Collaboration and process diagrams

Introduction

BPMN diagrams (process and collaboration) diagrams can be assigned to processes. The user can assign as many diagrams (0..n) to a process as required. The BPMN model sits on top of the actual process management model and both are loosely coupled. This means that BPMN diagrams are representations of the actual model but enrich the model with additional semantics and information. With the loosely coupled BPMN model elements such as process steps from the underlying process management model. If a process has process steps which are used to build the BPMN diagram, the diagram has access to all documentation of the reused step. A diagram can also be created if the process has yet no process steps available. The process modeler could create the needed process steps but could also create "diagram only" process steps that exists in the diagram but not in the process management model.

Diagrams might be modeled "by Role" or "by System". In most cases if the diagram is intended to inform people about process flow and process execution, "by Role" diagrams are most appropriate. Diagrams modeled "by System" can be important to serve more technical use cases. While business systems are given by the logical component group architecture, the roles might be defined during modeling or the modelers use a predefined set of roles. It is recommended to work with a predefined set of roles which can then be used by all modelers in a harmonized way.
Given a process hierarchy (at least to the level of processes are available) the modeling of processes can start right away. To model a process the process modeler could start to model top-down / business-driven or bottom-up / IT-driven.

This document describes three archetypical way to model processes. In real life all three ways are relevant and might be mixed to cope with the companies requirements best.

### Pools and processes

In SAP Solution Manager pools typically represent processes. The lanes then represent the different process participants. To use pools you can chose from three different flavors of pools. You can use

- Current Process,
- Pool / Draft Process, and
- Pool / Blackbox Process.

The "Current Process" pool is linked to your current process (meaning the process the process/collaboration diagram is assigned to). You can use all process steps and assigned artifacts to model the process. Typically this is the process you wanted to focus on and you want to describe in greatest detail.

"Pool / Draft Process" pools can be used for two use cases:

First you can use them in context of your "Current Process". In collaboration diagrams you can add "Pool / Draft Processes" beside you current pool to model (only to the extend needed) surrounding processes. Again, you would model the aspects of the surrounding processes only to a level needed to understand your current process. "Pool / Draft Process" can be linked to other process management processes. After you did so, you can reuse processes steps and documentation of the linked process.

Example Draft Pool to achieve better understanding of current process:

![Draft Process Diagram](image1)

Second but very importantly "Pool / Draft Process" are used to draft processes. They can be used without any linkage to a process management process and you can freely unconstrained model your process. At later point in time you can replace the draft with an actual process management process and link the process to the execution. For this use cases please see "Business-driven process modeling" on this page.

The "Pool / Blackbox Process" is usually not used alone. It is like a black box where you want to depict a message flow form your current or draft process to a process you don't know in detail. For instance you might want to model your own purchasing process and for the understanding of your current process it is important to also understand what messages are send and send back from your supplier you can use the blackbox pool.

Example Blackbox Process:
Business-driven process modeling

In this approach one does process modeling w/o using already documented process steps. Only “Draft” process steps are used. These process steps only exist in the diagram and are not reused from the libraries nor leverage existing documentation nor are linked to the back-end systems. What on one hand side sounds like a dramatic disadvantage is on the other hand side a big advantage because the process modeler can clearly focus on the process flow and the process architecture. The linkage to the back-ends, the executables and all the other process management artifacts can be done later.

Model to-be operational process

First you create a process or collaboration diagram "by Role". It is recommended to use collaboration diagrams since they are superior over the process diagrams.

Select “Pool / Draft Process” at diagram creation. The “Pool / Draft Process” options adds a pool to the diagram that is not hard linked to any defined process. In this pool you can model what you want w/o being punished with any consistency checks.
Then you pick the required roles from the palette and drag’n’drop them onto the pool shape.

Then you can use the BPMN elements from the palette. For instance you can add a start event to indicate which triggers start the process.
You should only use draft / free process steps. The steps are not governed and hence are not constraint.

You can create draft steps by drag'n'drop them from the palette (1) or by picking them form the call-out menu (2) when you hover over e.g. a start event.

You can now model the to-be operational process. Draft process steps are marked with a little decorator icon in the lower left of the activity shape.

Link to-be operational process to IT landscape

After the to-be operational model was sufficiently defined the free-style model should be linked to the SAP Solution Manager process management artifacts. The definition of the to-be operational model was in the responsibility of the business department. The activity to link the diagram back is now a joint offer between the responsible solution architect, the business department and the respective application domain experts. Before you start to link the elements it is recommended to copy the diagram so that you preserve a copy of the initial version.

First you replace the draft pool with the actual process.
You can link the pool to any process available in the process management environment. If the pool represented your current process, you also should link it to the current process.

If you used further pools you can link them to the processes they stood for.

After you replaced the pool definition all documentation linked to the process are now available.

Next you would replace the draft process steps with the real process.
management process steps.

Based on the process you previously linked to the pool you can now use the process steps available for the same.

After you replaced the process step you have all documentation and even the executables and links to the managed systems established.

**IT-driven process modeling**

Even though the name might imply that diagrams for IT are "by System" it is recommended to also model these processes "by Role". This is due the fact that at some point the IT departments need to collaborate with the business departments and "by Role" diagrams are much
better accepted. So, the diagrams should be build with the business departments in mind.

In this approach process modelers mostly use already documented process steps which are linked to the underlying IT infrastructure. "Draft" process steps are used for functions which does not exist today and which are heavily discussed. In principle new process steps are directly created in the process step library and referenced. The linkage to the back-ends, the executables and all the other process management artifacts should be build directly.

First you create a process or collaboration diagram "by Role". It is recommended to use collaboration diagrams since they are superior over the process diagrams.

Select “Current Process” at diagram creation. Having done this you can right away use process steps and artifacts assigned to the current process.

Now you can add roles to depict responsibilities during process execution.
Then you can use the BPMN elements from the palette. For instance you can add a start event to indicate which triggers start the process.

If you require process steps which are not yet part of your process definition you can add them by

- finding the required steps in the process step library,
- creating a new process step based on executable you found in the executable library,
- creating a new process step from an executable you looked up in a managed system, or
- creating a new process step both in the process and process step library.

If you created new process steps you can assign executable and documentation as needed.
You can leverage existing process steps.

For existing process steps you have direct access to executables and documentation.

**Diagrams for IT**

Diagrams "by System" are mainly related to diagrams for IT. These diagrams are used to describe technical dependencies, media breaks, or other kind of IT related matters. In case your model is focused e.g. on interfaces and if you want to establish an interface monitoring then the system diagram are most appropriate.
The setting “Detached Lanes” allows to freely move lanes in a pool. Since this setting is not BPMN compliant it is not recommended to use it. The operations relevant flag controls the diagram relevance for the business process monitoring applications.

First you create a process or collaboration diagram “by System”. It is recommended to use collaboration diagrams since they are superior over the process diagrams.

IT diagrams should always start from the current process.

Now the Logical Component Groups can be used as lanes as they represent the actual business systems. You can also define free components which are not based on the real system landscape.
The lanes might look like this.

Now you can add process steps to the lanes. This can be done manually one-by-one or using a bulk function.
You can select all relevant process steps.

The process steps are automatically distributed on the lanes according to their logical component group assignment.

In case process steps are placed on a lane which does not fit with actual logical component group it gets highlighted.

You can now easily see media breaks and you can add interfaces to intermediate message event.

For details on interfaces and interface diagrams please see here.