

EIS Project High Level Architectures

IV. LESSON PROPER

Business Process Model Notation

- Business Process Model and Notation (BPMN) is the global standard for process modelling and one of the most important components of successful Business-IT-Alignment.
- Many software products support the standard; you are less dependent on any particular vendor's products.
- Simplicity
- Power of expression
- Implementation in IT

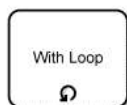
Quick Guide to BPMN Symbols

Tasks

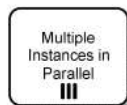
Standard



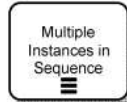
Un-typed or "abstract" task – most common task used



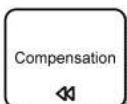
Task repeated until some condition met (as indicated by Annotation note)



Task repeated in parallel for a known number of times (e.g., "Committee Members Vote")



Task repeated in sequence for a known number of times (e.g., "Each Product Reviewed")



Task that compensates for an incomplete transaction by rolling back changes (e.g., "Cancel Shopping Cart Order")



Task calling an automated global process (e.g., "Calculate State Sales Tax")

Task Types



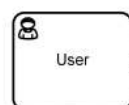
Automated function (e.g., application function or web service)



Sends a message to a Receive Task



Receives a message from a Send Task



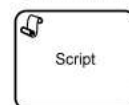
Requires user input through some technology



Requires user response without IT support

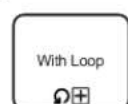


One or more business rules are applied



An automated script is followed to produce a result

Sub-Processes



Quick Guide to BPMN Symbols

Gateways



Exclusive

Exclusive – where ONLY ONE OF MANY paths must be taken
(Decision: yes / no)



Inclusive

Inclusive – where ONE OR MORE paths must be taken
(Condiments: ketchup, mustard, relish, no condiment)



Parallel

Parallel – where ALL paths must be taken
(Florida Vacation: book flight, hotel, and car)



Complex

Complex – where SOME BUT NOT ALL paths must be taken
(Employment Application: 2 references required from three possible sources)

Flows



Sequence Flow connects Tasks and Gateways and indicates order of process flow



Message Flow indicates information flowing from one Pool to another

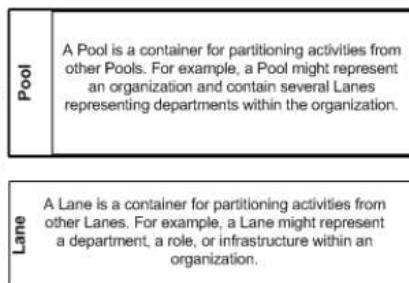


Data Association connects a Data Object to another object such as a Task or Sub-Task



Association connects text or an Artifact to another object such as a Task or Sub-Task

Swim Lanes



Artifacts



An Annotation conveys additional information about the process



A Data Object indicates what information is required or produced by an Activity



A Group logically associates multiple activities without affecting the process flow

Quick Guide to BPMN Symbols

Some Commonly Used Events

Classification and When to Use

Unspecified – when no specific event type is indicated

Start



Intermediate



End



Timer – when process requires a preset time to begin or continue, or when delay is necessary



Conditional – when some criteria must be met



Error – when an error occurred



Message – when a message or materials object is sent (throw) or received (catch)



Throw



Catch



Link – when flow continues to another page



Throw



Catch

Cancel – when the process should be stopped



Terminate – when the process ends abnormally

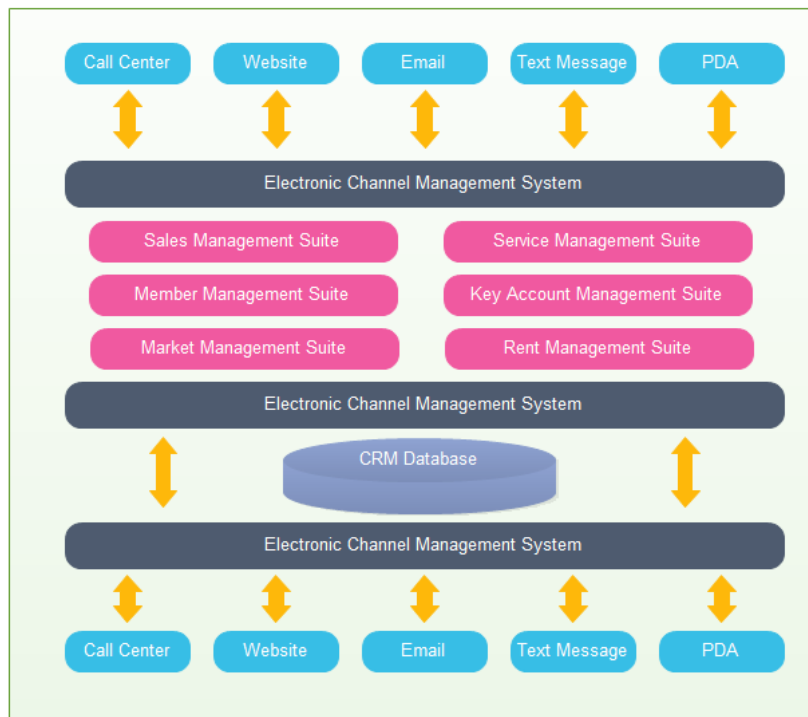


Additional Events Types exist for "escalation", "compensation", "signal", "multiple", and "parallel multiple"

Application Architecture

Applications architecture is the high-level structure of an application system. It's the process of defining a structured solution that meets all the technical and operational requirements while optimizing common quality attributes such as performance, security, and manageability.

