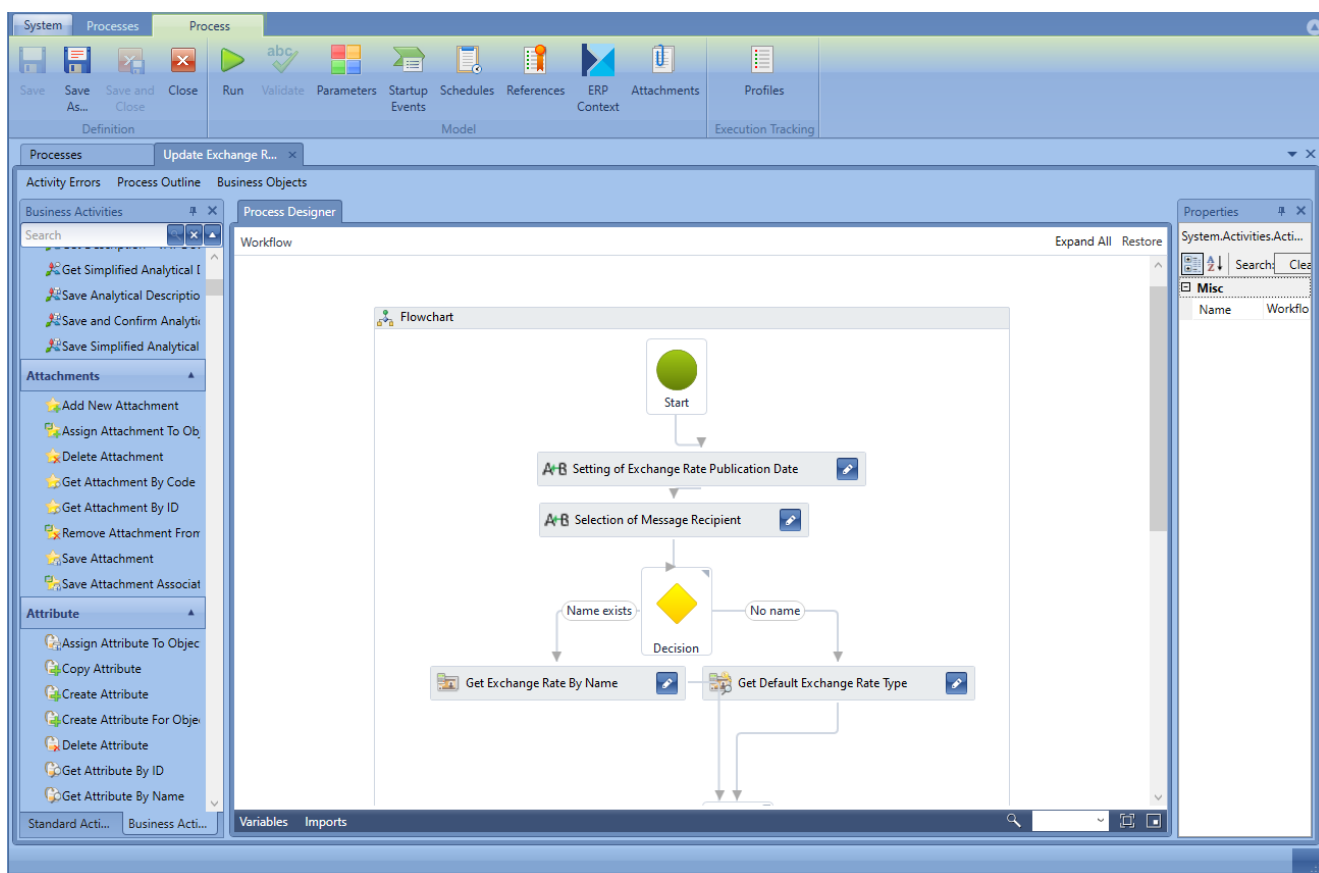
Starting window with context definition

A window, where it is possible to assign values retrieved from a given context to specific process parameters, is opened.
