

**Airline Industry Data Model**

*Business Contextual Model Guidelines*

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**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Name** | **Description of change** |
| 0.1 | 13 Jan 2015 | Peter Neumann | First draft |
| 0.2 | 28 Jan 2015 | Peter Neumann | After a first review |
| 0.3 | 11 Oct 2019 | Michael Thomas,  Jean-Christophe Cornu | Updates on Business Pillars for Airline value chain and Participants |
| 0.4 | 11 Dec 2019 | Michael Thomas,  Jean-Christophe Cornu | Further updates on Business Pillars |
| 0.5 | 07 Jan 2020 | Jean-Christophe Cornu | Minor corrections after internal review |
| 0.6 | 24 Mar 2020 | Jean-Christophe Cornu | Minor correction on section 4 for participants |
|  |  |  |  |

# Introduction

## Document Purpose and Intended Audience

The purpose of this document is to describe how to develop the Business Contextual Model, i.e. the contextual layer of the business pillar (partition “B1”), of the airline industry data model.

The intended audience of this document are all individuals involved in developing the model, mostly:

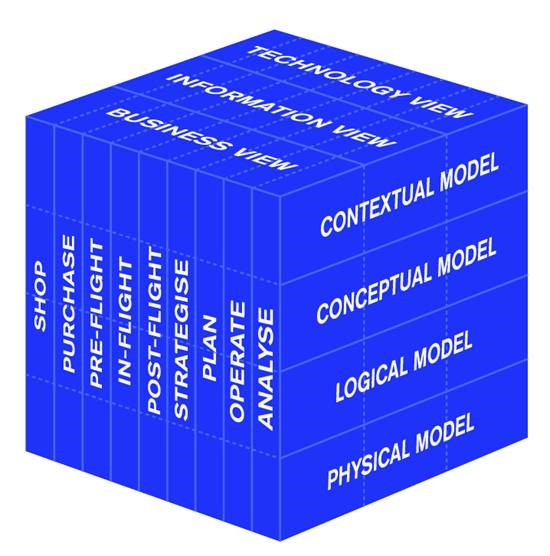
* members of PSC (Passenger Standards Conference) standards work-groups developing or expanding the LDM as part of BRD development,

These individuals have a variety of profiles including Airline and IT supplier Business Analysts and Enterprise Architects.

## Document Context

The Airline industry data model is to be published by IATA as a foundational layer for the development of airline messaging standards in XML or any other data format that may emerge in the future.

The data model is structured in 3 pillars (Business, Information, Technology), 4 layers (Contextual, Conceptual, Logical, Physical), and operational stakeholder views. A separate guideline document will exist for each of the 12 partitions defined by the pillar and layer.



The data model uses UML and as a tool Sparx Enterprise Architect (EA). The first 3 layers are platform-independent.

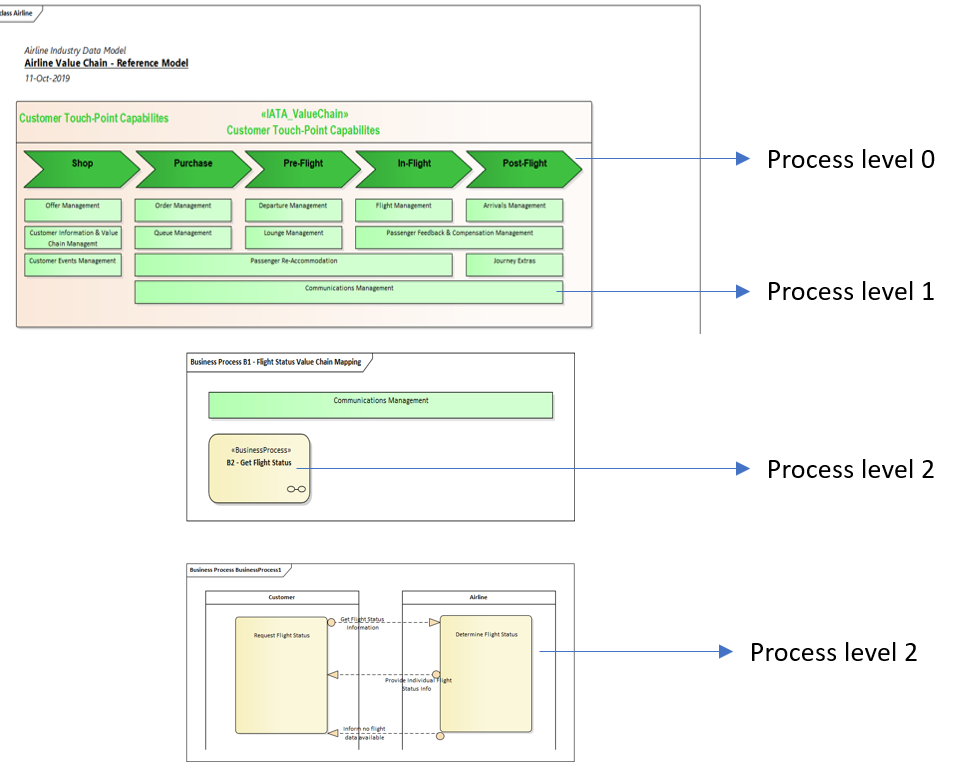
The present guidelines will therefore be (partly) EA specific, but agnostic to the target messaging standard (e.g. XML).

