

Job Description

Title

Optimize aircraft maintenance planning to support decision for airline operations

Team description

[Amadeus](#) has one of the largest transactional systems globally, with over 1 billion passengers using our systems each year. We are present in over 1,300 airports, 190 countries, with 435 airline carriers and 11 000 organizations using our IT solutions.

At Amadeus, our team is on charge of the design and the implementation of an innovative application to manage flight operations for the airline industry. This includes prospective work for investigating new areas of development.

Subject

The aircraft maintenance planning is one among the major decisions an airline has to make during its operation. Although maintenance scheduling comes as an end stage in an airline operation, it has potential cost savings.

Before planning maintenance tasks, Airlines usually create the schedule of their flights by sequentially answering the following questions:

1. First, airlines decide which market to serve with which frequency and which capacity. The output of this first step is the network planning defining all the flights that will be operated by the airline.
2. Then the airline performs the fleet assignment, where the different flights are defined to be operated by a fleet of aircraft depending on the capacity of the routes, or the range of aircraft of that fleet.
3. Finally comes the tail assignment where a physical aircraft is assigned to sequence of flights. All these steps may modify the result of the previous one in order to return a feasible solution and eventually to improve the overall solution.

In order to guarantee flight safety and respect aviation regulations, aircraft must periodically undergo several kind of planned maintenance checks, or unplanned repair for unexpected failures.

This problem, easy to understand, difficult to solve, aims at anticipating and limiting the risk of overdue maintenance. This reduces the risk for the aircraft to be grounded, maximizes aircraft available time and limits the number of maintenance checks to be conducted. The end goal is to optimize aircraft and fleet utilization and reduce the costs incurred when assigning flights to different aircraft after some disruption.

The objective of this internship is to enhance the current aircraft maintenance planning optimizer and to conduct several studies on the business behavior and the impact on the airline operations.

The result of the internship will make possible the design of new optimization algorithms or can be used as proof of concepts for new decision support functionalities for our customers.

The trainee will be in charge of the following activities:

- State of the art
- Data gathering and analysis
- Optimization models implementation and refinement

Required skills

- Programming
- Operations research
- Analytic skills

Personal required skills

- Scientific and technical curiosity
- Creativity
- Written and spoken communication in English

Programming skills

- Java

Target audience

- Last year student

Have you ever wondered who cancels a flight? Why your flight is delayed? Why you missed your connection?

We are at the core of all those decisions, and we are quite successful in reducing impacts on you, the traveller. You might enjoy reading [this news article](#), it talks about your future team.

By applying state of the art analytics we provide Qantas with a decision support tool that helps the airline to get you home safe and on-time.

Join Amadeus and help us with your enthusiasm to go beyond what we already achieved.

To apply for this internship, please send your CV to: mohamed.rbaia@amadeus.com.

