Event Model

The Event Model is a description of the future application according to the external events (business transactions and timed events) that it will process and the application's responses to those events. The Event Model is created as part of a requirement analysis. For applications that process transactions, the Event Model is the main driver of business process design.

I. IPT Name:		
II. Deliverable Name: Event Model		**Date Completed:**
III. Contact Information		
	Name	Channel Unit
IPT Sponsor		
Channel Task Manager		
CIO Task Manager		
Contractor Task Manager		
IV. Task Order Number:		

Description

The Event Model is made up of three deliverables:

- Entity Life Cycle Diagram
- Event-Stimulus-Response Description
- Event Definition

Entity Life Cycle Diagram

The Entity Life Cycle Diagram describes the valid actions that cause the entity to make a transition from one state to another. It models those entities whose state or condition varies with processing. For those entities whose states are variable, this diagram illustrates how the entity will be affected and how it will affect processing. Use this diagram to model the behavior of those entities whose responses to events vary according to the state or previous history of the entity.

Business rules and conditions drive the possible transitions between valid states of the entity.

Do not create Entity Life Cycle Diagrams for an entity whose only state variable is its existence, and whose only transitions are "create," "update," and "delete."

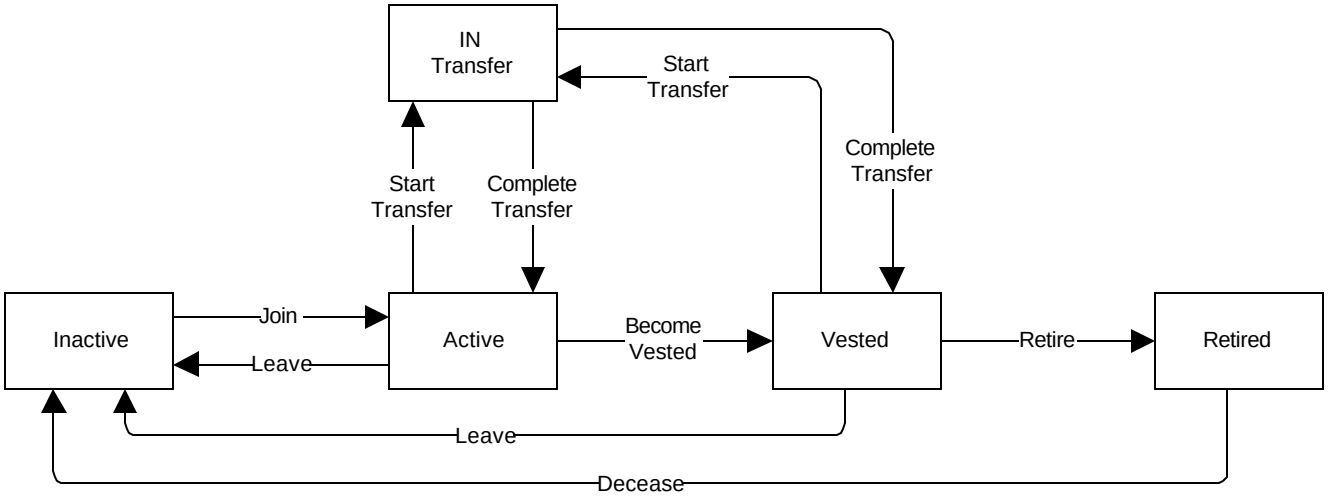
The Entity Life Cycle Diagram typically is created by the functional analyst or technical analyst.

Description

In the Entity Life Cycle Diagram, each box represents the state or condition of the entity at some time. The value of the entity's state variable at any time is determined by past events. This value also determines which events may legally happen to the entity. Arrows show the transition from one state to another, while the arrow labels indicate the event which caused the transition.
Entity Life Cycle Diagrams are useful whenever the entity to be analyzed can take on several states, and when the logic for accepting and processing transactions is complex and depends heavily on the state. They are excellent for analyzing how unpredictable sequences of events should be processed.

These diagrams also are useful for diagramming the behavior of applications with multiple message types that have complex processing and synchronization requirements.

A limitation of these diagrams is that they can represent only one state variable (or a principal state variable with subvariables for some of the states). When the entity being processed has two independent state variables, either two independent diagrams are required (each depicting a separate set of transitions), or the state variable on one diagram must be transformed into a single, two-dimensional variable.


IN
Transfer
Start
Transfer
Complete
Transfer
Start
Transfer
Complete
Transfer
Inactive
Join
Leave
Active
Become
Vested
Vested
Retire
Retired
Leave
Decease

Event-Stimulus-Response Description

The Event-Stimulus-Response Description identifies the business events that initiate the application processes. It serves as a basis for identifying dialogs, application interfaces, and other applications transactions. Use the Event-Stimulus-Response Description to identify each external event that will initiate processing within the application, and to describe in detail the origin, stimulus, and response to the event.

