End

Start

Events

Call

Standard

Throwing

Interrupting

Soundary Non-

nterrupting

Boundary

Catching

Event Sub-Process Non-Interrupting

nterrupting

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.

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

Transaction

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 (noninterrupting) depending on the start event.

Event Sub-Process

A Call Activity is a wrapper for a globally defined Task or Process. A call to a Process is marked with a 🕂 symbol.

Call Activity

Types specify the nature of the action to be performed: **Fask Types**

Markers indicate execution behavior of activities:

Activity Markers

Send Task \rangle

Sub-Process Marker

+ G

Receive Task

User Task

Manual Task

Sequential MI Marker

Ш

Parallel MI Marker

Loop Marker

Business Rule Task Service Task

Compensation Marker

Ad Hoc Marker

Script Task M

Sequence Flow

Conditional Flow

Default Flow defines the execution order of activities.

has a condition assigned that defines whether or not the flow is used. is the default branch to be chosen if all other conditions evaluate to false.

Exclusive Gateway ×

Gateways

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.

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

Event-based Gateway

Parallel Gateway **(+**)

(instantiate)
Each occurrence of a subsequent **Exclusive Event-based Gateway** When used to split the sequence flow, all outgoing intendes are activated situlutianeously. When merging parallel branches it waits for all incoming branches to complete before triggering the outgoing flow. 0

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

0

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 event starts a new process

Conversations

Choreographies

Participant A

A Conversation defines a set of logically related message exchanges. When marked with a $\boxed{+}$ symbol it indicates a Sub-Conversation, a compound conversation element.

Choreography Task Participant B

Participant A

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

ation ₫ Pool (Black Box)

A Sub-Choreography contains a refined choreography with several Interactions. Sub-Choreography | + | Participant B | Participant C | A Choreography Task represents an Interaction (Message Exchange) between two Participants.

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 \(\pi\) symbol. Choreography

None: Untyped events, indicate start point, state changes or final states.

Choreography Diagram

(1)

 \bigcirc

Message: Receiving and

points in time, time spans or

Fimer: Cyclic timer events,

 \odot

 (\mathcal{A})

(

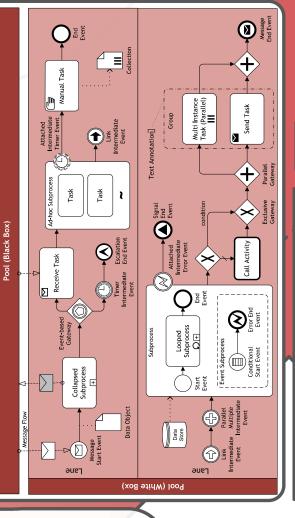
≡

Participant A Initiating Message (decorator) Multiple Participants Marker denotes a set of Participants of the same kind.

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

Choreography Task Participant C Choreography Task Participant A Participant B Participant A Choreography Task Participant B \cdot

Collaboration Diagram



Two corresponding link events equal a sequence flow. Signal: Signalling across differ-Cancel: Reacting to cancelled Conditional: Reacting to changed business conditions or integrating business rules. Error: Catching or throwing Compensation: Handling or Link: Off-page connectors. Escalation: Escalating to transactions or triggering triggering compensation an higher level of responsibility. named errors. cancellation. timeouts.

 \otimes \odot \odot

 (\exists)

 (\forall)

 \odot

 (\mathbb{Z})

1

((E) (\bigcirc) (\hat{Q}) 4 4 ent processes. A signal thrown can be caught multiple times. Multiple: Catching one out of a set of events. Throwing all **Ferminate:** Triggering the mmediate termination of a Parallel Multiple: Catching all out of a set of parallel events defined

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

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

nbnt

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

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s camnuda

Hasso Plattner Institut

Φ

Swimlanes

Task

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

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.

Data Store

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exchanges can be specified by combining message flow and sequence flow.

Message flow can be attached to pools, activities, or st message events. The Message in Flow can be decorated with an envelope depicting the content of the message.

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

The order of message

> Message Flow symbolizes organizational boundaries. information flow across

Task

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