BPMN 2.0 - Business Process Model and Notation

Activities

Task

A **Task** is a unit of work, the job to be performed. When marked with a ⊞ symbol it indicates a **Sub-Process,** an activity that can be refined.

Transaction

A **Transaction** is a set of activities that logically belong together; it might follow a specified transaction protocol.

Event Sub-Process

An **Event Sub-Process** is placed into a Process or Sub-Process. It is activated when its start event gets triggered and can interrupt the higher level process context or run in parallel (non-interrupting) depending on the start event.

Call Activity

A **Call Activity** is a wrapper for a globally defined Task or Process reused in the current Process. A call to a Process is marked with a ⊞ symbol.

Activity Markers

Markers indicate execution behavior of activities:

- ⊞ Sub-Process Marker
- Loop Marker
- Parallel MI Marker
- Sequential MI Marker
- Ad Hoc Marker
- Compensation Marker

Task Types

Types specify the nature of the action to be performed:

- Send Task
- Receive Task
- User Task
- Manual Task
- Business Rule Task
- Service Task
- Script Task

Sequence Flow

defines the execution order of activities.

Default Flow

is the default branch to be chosen if all other conditions evaluate to false.

Conditional Flow

has a condition assigned that defines whether or not the flow is used.

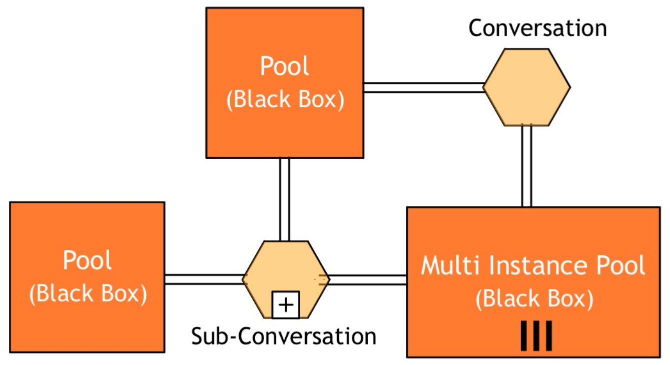
Conversations

A **Conversation** defines a set of logically related message exchanges. When marked with a ⊞ symbol it indicates a **Sub-Conversation**, a compound conversation element.

A **Call Conversation** is a wrapper for a globally defined Conversation or Sub-Conversation. A call to a Sub-conversation is marked with a ⊞ symbol.

A **Conversation Link** connects Conversations and Participants.

Conversation Diagram



Choreographies

Participant A
Choreography Task
Participant B

A **Choreography Task** represents an Interaction (Message Exchange) between two Participants.

Participant A
Sub-Choreography
⊞
Participant B
Participant C

A **Sub-Choreography** contains a refined choreography with several Interactions.

Participant A
Call Choreography
Participant B

A **Call Choreography** is a wrapper for a globally defined Choreography Task or Sub-Choreography. A call to a Sub-Choreography is marked with a ⊞ symbol.

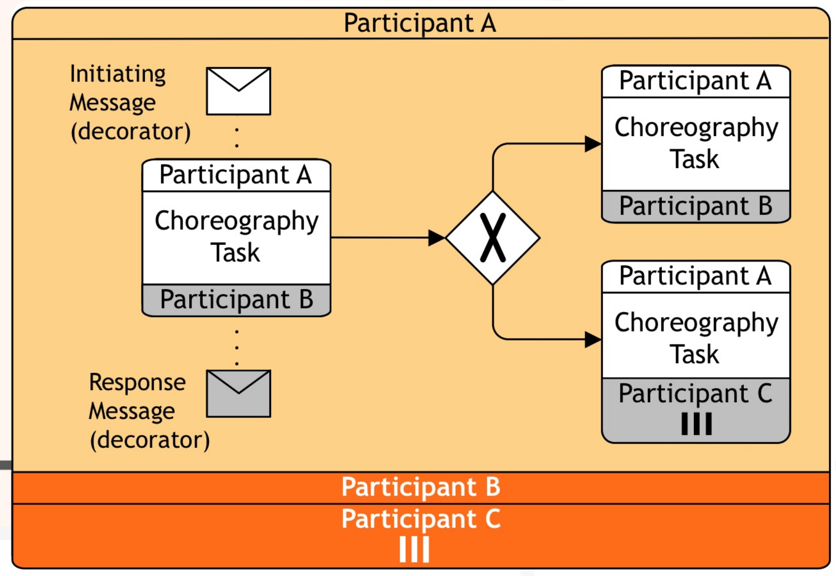
Multiple Participants Marker

denotes a set of Participants of the same kind.

