12.9 Best Practice Guidelines for the Use of Data Analysis in the Slot Performance Process

The recommended best practices for the use of data analysis to facilitate the slot performance process at a Level 3 airport are outlined below.

- Data should be taken from the most accurate and consistent source available at the airport – this source is typically (but not exclusively) held by ATC or the airport managing body.
- This process can occur at the flight number, flight series, or individual company or carrier level.
- This process is the responsibility of the coordinator. However, the airport managing body should supply relevant data for this process to the coordinator. The coordinator may also request that the airport managing body share its own data analysis to assist the coordinator's review.
- The detection and subsequent prioritisation of engagements between the coordinator and the airline or other aircraft operator should be supported through data analysis methodologies that can target the most obvious and impactful offenders.
- Data from the previous equivalent season can be used to reduce the lead time for detection.
- The Slot Performance Committee or the Coordination Committee may provide guidance around the slot performance process. This guidance should be transparent, made publicly available, and communicated directly to all airlines or other aircraft operators serving the airport.

Scale and Consistency Principles

There exists no single prescribed methodology for analysing slot performance. However, consideration of the scale and consistency of potential slot misuse across any one flight number, flight series or carrier can support more effective engagements between the coordinator and the airline or other aircraft operator.

This principle of scale and consistency, when used as an approach to prioritise engagements, will help ensure that:

1. Limited resources across all stakeholders are targeted towards the most disruptive and repeated cases of potential slot misuse;
2. Airlines and other aircraft operators are less likely to be asked by the coordinator to justify potential slot misuse that relates to normal operational factors (since operational factors are rarely consistent);
3. Potential slot misuse that is due to normal operational factors is deprioritised in favor of potential slot misuse that is likely due to structural deficiencies in the schedule or operational behaviors.
4. It should be stressed that the application of scale and consistency principles to better target engagements is not a means of demonstrating the intent of the airline or other aircraft operator to misuse a slot. However, the principles do provide a basis for justifying further scrutiny and close engagement between the coordinator and the airline or other aircraft operator in question.
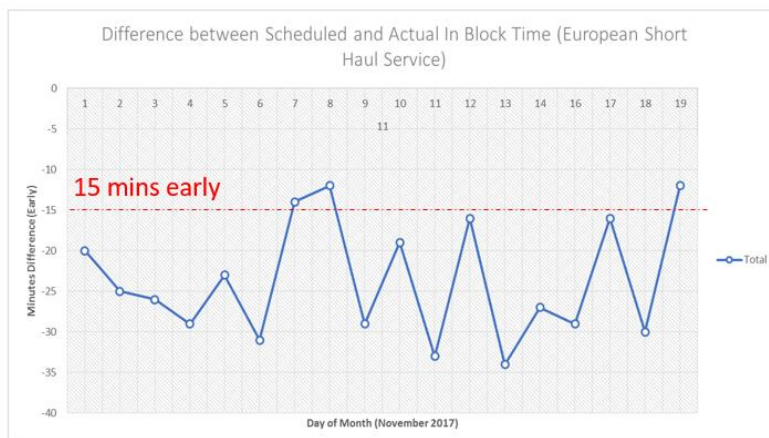
Example Methodology

The following example describes steps that could be taken by the slot performance process to prioritise engagements in line with scale and consistency principles. This example considers a deviation in time from the allocated slot, which is just one representative of the possible types of potential slot misuse.

Note that the following example methodology cannot be applied when flights cannot be grouped by a specific aspect (such as general and business aviation flights).

This example requires data which, at minimum, contains the Actual and Scheduled Time Stamps to be retained for each operated flight; specifically, this includes:

- Scheduled Off-Block Time (SOBT) or Scheduled In-Block Time (SIBT)
- Actual Off-Block Time (AOBT) or Actual In-Block Time (AIBT)

1) For a given period, calculate the average off-slot duration for any chosen grouping (e.g., by flight series, flight number, or carrier)
   a) For departures, the off-slot duration is the difference between the AOBT and SOBT.
   b) For arrivals, the off-slot duration is the difference between the AIBT and SIBT.
2) Calculate the standard deviation of the off-slot duration for the chosen grouping.
3) Identify the subset of groups in which the absolute value of average off-slot duration is greater than the tolerance to the schedule.
4) Prioritise this group by the largest average off slot deviation and the smallest standard deviation.
5) The list of flights / carriers / flight series (depending on how the data is grouped) that are prioritised in the manner described above will be the services that operate most consistently outside of the schedule tolerance.

An example of a flight that consistently operated more than 15 minutes early is illustrated below. The scale and consistency principle is aimed at prioritising monitoring efforts towards the identification and potential resolution of cases such as this. The example flight was presenting to the terminal off schedule, and causing significant disruption to the airport, agencies and other airlines on a regular basis.

Difference between Scheduled and Actual In Block Time (European Short Haul Service)

15 mins early

Using scale and consistency principles

- This service was less than 1.5 hour flight time.
- The flight was repeatedly off slot by more than 15 minutes.
- This flight was presenting itself to the terminal at a time that was particularly disruptive to immigration and the handling agent.
- To the airport, this operation was a daily problem.