BPMN 2.0 Business Process Model And Notation - Complete Element Set

Pools and Lanes
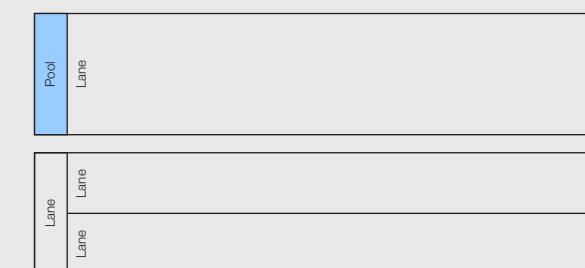
A **Pool** is used to define either a group of *Participants* such as an area within an organization or an external entity that collaborates within a process.

A process model is normally created from the perspective of a single participant – the **White Box Pool**, and contains the detail of that process. **Black Box Pools** are considered external to the scope of the process (although not necessarily outside of the organization), and do not show flow and activities. Black box pools may be collapsed and rotated, but do not have to be.

A **Lane** is used to define a specific participant or role within a process.

A lane may be contained within a pool or may itself be broken down into other lanes:

Core BPMN Objects

- Sequence Flow
- Pool (Black Box)
- Message Flow
- Start Event
- Association
- Customer
- Order
- Order receipt and charge
- Prepared Order
- Beverage Order
- Cashier — Order Recieved — Enter Customer Order — Calculate Total — Process Payment
- Task
- Data Object
- Intermediate Event
- Order Delivered
- Deliver Order
- End Event
- Barista — Beverage — Prepare Beverage [+]
- Order Type
- Sub Process
- Gateway
- Pool (White Box)
- Chef — Prepare Tasty Snack [+]
- Lane
- Tasty Snack

Events

An Event is an indicator that something has happened within a process.

	Top Level	Event Sub Process Interupting	Event Sub Process Non Interupting	Catching	Boundary Interrupting	Boundary Non Interrupting	Throwing	End Event
None	●						●	●
Message	●	●	●	●	●	●	●	●
Timer	●	●	●	●	●	●		
Escalation	●	●		●	●	●	●	●
Conditional	●	●	●	●	●	●		
Link				●				●
Error		●			●			●
Cancel					●			●
Compensation		●			●		●	●
Signal	●	●	●	●	●	●	●	●
Multiple	●	●	●	●	●	●	●	●
Parallel Multiple	●	●	●	●	●	●		
Terminate								●

Gateways

A diverging **Exclusive Gateway** is used to create alternative paths within a Process flow. A converging Exclusive Gateway is used to merge alternative paths.

A diverging **Inclusive Gateway** can be used to create alternative but also parallel paths within a Process flow. A converging Inclusive Gateway is used to merge a combination of alternative and parallel paths.
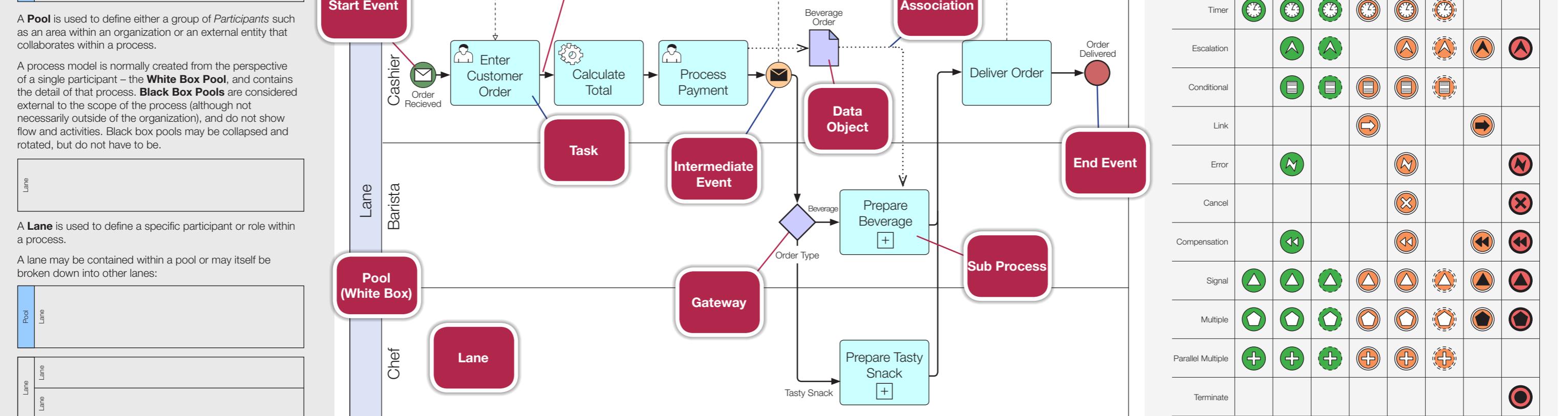
A **Parallel Gateway** is used to synchronize parallel flows and to create parallel flows.