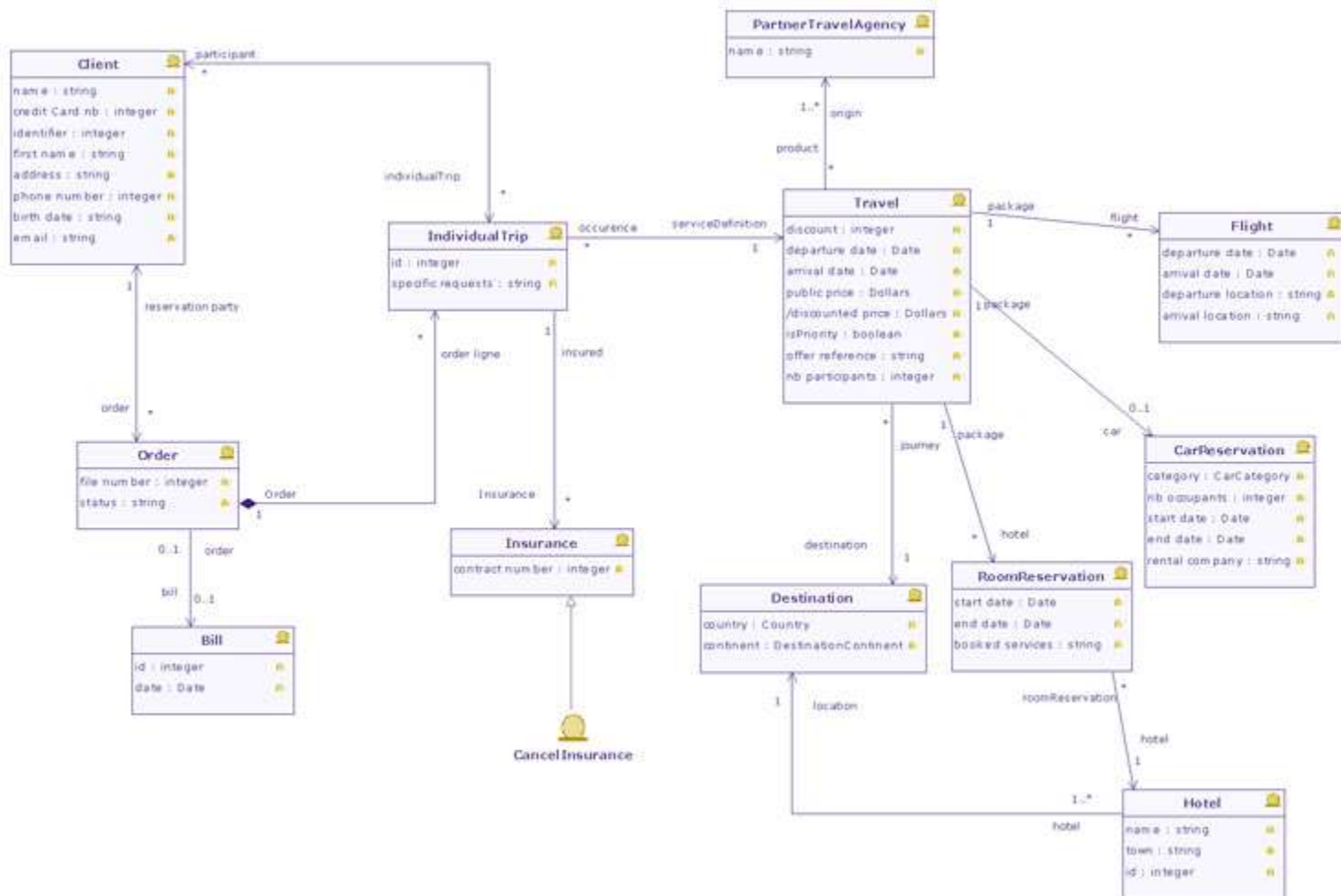
Example:



Data Architecture

Class diagrams

The key purpose of the **class diagram** is to depict the relationships among the critical **data entities** (or classes) within the enterprise. This diagram is developed to clearly present these relationships and to help understand the lower-level data models for the enterprise.



Technology Architecture

An **environments and locations diagram** depicts which locations host which **applications**, identifies what technologies and/or applications are used at which **locations**, and finally identifies the locations from which **business users** typically interact with the applications. This diagram should also show the existence and location of different deployment environments, including non-production environments, such as development and pre-production.

