

# AVITRACK



Task 1.1  
Apron's activities  
analysis  
UML model

**Abstract:**

Aprons activities are listed and analysed to create a representative model concerning the handling operations, which will be observed by the Avitrack System.

# 1 Objectives of the UML models

The objective was to obtain an exhaustive description for the subsequent model creation. The model has three major objectives:

- To constitute the basic support for the operations' descriptions.
- To offer a common support to structure the expression of needs of the end-users.
- To build the first step, the next task concerning the “formalism” used by the “intelligent artificial understanding” process.

One main activity performed by the contractors during this phase was to describe, understand and assimilate all the observations made in airport operational areas, thanks to airlines cooperation.

It was decided to use UML models because it is possible to have both global and detailed point of view of the handling operations.

## 2 The models

To analyse each apron operation, each action on flow is described using an **activity diagram**.

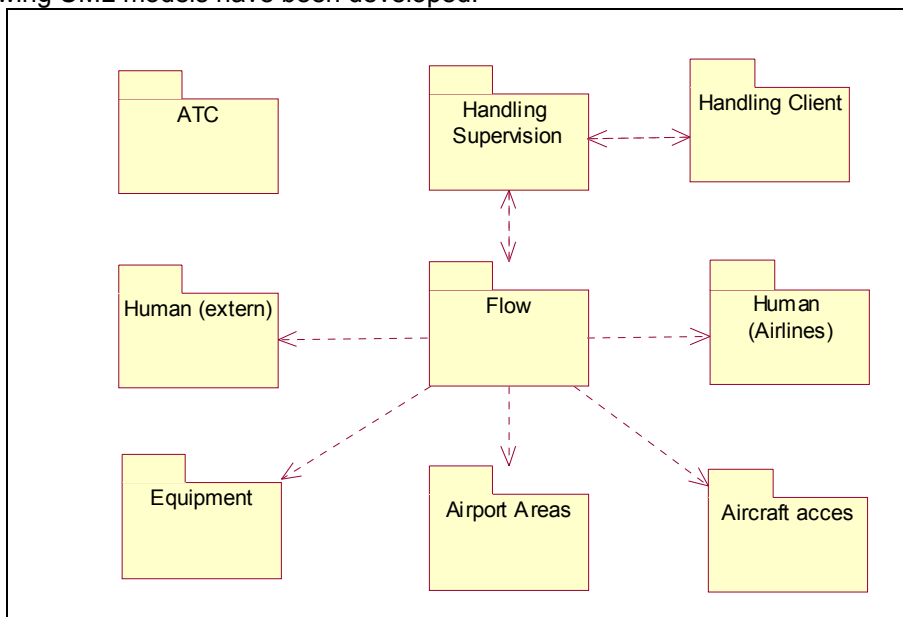
The construction of “Activities model design” makes it possible to understand the relations between main “actors” on the apron area and the handling operations functionalities.

### 2.1 Static elements

Static elements of the apron are inventoried.

- Handling Client
- Handling supervision
- Flow
- Airport Areas
- Equipments / vectors
- Aircraft contact points
- Human (extern)
- Human (Airlines)
- ATC : Air Traffic Control

So, the following UML models have been developed:



For each element a diagram was developed. In addition, the UML model identifies the flow between the specific equipments. It describes the flows from a particular airport area to another.

## 2.2 Dynamics elements

The activity diagram illustrates the evolution of each operation on the apron area.

Succeeding, the dynamics elements are describe in the following UML models:

- Generic Diagrams
  - Loading Generic Diagram
  - UnLoading Generic Diagram
  
- PETROL operations
  - Petrol loading Diagram
  - Petrol loading Sequence
  
- CONTAINERS operations
  - Containers loading Diagram
  - Containers loading Sequence
  - Containers Unloading
  - Containers Unloading Sequence
  
- BAGAGES operations
  - Bagages loading
  
- PASSENGERS operations
  - Passengers Boarding
  - Passengers unboarding

## 3 Results

The enumeration and the analysis of the Aprons activities made it possible to create a representative model concerning the handling operations.

The apron activities UML model reaches its three objectives to become the description utility, the reference to structure the end-users needs, to guide to the operations understanding.