# Overall Approach to Business Modeling

The content of this chapter is the same for all Business pillar guidelines (B1, B2, B3) to introduce the business modeling approach from the Airline Value Chain (top level) model with the main Business capabilities.

## Definition of Levels

As a fundamental concept used in this Business Architecture the following picture shows the different process levels with their definitions. This concept is derived from the Business process reference architecture model.



Process Level 0 (Primary Activity)

Shows the Domain Primary Activities which have the goal to create value that exceeds the cost of providing the product or service.

Process Level 1 (Process Area):

Shows a Business Process area for a specific business purpose.

The Business Domain Model is the modeling starting point and the highest-level model type. It shows the business domains and clusters the subdomains into these business domains.

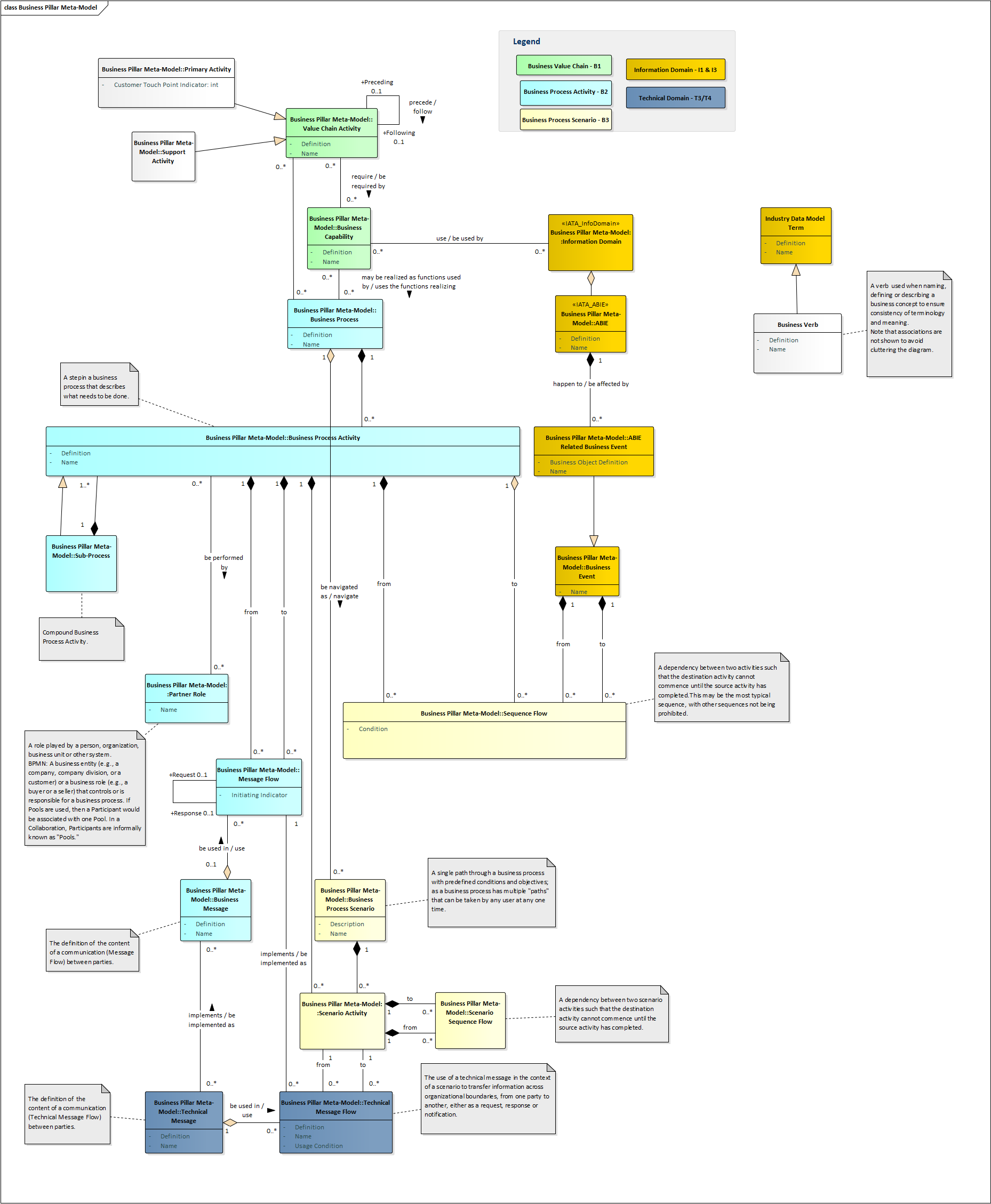
Process Level 2 (Business Process Activity Diagram):

Shows the root level for a specific business process activity purpose.