The Event-Stimulus-Response Description typically is created by the functional analyst.

Description

[1] Event ID - A number that uniquely identifies the event.

[2] Event Name (short) - The name of the event.

[3] Definition - A brief definition of the business event.

[4] Originating Entity - The name of the entity originating the event.

[5] Process Affected - The name of the process affected by the event.

[6] Stimulus Definition - A brief definition of the action or agent that causes the event to become known to the application.

[7] Stimulus Data Content - A listing of the data required from the originating entity for the application to process the event.

[8] Response Definition - A brief definition of the response to the event.

[9] Receiving Entity - The name of the entity receiving the event.

[10] Response Data Content - A listing of the data created by the process that handles the event, and provided to the receiving entity.

In this case, an event is defined as an occurrence that is of interest to the application (it should not be confused with a widget event used in window design). The application first learns of the event via a stimulus, and then responds in a prescribed way to the event. Since an event affects application entities, the Event-Stimulus-Response Description lists the entities involved. In this way, the description can be related to the Entity Life Cycle Diagram object.

To be effective, the Event-Stimulus-Response Description must contain the following pieces of information:

- **Event Definition**: The event should be clearly identified and defined. The Event Name may also be found on a related Entity Life Cycle Diagram.
- **Stimulus Description**: The origin of the event, and the stimulus by which the process will recognize the event, are described. To completely describe the stimulus, the originating entity, and the data content passed from the originating entity, should be determined.
- **Response Description:** The application's response to the stimulus is described. This information should include the data passed as the response and the entity receiving the response. The originating and receiving entities may or may not be the same.

Event-Stimulus-Response Description Sample - CHANGE OF WITHHOLDINGS

DATE: 3/5/93
PREPARED BY: UserX
[1] EVENT ID: {Event.EVT010}

[2] EVENT NAME [SHORT]: Employee changes withholding

[3] DEFINITION: Employee desires to change amount of tax withheld from paycheck

[4] ORIGINATING ENTITY: {External Entity.Employee}

[5] PROCESS AFFECTED: {Process.Maintain Personnel Database}

[6] STIMULUS DEFINITION: Modified W-4 form is submitted to application

[7] STIMULUS DATA CONTENT: Social Security Number, Personnel Number, Number of Deductions {Data Flow.W-4]

[8] RESPONSE DEFINITION: Acknowledgment and updated Personnel Database

[9] RECEIVING ENTITY: {External Entity.Employee}

[10] RESPONSE DATA CONTENT: Updated number of deductions {Data Flow.Deductions}

Event Definition

The Event Definition describes the events which trigger, or are created by, some form of processing within the architecture. The Event Definitions either can be created stand-alone as described in this document, or created as part of a larger deliverable (e.g., the Event / Process / Information / Application Operation Model). Use this deliverable to define each event indicated in the Event / Process / Information / Application Operation Model, and also each event in the Event / Function / Data Model during the Planning stage of a project. Typically, there can be other information recorded about the events. Whether or not they are recorded will depend on the circumstances of the specific project.

This deliverable can be used to gain consensus that all key business events to be supported by the architecture have been correctly identified. For example, if one of the key objectives of a retailer is to maximize stock availability in his or her stores, the events used to model the business processes should focus on those processes that contribute to store stock availability, e.g., stock adjustment, manual stock count, etc. Analysis of who triggers events is also helpful in determining which business representative groups are associated with a set of events which will further assist in identifying the related service characteristics for the event.

Description

Details Section describes the nature of the event and its trigger. The Event Type indicates how an event is triggered and the Trigger Type indicates who triggers the event.

Metrics Section provides an analysis of how frequently a business event is likely to occur can be valuable input to determining the first cut business volumes that will ultimately need to be supported by the architecture being planned.

Event Definition

General

Type:	Event Definition
Version number:	1.0
Version labels:	1.0 CURRENT

Created:	12/01/97 06:03:52 PM
Modified:	12/01/97 06:03:55 PM
Last modified by:	UserX
Created by:	UserX

Summary

Name:	Fax Order
Title (Description):	A customer order that comes in via fax machine

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Keywords:

Details

Previous state:	
Next state:	
Event type:	Fax
Trigger type:	Customer

Information Structure Definition

Name:	Fax Order Structure

Metrics

Distribution:	Triangular
Minimum:	20

Average:	30
Maximum:	60
Std. deviation:	
Period:	Minute
Batch volume:	1
Input cost:	2
Cost unit:	US Dollar

Additional Information

The following section can be used to provide additional information. It is free text only and will not be stored in the associated property pages.