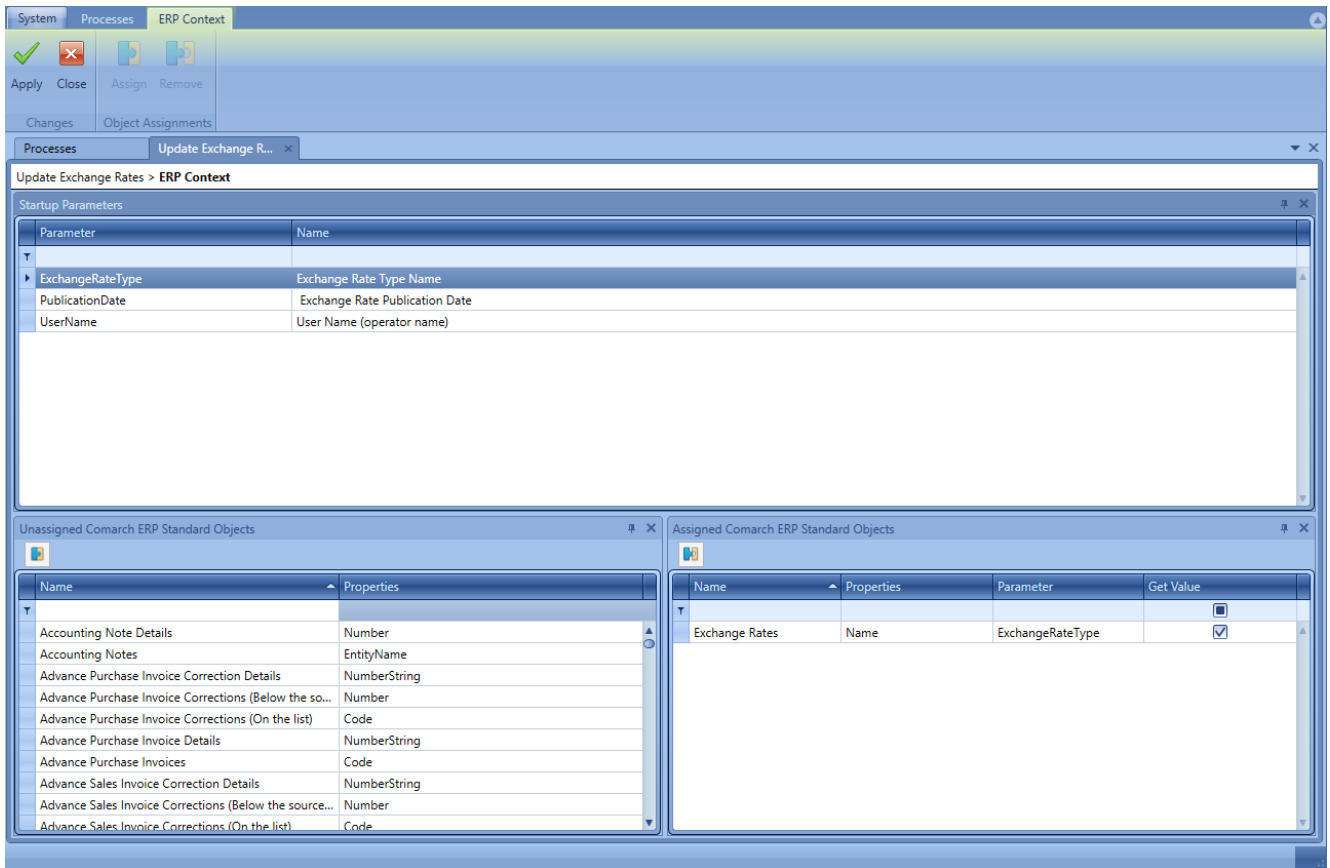
Window for defining context

In the section of startup parameters, there is a list of all user's parameters marked as *Startup.* Below, there is a list of available objects of the Comarch ERP Standard system along with information about the type of a given parameter. Assigning an object to a parameter makes a process visible for a given object, whereas the value of such parameter, upon contextual startup, is automatically completed with the value of the object property.