This is where the Business modeling starts describing the Business capabilities using Business Process Notations workflow

## Business pillar to Information & Technology pillar Connections

The following diagram available in AIDM Enterprise Architect represents the Business metamodel and how business information is linked to the Information pillar and the Technology pillar.

The following picture shows the main artefacts and how they are connected between the Business (green and light blue & yellow), Information (yellow) and Technology (dark blue)l

## Upfront vs progressive Modeling of Content

The actual content of the Business Architecture will be created using 2 complementary approaches:

Upfront Modeling

* The content of the Value Chain is be provided as initial model.
* The content of the Process Level 1 diagram made up of the Value Chain process areas is provided as initial model.

Progressive Modeling

* All other content will be created by the work-group BRDs during their projects, as well as additions or updates to the upfront created content.

# Modeling the Value Chain Diagram

## Modeling Artifacts

### Artifact Usage

The Value Chain Diagram shows a chain of primary activities and their process areas that a firm is operating in the airline industry performs in order to deliver a valuable [product](http://en.wikipedia.org/wiki/Product_(business)) or [service](http://en.wikipedia.org/wiki/Service_(economics)) to the [market](http://en.wikipedia.org/wiki/Market_(economics)).

### Artifacts and Properties

This chapter explains which Artifacts needs to be used and which attributes of the Artifacts need to be filled.

|  |  |  |  |
| --- | --- | --- | --- |
| **Artifact** | **Stereotype** | **Description** | **Properties (and example)** |
| Value Chain | IATA\_ValueChain | The Value Chain is reflecting a Business model Canvas with capability and strategic overlay | * Name: Name of the Value Chain   (e.g. Airline) |
| Business Primary Activity | IATA\_Primary Activity | Business Primary Activity is the entry point of the Business Activities | * Name: Name of the Business Activity Domain Model   (e.g. Shop, Order…) |
| Business Support Capability | IATA\_Support Activity | Business Support capability is the location where to describe Business Processes capability details for a specific business purpose. | * Name: Name of the Business Process Area (e.g. Order (e.g. Reservation   Management)   * Element Notes: List Business capability detail within a specific process Area (e.g. Booking   Management) |

### Artifact Rules and Quality Assurance

The Value Chain Diagram has been defined upfront by ATS Board, when necessary, change of the description, content definition or missing capabilities can be updated after review and adoption by the respective change management board.

## Modeling Associations

Not applicable.

## Views / Diagrams

The diagram and all its Artifacts need to be created in the Governance View.

|  |  |  |  |
| --- | --- | --- | --- |
| **Diagram** | **Stereotype** | **Toolbox** | **Properties** |
| Value Chain Diagram | IATA\_  ValueChainDiagram | IATAML | * Name: Name of the Diagram   (e.g. Airline Value  Chain)   * Type: Value Chain Diagram |

Below is shown an example of the Airline Value Chain diagram.

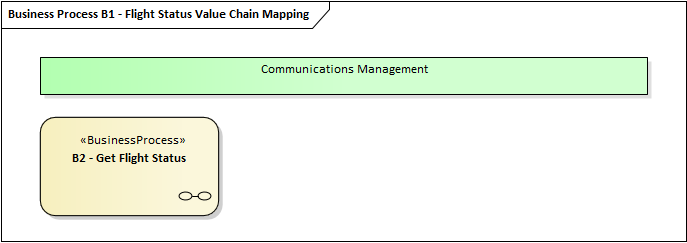


## Mapping to the Value Chain

As explained in previous chapter 2.3 for progressive approach, each project will be requested to identify the main Business Capability when starting the Business process activity and keep a local copy in the Operational node.

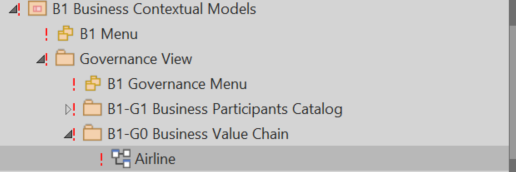
This will facilitate global understanding where is the entry point of the Business impacts and can also be used later to document Business Requirement document.

For example, project like “Flight Status” is mapped to “Communication Management” Business Capabilities under Pre-Flight \ In-flight \ Post-Flight.

