



OPENJET

DESIGN AND BUILD OF A SCHEDULING ENGINE FOR THE OPENJET BUSINESS AVIATION OPERATIONS PLATFORM



Aim:

To boost profitability by responding rapidly to booking requests and offering the keenest price

Solution:

Optimization integrated into the OpenJet platform

Results:

- new bookings are inserted into an existing schedule within seconds
- reduction in the number of empty legs
- optimized staffing through the creation of crew duty days
- confirmation of flight availability in under 10 seconds
- contingency rescheduling in under a minute



“By turning to EURODECISION, we effectively tapped into years of business expertise that as a fledgling innovative company we could never have internalized. Their experts showed us the potential of algorithms, and sometimes exceeded both our expectations and those of our customers. Having a renowned partner in EURODECISION lent credibility to our project.” Pierre LAVAUX, Development Director, OpenJet

The OpenJet suite, which was designed for use by private and business aviation operators concentrates all the tools that cater for the industry professionals needs from flight sales to flight operations on a single SaaS platform.

OpenJet, which when it was launched, came as a breakthrough to this sector where digitalization is in its infancy, aimed to streamline business airlines' scheduling tasks to boost their profitability. The latter is linked to the ability to provide fast response to booking requests, while checking that the flights are feasible and fine-tuning the pricing. Manual schedule building

(for pilots and aircrafts) factoring in the many regulatory constraints is very time-consuming and prone to errors.

In 2014, OpenJet came to the conclusion that it needed an algorithmic solution. It commissioned EURODECISION, the business analytics specialist and respected constraint-based scheduling expert, to integrate optimization into its platform. The teams worked together well right from the start. OpenJet revealed its needs and the specifics of business aviation, while EURODECISION provided its algorithmic skills and converted business scheduling issues into a mathematical problem.

The optimization engine uses heuristics to determine the best solution for inserting a new booking into an existing schedule in a very short time lapse (just a few seconds). Once the aircraft is assigned to a flight itinerary comprising several legs, the tool can create crew duty days that comply with the regulations.

An exercise was run to compare the algorithm's proposals with manually-drafted flight schedules. The business airline Wijet, agreed to trial the tool and appraise the first results. After adjustments, the scheduling solutions delivered by the platform were not only found to be more robust than those of the planners, but also displayed a clear reduction in empty legs and suitable staffing levels.

As OpenJet can confirm the availability of a flight in under 10 seconds and produce a solution in under a minute if rescheduling is required by a contingency (pilot unavailable, mechanical fault on an aircraft), it is also a boon for responding to booking requests in real time. Implementation of the online booking module, for example on their websites, enables taxi-jet companies to operate their own sales channels and thus reduce dependency on brokers.

In a short space of time, several airlines expressed interest in the smart management platform whose optimization engine can be tailored to match their specifics. Today, tens of them are using at least one of its modules and the scheduling algorithm is queried several hundred times a day.

OpenJet and EURODECISION are looking into other opportunities that have attracted interest from the various airlines, such as deeper integration of self-learning artificial intelligence technologies to factor in the specifics of an airline and its fleet. Additionally, OpenJet wants to extend use of the platform to private helicopter operators by 2019. The distinctive nature of their booking and maintenance issues will involve the integration of new constraints. However, a tool of this kind could really boost their productivity.