The **Complex Gateway** can be used to model complex synchronization behavior, not captured by other gateways

The **Event-Based Gateway** represents a branching point in the Process where the alternative paths that follow the Gateway are based on Events that occur, rather than the evaluation of Expressions using Process data (as with an Exclusive or Inclusive Gateway).
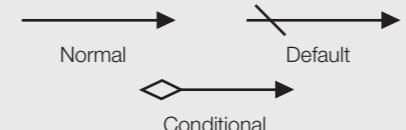
Flows

Message Flow is the flow of information as *Messages* between *Participants*.

Sequence Flow is the flow of the process between events that occur, activities performed by the lanes and decisions that are made (gateways).

- Normal
- Default
- Conditional

Associations are used to attach artifacts (such as data objects) to activities.

- Data Association (Directional)
- Data Association (Bi-directional)
- Association

Activities

Within the flow of a process, one or more lanes will perform a number of activities.
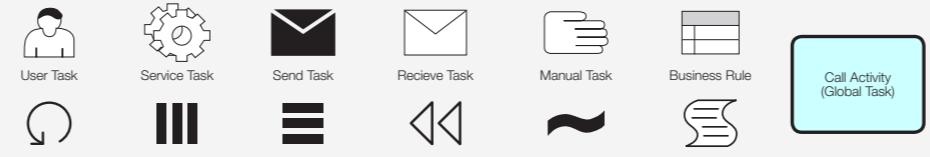
A **Task** is something that a lane (role) does during the process. A task is a granular (atomic) activity that cannot or does not need to be broken down any further.

A **Sub Process** summarizes a group of activities, and can be expanded out into further detail. Sub processes can be shown as collapsed (with the [+] symbol), or expanded.

Tasks

- User Task
- Service Task
- Send Task
- Recieve Task
- Manual Task
- Business Rule
- Call Activity (Global Task)
- Loop
- Parallel Multiple Instances
- Sequential Multiple Instances
- Compensation
- Ad Hoc
- Script

Sub Processes

- Collapsed Sub Process
- Expanded Sub Process
- Event Sub Process
- Loop
- Parallel Multiple Instances
- Sequential Multiple Instances
- Compensation
- Ad Hoc
- Transaction
- Event Sub Processes
- Expanded Sub Process

Artifacts

Artifacts allow additional information to be provided on a process model

Data Objects are inputs to and outputs from activities. Data objects could be used to represent documents, data or other objects that are passed between the activities in a process.

- Data Object
- Data Object Collection
- Data Input
- Data Input Collection
- Data Output
- Data Output Collection

A **Data Store** is somewhere that the process can read or write data, that persists beyond the scope of the process.

A **Message** is used to depict the contents of a communication between 2 participants.

A **Group** is a visual way of informally grouping items on a diagram, for example to highlight an area that requires further analysis.

Annotations allow additional information relevant in documenting the process to be shown on the diagram.