Message

a decorator depicting the content of the message. It can only be attached to Choreography Tasks.

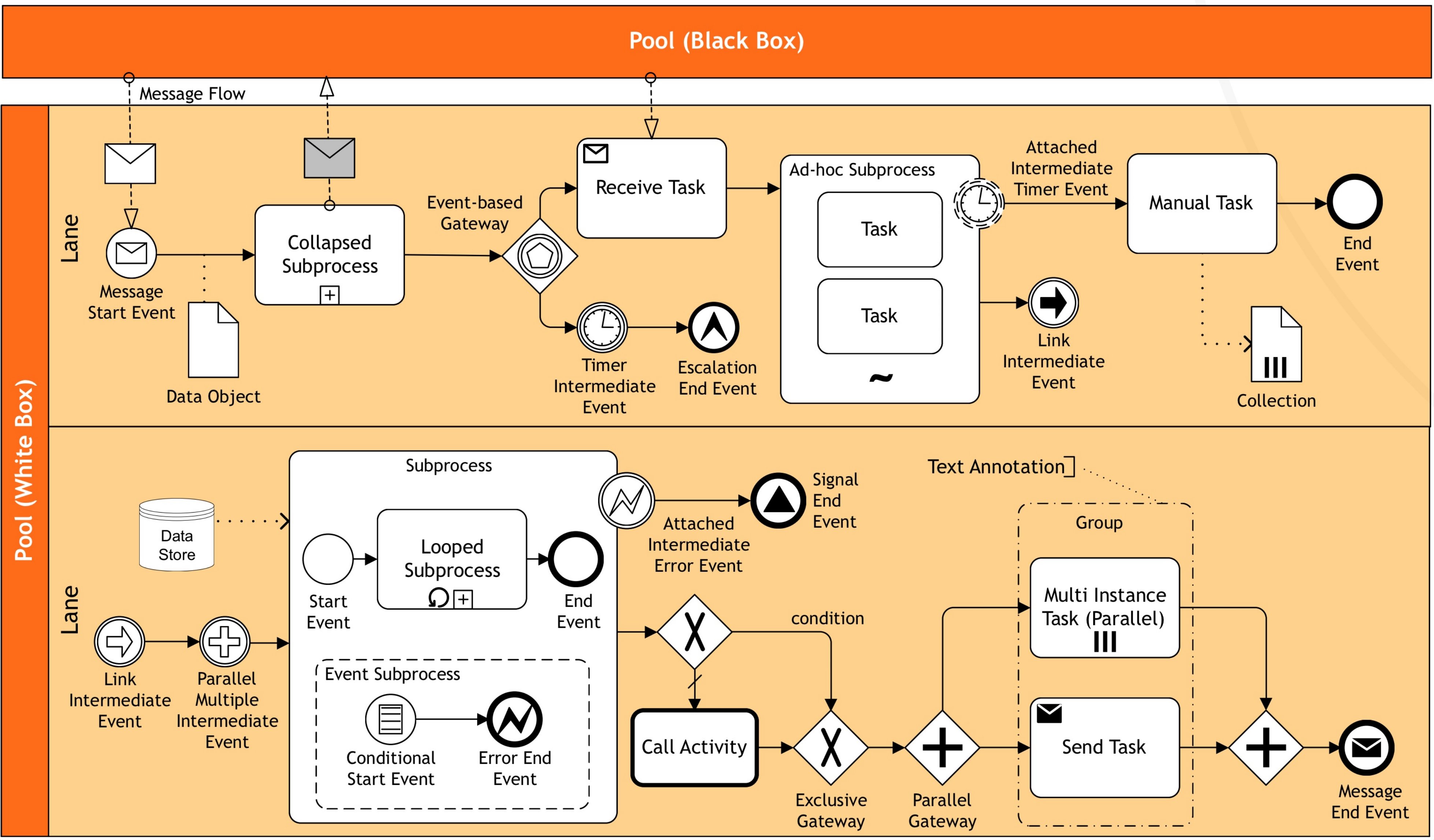
Choreography Diagram



Events

	Start							EndIntermed
	Standard	Event Sub-Process Interrupting	Event Sub-Process Non-Interrupting	Catching	Boundary Interrupting	Boundary Non-Interrupting	Throwing	Standard
None: Untyped events, indicate start point, state changes or final states.	○						○	○
Message: Receiving and sending messages.	○	○	○	○	○	○	●	●
Timer: Cyclic timer events, points in time, time spans or timeouts.	○	○	○	○	○	○		
Escalation: Escalating to an higher level of responsibility.		○	○		○	○	●	●
Conditional: Reacting to changed business conditions or integrating business rules.	○	○	○	○	○	○		
Link: Off-page connectors. Two corresponding link events equal a sequence flow.				○			●	
Error: Catching or throwing named errors.		○			○			●
Cancel: Reacting to cancelled transactions or triggering cancellation.					○			●
Compensation: Handling or triggering compensation.		○			○		●	●
Signal: Signalling across different processes. A signal thrown can be caught multiple times.	○	○	○	○	○	○	●	●
Multiple: Catching one out of a set of events. Throwing all events defined	○	○	○	○	○	○	●	●
Parallel Multiple: Catching all out of a set of parallel events.	○	○	○	○	○	○		
Terminate: Triggering the immediate termination of a process.								●

Collaboration Diagram



Gateways

Exclusive Gateway

When splitting, it routes the sequence flow to exactly one of the outgoing branches. When merging, it awaits one incoming branch to complete before triggering the outgoing flow.

Event-based Gateway

Is always followed by catching events or receive tasks. Sequence flow is routed to the subsequent event/task which happens first.

Parallel Gateway

When used to split the sequence flow, all outgoing branches are activated simultaneously. When merging parallel branches it waits for all incoming branches to complete before triggering the outgoing flow.

Inclusive Gateway

