FLOWX.AI

PLATFORM OVERVIEW / Frameworks and standards / Business process industry and standards

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Let's get into a bit more details on the main types of BPMN process elements.

Events

Events are **signals that something happens** – this includes the start and end of a process as well as any interaction with the process' environment.

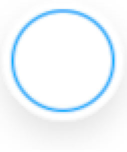
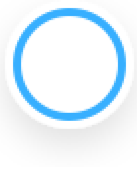
There are 3 types of events:

- start events
- end events

- intermediate events

Start and End events

Start & End events

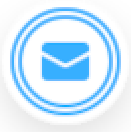
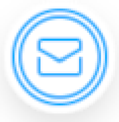
Start Event Icon	End Event Icon
	
event that triggers the process	event that defines the state that terminates the process

Intermediate events

Message events

- represents incoming or outgoing messages from external parties - information, email, bank transfer
- Receive Message Event - incoming message occurring during the process flow, somewhere between start and end
- Send Message Event - outgoing message

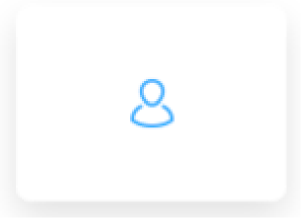
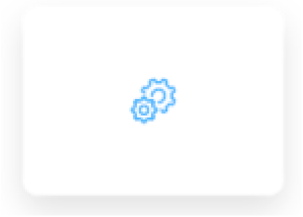
Send Message Event Icon	Receive Message Event Icon

Send Message Event Icon	Receive Message Event Icon
	
outgoing message	incoming message

Activities

Task

- it is an atomic activity within a process flow. You create a task when the activity cannot be broken down to a finer level of detail. A task can only belong to one lane.

User task	Service task
	
a task that requires the human to perform an action	a task that uses a Web service, an automated application, or other kinds of service in completing the task.

Send Task

- represents a task that sends a Message to another lane or pool. The Task is completed once the Message has been sent.

Receive Task

- indicates that the process has to wait for a message to arrive in order to continue. The Task is completed once the message has received.

User Task

- is a Task that is performed without the aid of any business process execution engine or any application. It is performed when the user performs a certain action in the application.

Service Task

- is executed by a business process engine. The task defines a script that the
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  can interpret. When the task begin, the engine will execute the script. The Task will be completed when the script is completed. It also provides a mechanism for a process to run a
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  on the process data.

BPMN Subprocesses

In BPMN, a subprocess is a compound activity that represents a collection of other tasks and subprocesses. Generally, we create BPMN diagrams to communicate processes with others. To facilitate effective communications, we really do not want to make a business process diagram too complex. By using subprocesses, you can split a complex process into multiple levels, which allows you to focus on a particular area in a single process diagram.

Gateways

Gateways allow to control as well as merge and split the

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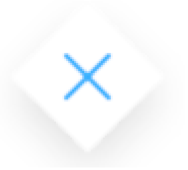
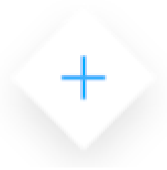
.

Exclusive gateways

In business processes, you typically need to make choices — **business decisions**. The most common type of decision is choosing **either/or**. Exclusive Gateways limit the possible outcome of a decision to a single path, and circumstances choose which one to follow.

Parallel gateways

In many cases, you want to split up the flow within your business process. For example the sales and risk departments may examine a new mortgage application at the same time. This reduces the total cycle time for a case. To express parallel flow in BPMN, you use a **parallel gateway**.

Exclusive gateway (XOR)	Parallel gateway (AND)
	

Exclusive gateway (XOR)	Parallel gateway (AND)
• defines a decision point	• no decision making; • all outgoing branches are activated

