

# Turning the tide on turnaround inefficiencies

During a pilot project in collaboration with British Airways, Assaia's Apron AI has proven its ability to optimize the turnaround process through the creation of structured data from ramp video using Artificial Intelligence.

## **The Challenge: Efficient turnarounds are key for the future of aviation.**

Over the last two decades, the number of air traffic movements has increased drastically. Over the next 20 years, Airbus and Boeing predict another 110% increase<sup>1</sup>. With capacity already being constrained and expansion of infrastructure being both expensive and time consuming to realise, operational efficiency will be key to accommodate this growth.

Efficiency is especially crucial in the aircraft turnaround process because it is a major source of delays. The U.S. Bureau of Transportation Statistics (BTS) reports that almost 30% of all aircraft delays are caused by turnaround activities<sup>2</sup>. With an average cost of EUR 81 per delay minute<sup>3</sup>, these delays pose a serious threat to the bottom line of airline companies and a significant bottleneck for airport operators to maximise their asset productivity.

## **The Technology: Artificial Intelligence algorithms produce data needed for optimization.**

To address this problem and turn the tide on turnaround inefficiencies, we use Artificial Intelligence (AI) algorithms. Our AI analyses video streams from gates and ramps to generate relevant structured data. These data consist of events like: plane stationary, GPU connected, catering started, pushback truck on apron, etc. Data are generated in real time and can therefore be used on the apron while handling the plane, as well as afterwards to perform historical analysis.

## **The Application: British Airways' Aircraft Dispatch Managers use real time data on the stand.**

During a pilot project at Heathrow Airport, we worked closely with BA's Aircraft Dispatch Managers (ADMs) to test the use of real time data in turnaround operations. The role of the ADM is the coordination of activities during the turnaround process. It is their responsibility to make sure a plane is leaving the position on time.



*"We are always looking for ways to make the ADM role more future-proof by using new technologies."*

Chris Wright, Business Development Manager at British Airways

To be successful, an ADM requires a bird's eye view, which they previously obtained by physically moving around the apron. While they move around the apron, ADMs try to identify and record whether handling activities start in accordance with the Precision Time Schedule (PTS). If there is a deviation from the PTS, the ADM will take action to minimise the effect of this deviation of the on-time-departure of the respective aircraft.



The data generated by the AI were presented to the ADMs in a real time dashboard which they accessed on their iPads. During the trial, the usage of the application was observed and additional insights were gained through interviews.

# Turning the tide on turnaround inefficiencies

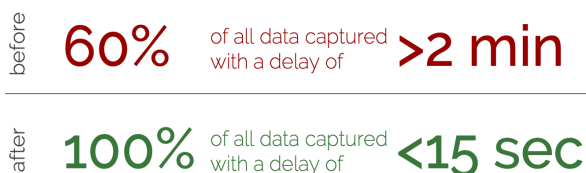
## Finding 1: Assaia's solution significantly outperforms manual data collection.

We found that, on average, when working manually, ADMs managed to record 60% of all relevant data from turnarounds. Furthermore, we have observed an average delay of several minutes between a PTS event occurring and the ADM recording it.

Accurately observing PTS events and recording the data is hampered by the fact that the ADMs are distracted by other responsibilities. It is important to note that failing to observe a PTS deviation also implies that corrective action cannot be undertaken.

*"Sometimes you can't record anything."*

In contrast, the Assaia AI is fully dedicated to observing such deviations. During the trial we managed to capture 100% of the data with an average latency of only 15 seconds.



By using the Assaia Apron AI we relieve the ADMs of the task to continuously look for PTS deviations and enable them to focus more on actual deviations.



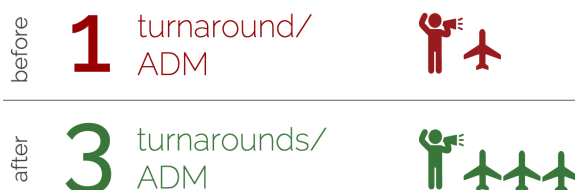
*"I will call [the business partners], because PTS is tight anyway. If they don't follow the PTS, it can have an impact on the departure."*

Mangal Mahi, Aircraft Dispatch Manager at British Airways

The reduction in detection delay and increase in the number of detected deviations leads to an increase of corrective actions and a decrease of delay minutes.

## Finding 2: Turnaround AI can boost ADM productivity significantly.

Currently, ADMs coordinate only one aircraft at a time. This one-to-one relationship exists because their responsibilities during the turnaround require their full attention.



*"The app allows us to move forward with our job, to work more efficiently."*

However, by leveraging the real time data from the Assaia AI, ADMs can focus on exceptions rather than needing to monitor everything. ■

Visit our demo now: <https://assaia.com/tmc>

### About the Author

Christiaan Hen has a background in International Business and Economics. He has spent his entire career in the aviation industry. Before joining Assaia, he held different positions within the Operations and Digital departments at Royal Schiphol Group. You can contact Christiaan at: [christiaan.hen@assaia.com](mailto:christiaan.hen@assaia.com).

### About Assaia

Assaia is a Swiss company with offices in the Silicon Valley. We combine our roots in computer vision and AI technology with many years of relevant aviation experience. It is our mission to make the apron a more efficient, safer and more sustainable place.

<sup>1</sup> [Airbus Global Market Forecast](#), [Boeing Commercial Market Outlook](#)

<sup>2</sup> [https://www.transtats.bts.gov/OT\\_Delay/OT\\_DelayCause1.asp?pn=1](https://www.transtats.bts.gov/OT_Delay/OT_DelayCause1.asp?pn=1)

<sup>3</sup> <https://www.eurocontrol.int/sites/default/files/publication/files/european-airline-delay-cost-reference-values-final-report-4-1.pdf>