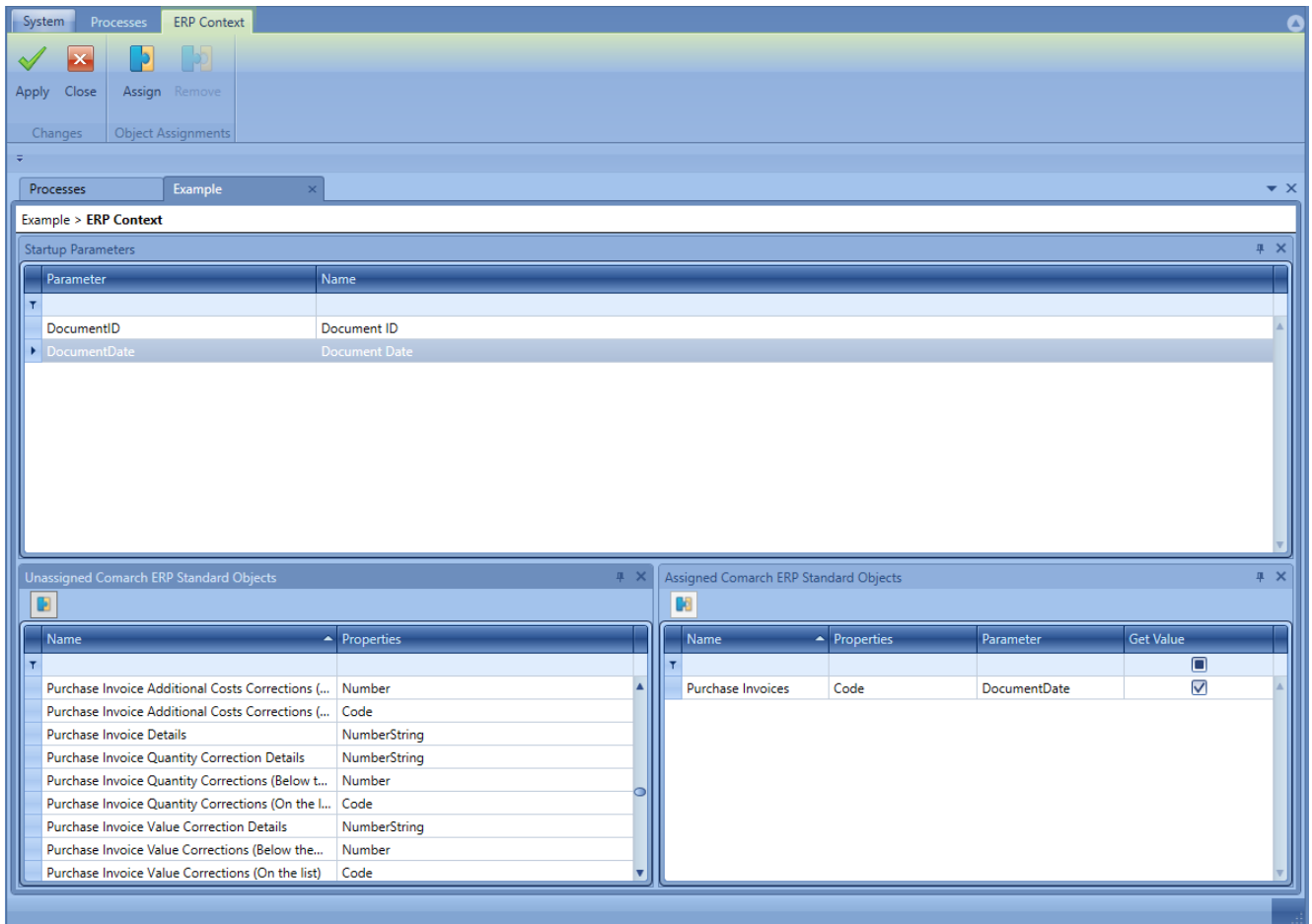
Example
A process executes some operations on a purchase invoice document (PI). When starting the process from the level of the Task Inbox, as process parameters it is necessary to specify document ID and transaction date. So it is possible to define a context in such a way as to make it possible to start the process from the level of the list of PI and for document ID and transaction date to be completed on the basis of selected item. To do so, in the window of the context definition, it is necessary to associate process parameters with the list of

purchase invoices (select object on the right side and click on [**Assign**]). Option *Get Value* should remain checked.
