

## Definition Elements for the Fast Flower Delivery Use Case

*All Listings are expresses in the definition language defined in the book, we plan an appendix that will contain code samples from existing languages in different styles (e.g. script oriented, rule oriented, SQL extension) to exemplify the various approaches.*

### Listing 4.6 – Definition elements of raw event types

```

Definition Element of Event Type Delivery Request
Header
Attribute Name           Attribute Value
Event Type Identifier      Delivery Request
.
Payload
Attribute Name           Data Type           Semantic Role
Request Id                 Integer              Common attribute
Store                      String               Reference to Store Table
Addressee's Location       Point
Required Pick-up time      Time stamp
Required Delivery Time     Time stamp
Minimum Ranking            Integer

Event to event relations
Retraction Event           Delivery Request Cancellation

```

**Note that this event type has two temporal attributes of type time stamp. Since the default chronon for the application is 1 minute the pick-up and delivery times are designated in minutes. The addressee's location is a point in space.**

```

Definition Element of Event Type GPS Location
Header
Attribute Name           Attribute Value

```

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Event Type Identifier      GPS Location

Payload

<b>Attribute Name</b>	<b>Data Type</b>	<b>Semantic Role</b>
Driver	String	Reference to Driver Table
Driver's Location	Point	Reference to Coordinate System

**The Driver's Location is of a data type point and it is assumed that the system has a 2D coordinate system stored in its global state that it refers to.**

Definition Element of Event Type Delivery Bid

Header

<b>Attribute Name</b>	<b>Attribute Value</b>
Event Type Identifier	Delivery Bid

.

Payload

<b>Attribute Name</b>	<b>Data Type</b>	<b>Semantic Role</b>
Request Id	Integer	Common attribute
Store	String	Reference to Store Table
Driver	String	Reference to Driver Table
Committed Pick Up Time	Time Stamp	

Definition Element of Event Type Manual Assignment

Header

<b>Attribute Name</b>	<b>Attribute Value</b>
Event Type Identifier	Manual Assignment

.

Payload

<b>Attribute Name</b>	<b>Data Type</b>	<b>Semantic Role</b>
Request Id	Integer	Common attribute
Store	String	Reference to Store Table
Driver	String	Reference to Driver Table
Addressee's Location	Point	
Required Pick up time	Time stamp	
Required Delivery Time	Time stamp	

Event to event relations

Event Generalization	Assignment condition = always
Retraction Event	Delivery Request Cancellation

Definition Element of Event Type Pick up Confirmation

Header

<b>Attribute Name</b>	<b>Attribute Value</b>
Event Type Identifier	Pick Up Confirmation

.

Payload

<b>Attribute Name</b>	<b>Data Type</b>	<b>Semantic Role</b>
Request Id	Integer	Common attribute
Store	String	Reference to Store Table
Driver	String	Reference to Driver Table

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Definition Element of Event Type Delivery Confirmation

Header

<b>Attribute Name</b>	<b>Attribute Value</b>
Event Type Identifier	Delivery Confirmation

Payload

<b>Attribute Name</b>	<b>Data Type</b>	<b>Semantic Role</b>
Request Id	Integer	Common attribute
Driver	String	Reference to Driver Table

Definition Element of Event Type Delivery Request Cancellation

Header

<b>Attribute Name</b>	<b>Attribute Value</b>
Event Type Identifier	Delivery Request Cancellation

Payload

<b>Attribute Name</b>	<b>Data Type</b>	<b>Semantic Role</b>
Request Id	Integer	Common attribute

**Listing 5.1 Producer type definitions**

Definition element of Producer type Store					
Producer Category	Definition Element Type	Producer Identifier	Output Terminal	Event Type	Targets
Human	Producer Class	Store	Send Delivery Request	Delivery Request	Delivery Request Channel
			Report Manual Assignment	Manual Assignment	Assignment Channel
			Confirm Pick-up	Pick-up Confirmation	Pick-up confirmation channel
			Request Cancellation	Delivery Request cancellation	Delivery Cancellation channel

**Note that in our example each of the stores' output terminals is wired to a separate channel. We have chosen to use separate channels for each event type, with the exception of the Assignment channel which is used for both Manual and Automatic assignments,**

Definition element of Producer type GPS Sensor					
Producer Category	Definition Element Type	Producer Identifier	Output Terminal	Event Type	Targets
Sensor	Abstract Type	GPS Sensor			

Definition element of Producer type Vehicle					
Producer Category	Definition Element Type	Producer Identifier	Output Terminal	Event Type	Targets
GPS Sensor	Producer Class	Vehicle	Report Location	GPS Location	GPS Channel

**This producer belongs to the category of GPS sensor, which has been defined as an abstract producer type in the previous definition element.**

Definition element of Producer type Driver					
Producer Category	Definition Element Type	Producer Identifier	Output Terminal	Event Type	Targets
Human (via handheld device)	Producer Class	Driver	Bid for Delivery	Delivery Bid	Delivery Bid Channel
			Confirm Delivery	Delivery Confirmation	Delivery Confirmation Channel

**Delivery confirmation is produced by the Driver's handheld device, but requires signature of the delivery recipient**