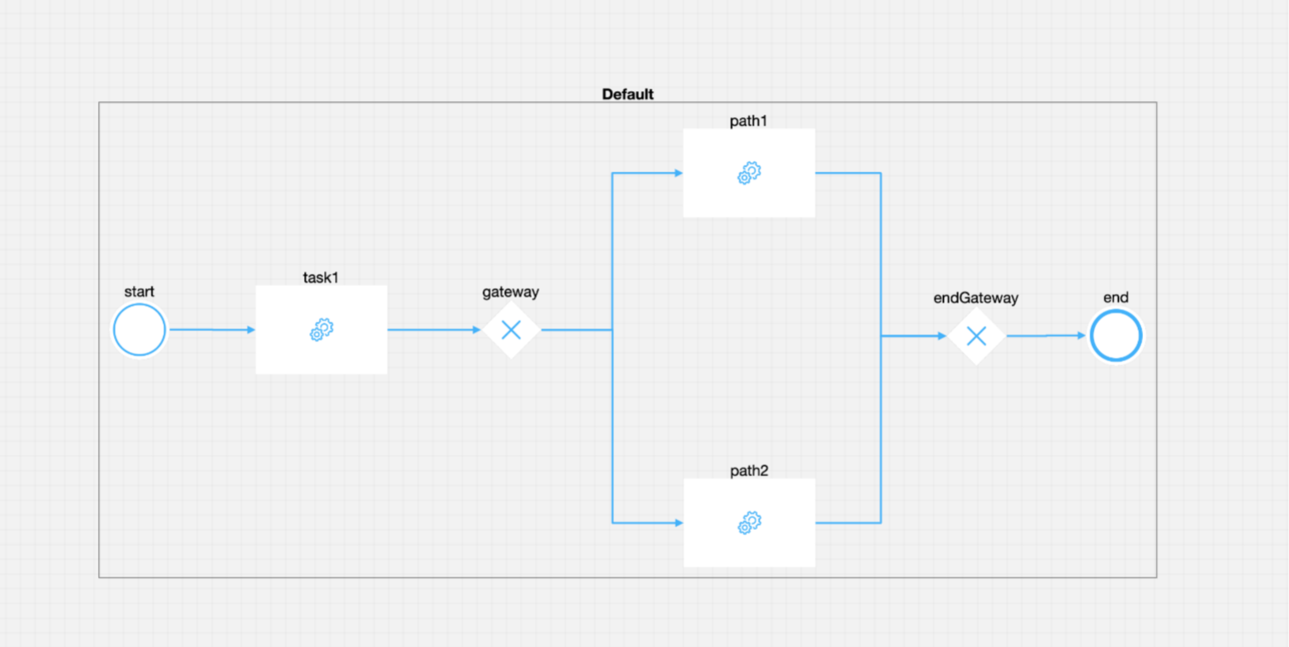
Closing gateway

- closes gateways by connecting branches with no logic involved
- symbol used depends on the initial gateway
- parallel gateways - waits for all input tokens and merges all into one single token
- inclusive gateways
  - waits for all active inputs
  - is informed about all preceding token flows - knows the path selected and are expecting the token from these

Was this page helpful?

PLATFORM OVERVIEW / Frameworks and standards / Business process industry and standards / Intro to DMN

As we've seen in the previous chapter, Business Process Model and Notation (**BPMN**) is used to define business processes as a sequence of activities. If we need to branch off different process paths, we use gateways. These have rules attached to them in order to decide on which outgoing path should the process continue on.



INFO

For more information on how to define DMN gateway decisions, check the **Exclusive gateway node** section.

We needed a convenient way of specifying the

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and we picked two possible ways of writing business rules:

- defining them as DMN decisions

INFO

You can now define a DMN Business Rule Action directly in

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> . For more information, check the **DMN Business Rule Action** section.

- adding MVEL scripts

What is Decision Model and Notation (DMN)?

Decision Model and Notation (or DMN) is a graphical language that is used to specify business decisions. DMN acts as a translator, converting the code behind complex decision-making into easily readable diagrams.

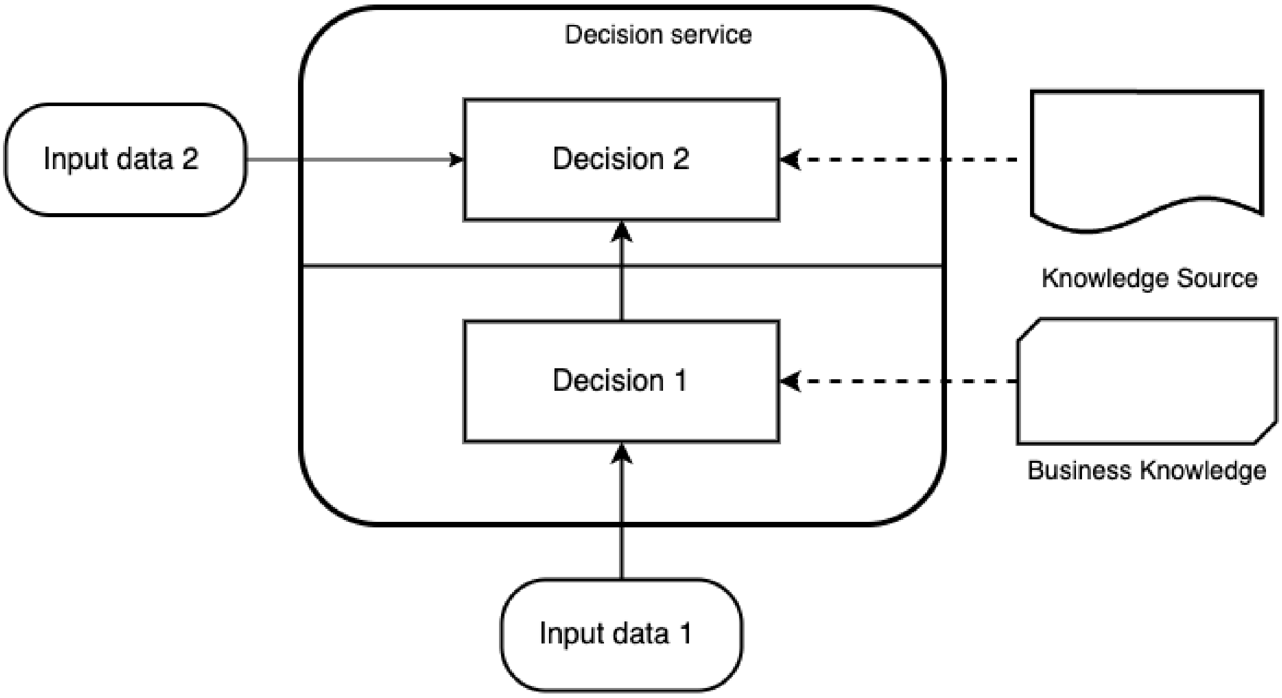
The Business Process Model and Notation is used to create the majority of process models **(BPMN)**. The DMN standard was developed to complement BPMN by providing a mechanism for modeling decision-making represented by a Task within a process model. DMN does not have to be used in conjunction with BPMN, but it is highly compatible.