When splitting, one or more branches are activated. All active incoming branches must complete before merging.

Exclusive Event-based Gateway (instantiate)

Each occurrence of a subsequent event starts a new process instance.

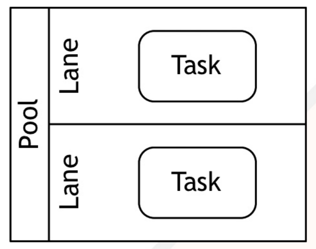
Complex Gateway

Complex merging and branching behavior that is not captured by other gateways.

Parallel Event-based Gateway (instantiate)

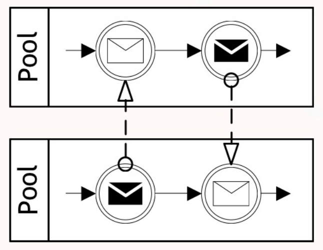
The occurrence of all subsequent events starts a new process instance.

Swimlanes



Pools (Participants) and **Lanes** represent responsibilities for activities in a process. A pool or a lane can be an organization, a role, or a system. Lanes subdivide pools or other lanes hierarchically.

Message Flow symbolizes information flow across organizational boundaries. Message flow can be attached to pools, activities, or message events. The Message Flow can be decorated with an envelope depicting the content of the message.



The order of **message exchanges** can be specified by combining message flow and sequence flow.

Data

A **Data Object** represents information flowing through the process, such as business documents, e-mails, or letters.

A **Collection Data Object** represents a collection of information, e.g., a list of order items.

Input

A **Data Input** is an external input for the entire process.A kind of input parameter.

Out-put

A **Data Output** is data result of the entire process. A kind of output parameter.

A **Data Association** is used to associate data elements to Activities, Processes and Global Tasks.

Data Store

A **Data Store** is a place where the process can read or write data, e.g., a database or a filing cabinet. It persists beyond the lifetime of the process instance.

BPM Offensive Berlin
HPI Hasso Plattner Institut
IT Systems Engineering | Universität Potsdam
Humboldt-Universität zu Berlin
camunda the business process company
inubit integrating your business and IT
SIGNAVIO simply professional