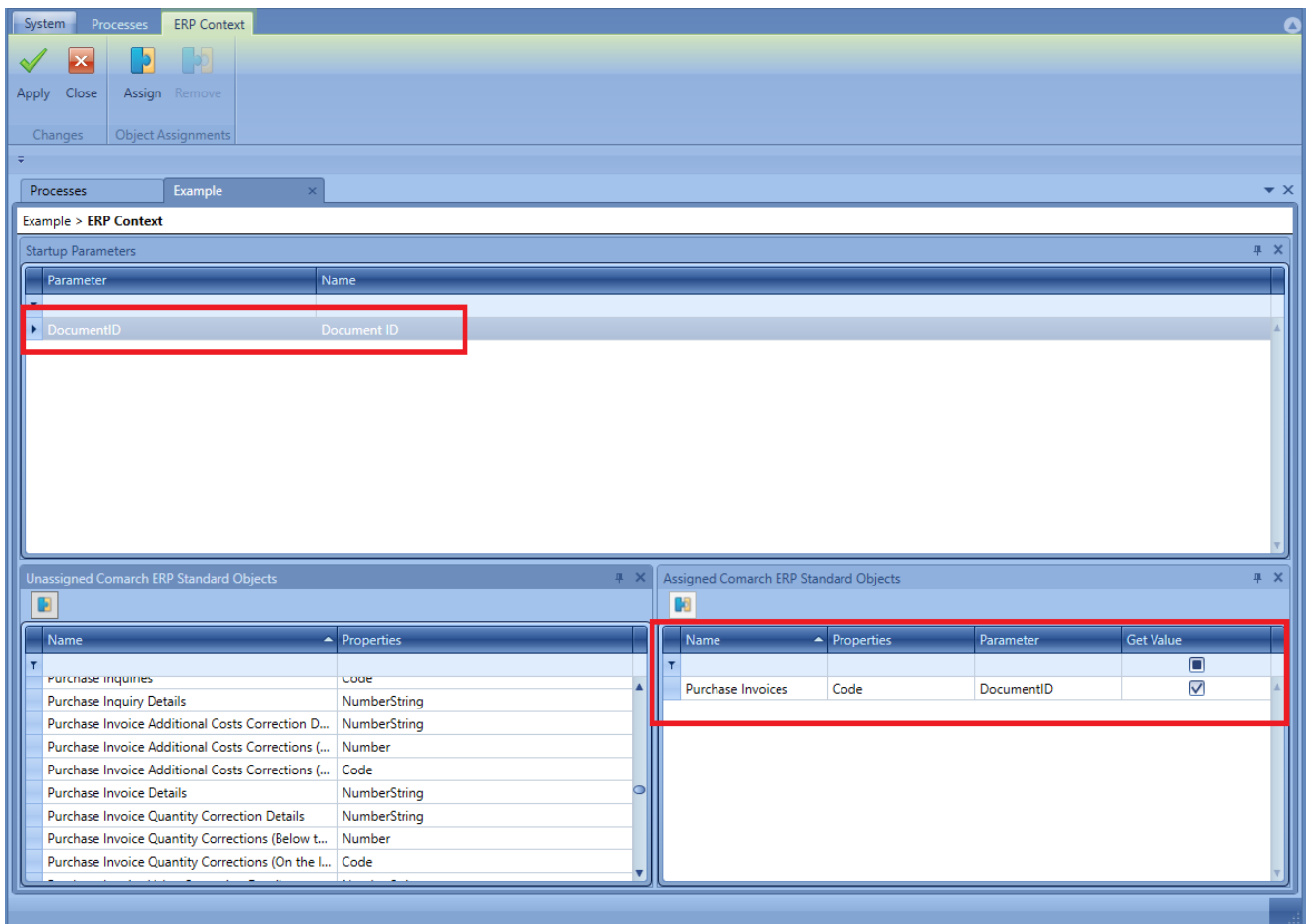
Context example – ID association

Context example – date association

After applying the changes, saving the process, publishing it and assigning appropriate [permissions](#), it will be possible to start the process from the level of the list of purchase in voices in the Comarch ERP Standard system.

Starting process from context