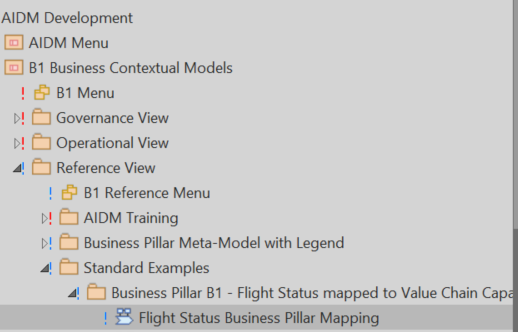


## Package Structure

There is only one Airline Value Chain Diagram occurrence in the entire Data Model.



Example of selected Business capability for a standard example for “Flight Status” defined in the References View node, while new project will have their own mapping created in the corresponding Process Area in the Operational View node.



# Modeling Business Participant Catalog

## Modeling Artifacts

### Artifact Usage

Each Participant name to be created using standard BPMN 2.0 “Pool” Stereotype and edit Participant name and fill in “ParticipantRef” selecting the participant with the same name.

A Business Participant Catalog shows the collection of all business relevant Participants is available for standard example in the Governance View node.

### Artifacts and Properties

This chapter explains which Artifacts need to be used and which attributes of the Artifacts need to be filled.

|  |  |  |  |
| --- | --- | --- | --- |
| **Artifact** | **Stereotype** | **Description** | **Properties (and example)** |
| Business Participant | Pool | Business participant is to define the ownership of the Business Activity defined within a Pool Boundaries. | * Name: Name of the Business Participant * Element Notes: Definition of the participant specific role. |

### Artifact Rules and Quality Assurance

Not applicable.

## Modeling Associations

Not applicable.

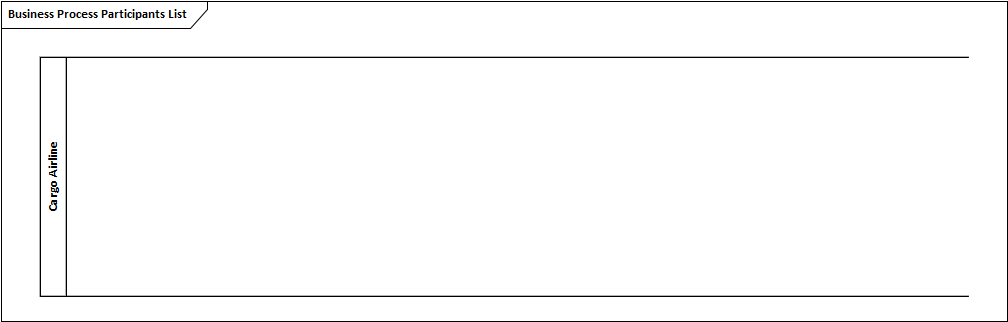
## Views / Diagrams

The project will need to identify all active Participants from existing Business Participants Catalog and

Create the diagram and all its artifacts in the Operational View node.

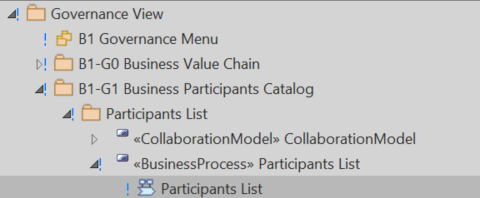
|  |  |  |  |
| --- | --- | --- | --- |
| **Diagram** | **Stereotype** | **Toolbox** | **Properties** |
| Business Participant Catalog | Pool | BPMN 2.0 -Pool | * Name: Name of the Business Participant Catalog   (e.g. Customer, Cargo Airline)   * Type: Business Process * Diagram Notes: Participants used in Airline Business activity. |

Below is shown an example of the diagram with example content, how a model should look like.



## Package Structure

There will be one Package for the Business Participant Catalog.



# Annexes

## Third Party Standards

**BPMN 2.0 :**

BPMN 2.0®, an Open Group Standard, is an open and independent modeling language for enterprise architecture that is supported by different tool vendors and consulting firms. BPMN 2.0 provides instruments to enable enterprise architects to describe, analyze and visualize the relationships among business domains in an unambiguous way.

http://www.opengroup.org/subjectareas/enterprise/BPMN 2.0

**UML :**

The Unified Modeling Language™ - UML - is [OMG](http://www.omg.org/)'s most-used specification, and the way the world models not only application structure, behavior, and architecture, but also business process and data structure.

<http://www.uml.org/>

## Glossary of this document

|  |  |
| --- | --- |
| **Term** | **Description** |
| ABIE | Aggregated Business Information Entity |
| AIDM | Airline Industry Data Model |
| BPMN | Business Process Model and Notation |
| BRD | Business Requirements Document |
| DMTFG | Data Model and Tooling Focus Group |
| EA | Enterprise Architect |
| IATA | International Air Transport Association |
| OMG | Object Management Group |
| PSC | Passenger Services Conference |
| UML | Unified Modeling Language |
| XML | Extensible Markup Language |