> **DANGER**
>
> FLOWX.AI supports DMN 1.3 version.

DMN Elements

There are 4 basic elements of the **Decision Model and Notation**:

- Decision
- Business Knowledge Model
- Input Data
- Knowledge Source



Decision

It’s the center point of a DMN diagram and it symbolizes the action that determines as output the result of a decision.

Decision service

A decision service is a high-level decision with well-defined inputs that is made available as a service for invocation. An external application or business process can call the decision service (BPMN).

Business Knowledge Model

It portrays a specific knowledge within the business. It stores the origin of the information. Decisions that have the same logic but depend on different sub-input data or sub-decisions use business knowledge models to determine which procedure to follow.

Example: a decision, rule, or standard table.

Input Data

This is the information used as an input to the normal decision. It's the variable that configures the result. Input data usually includes business-level concepts or objects relevant to the business.

Example: Entering a customer's tax number and the amount requested in a credit assessment decision.

Knowledge Source

It's a source of knowledge that conveys a kind of legitimacy to the business.

Example: policy, legislation, rules.

DMN Decision Table

A decision table represents decision logic which can be depicted as a table in Decision Model and Notation. It consists of inputs, outputs, rules, and hit policy.

Decision table elements	
Inputs	A decision table can have one or more input clauses, that represent the attributes on which the rule should be applied.

Decision table elements	
Outputs	Each entry with values for the input clause needs to be associated with output clauses. The output represents the result that we set if the rules applied to the input are met.
Rules	Each rule contains input and output entries. The input entries are the condition and the output entries are the conclusion of the rule. If each input entry (condition) is satisfied, then the rule is satisfied and the decision result contains the output entries (conclusion) of this rule.
Hit policy	The hit policy specifies what the result of the decision table is in cases of overlapping rules, for example, when more than one rule matches the input data.

Hit Policy examples

Unique **First** **Priority** **Any** **Rule order** **Collect order**

- unique result
- only one rule will match, or no rule

DMN Model

DMN defines an XML schema that allows DMN models to be used across multiple DMN authoring platforms.

You can use this XML example with FLOWX Designer, adding it to a Business Rule Action - using an MVEL script. Then you can switch to DMN if you need to generate a graphical representation of the model.

Using DMN with FLOWX Designer

As mentioned previously, DMN can be used with FLOWX Designer for the following scenarios:

- For defining gateway decisions, using exclusive gateways.
- For defining business rules actions attached to a task node.

In depth docs

» DMN Documentation

Was this page helpful?

PLATFORM OVERVIEW / Frameworks and standards / Business process industry and standards / Intro to MVEL

We can also **specify the business rules logic using MVEL scripts**. As opposed to DMN, with MVEL you can create complex business rules with multiple parameters and sub-calculations.

What is MVEL?

MVFLEX Expression Language (MVEL) is an expression language with a syntax similar to the Java programming language. This makes it relatively easy to use in order to define more complex business rules and that cannot be defined using DMN.

The runtime allows MVEL expressions to be executed either interpretively, or through a pre-compilation process with support for runtime byte-code generation to remove overhead. We pre-compile most of the MVEL code in order to make sure the process flow advances as fast as possible.

Example

```
if( input.get("user.credit_score") >= 700 ) {

output.setNextNodeName("TASK_SET_CREDIT_CARD_TYPE_PREMIUM");
} else {

output.setNextNodeName("TASK_SET_CREDIT_CARD_TYPE_STANDARD");
}
```

In depth docs

» MVEL Documentation

Was this page helpful?