

ACI EUROPE WORKING PAPER underpinning the revision of Regulation 95/93 Practices and Recommendations related to Declared Capacities

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1. INTRODUCTION

- 1.1. Airport capacity is a crucial component in the overall performance of the aviation system and the ability of airports to serve passengers and optimize their travel experience, and by extension, enhance the welfare of European citizens. The capacity of an airport is reflected in the airport's capacity declaration, also referred to as 'coordination parameters'.
- 1.2. Setting the airport's declared capacity is the first step in the slot allocation process at any coordinated airport. It determines the 'supply' side of the allocation process, i.e. how many slots will be made available for airlines to use. This is a critically important yet complex task, which requires careful analysis and understanding of the trade-offs amongst different operational as well as a host of qualitative (safety, quality of service, environment) compatibility factors.
- 1.3. With demand for air transport predicted to continue growing in the coming decades, despite the setback of COVID-19, many airport operators with high-density traffic have seen themselves forced to increase the number and complexity of coordination parameters, with the prime objective of avoiding short-term overloads and ensuring that traffic loads in each of the individual capacity drivers are manageable.¹ At an increasing number of airports, today's declared capacities are also reflective of environmental objectives.

2. PROBLEM DEFINITION

Legal and policy framework for declared capacities

- 2.1. EU Regulation 95/93, henceforth referred to as the 'Slot Regulation', provides little guidance on how to set declared capacities. Article 6 of the Slot Regulation provides that an airport's coordination parameters should take into account any operational, technical and environmental constraints, yet it lacks reference pertaining to norms, standards and methods for setting the declared capacity.
- 2.2. Paragraph 6.2.2 of the Worldwide Airport Slot Guidelines (WASG), the industry best practice for slot allocation, states that the coordination parameters represent the maximum capacity available for allocation considering the functional limitations at the airport such as runway, apron, terminal, airspace, and environmental restrictions.
- 2.3. Both the Slot Regulation and the WASG require that a demand and capacity analysis, using commonly recognized best practice methods, is regularly conducted to validate declared capacity. No concrete definition of 'commonly recognized methods' exists, nor does guidance as to what they may constitute. Guidance is also lacking with regard to the trade-off between declared capacity and applicable service levels, although airline user perspectives differ. It follows that actual practices vary widely across 'Level 3' or coordinated airports within Europe and worldwide.

The drivers of declared capacities

- 2.4. Indeed, numerous factors combine to determine an airport's capacity, many of which are not directly within the control of the airport operator. Although runway capacity is one of the key descriptors of airport capacity, it is not the only factor.² The complexity of the declared capacity will vary with the size

¹ Odoni (2020).

² The number of available runways does not in itself define the level of achievable throughput. Relevant factors include their geographic location, the design of exits and taxiways, in-trail and lateral separation of aircraft, whether multiple runways may be operated independently of one another, the sequencing and separation of departing and landing aircraft on runways that intersect and/or on a single runway, the aircraft mix operating at the airport, mixed-mode runway usage, and the percentage of arrivals vs. departures within a given period of time and how this percentage changes during the day (i.e. hub-in and hub-out waves), et cetera.

and geographic location of the airport, the geometric layout of the runways and the airfield, the number and configuration of terminals, aprons and gates, baggage handling facilities, staffing, airspace capacity, the variability of weather conditions and so on. Limitations on any of these capacity elements can have a significant impact on the overall airport capacity.

- 2.5. In addition to the operational factors mentioned in section 2.4, other factors that can influence declared capacities include measures to address adverse environmental impacts, such as noise abatement procedures, night bans and carbon reduction strategies. Trade-offs between capacity utilization, applicable service levels and safety considerations should also be considered.
- 2.6. Declared capacities also depend on demand characteristics, such as seasonality and variability by time-of-day, week and season. Coordinated airports in Europe are very diverse as a group. Airports with strong seasonal demand will, despite their peak performance, have a lower annual throughput compared to airports operating at saturation or near-saturation levels with excess demand all year round, such as Heathrow, Schiphol and Paris Orly. The latter category of 'super-congested' airports is addressed in the ACI EUROPE WORKING PAPER on Level 4 Airports.
- 2.7. In conclusion, operational factors such as runway capacity might not be the determining bottleneck. For instance, Frankfurt's most limiting capacity factor is the terminal, whereas environmental impacts were the main reason for delays in capacity investment at the airports of Vienna, Düsseldorf and Munich.
- 2.8. Moreover, while some airports are held up as examples of capacity optimization which others should replicate, in many cases their good performance is due to a combination of unique local factors that might not be replicated at other airports. A customized approach is essential.

The need for flexibility in declared capacity growth and reductions

- 2.9. It should also be borne in mind that declared capacity is not a readily measurable quantity, but an agreed 'benchmark' months in advance of when the scheduled operations will actually take place. The true operating capacity of an airport when actual operations take place may be different. Thus, the declared capacity must be set in the face of uncertainty, taking into consideration the full range of true operating capacities that may materialize in practice.³
- 2.10. If capacity is declared at too high a level, the factors mentioned in the above paragraphs can combine to cause a build-up of delays and congestion. Therefore, when new capacity is made available at an airport, it may be essential for the airport to declare its new capacity at a level which can be managed in the peak traffic periods. It may be appropriate in such circumstances to release the new capacity gradually across several seasons.
- 2.11. Conversely, the current and seemingly growth-oriented EU Slot Regulation does not provide structural solutions to accommodate (temporary) reductions in capacity caused by contingencies, nor does it provide for procedures to return to normal operations thereafter. The slot rules appear to be only reflective of upside, i.e. the provision of more capacity.
- 2.12. If anything, the COVID-19 crisis has shown that it is not financially viable for all parties involved if airports are forced to run excess infrastructure in times of demand shocks and/or economic downturn. Unlike aircraft, airport infrastructure cannot be flexibly moved from one route or airport to another.
- 2.13. Were it to be argued that, in a perfect world, there would always be enough capacity at each and every airport, then evidently there would be no airport with a cost-efficient use of its infrastructure. This would in turn also affect its airline users.
- 2.14. To get the most out of existing capacity, ACI EUROPE strongly supports continued efforts to optimize the use of existing capacity based on technological innovation and effective multi-stakeholder cooperation, including through the Coordination Committee as set out in Articles 5 and 6 of the Slot

³ Odoni (2020).

Regulation. A more flexible and efficient slot regime would result in a better use of existing capacity, for instance through improved slot compliance.

The purpose behind declared capacities

- 2.15. A more fundamental question relates to the purpose of the capacity declaration. The sole or primary purpose of the capacity declaration is not to unlock as many slots as possible for airlines to be able to optimize their schedules and meet demand with minimal operating costs. Although airport capacity expansion may seem like the most obvious means to alleviate capacity shortfalls, it often requires governmental and public approval, which is presently a long and difficult process in Europe.
- 2.16. Instead, the coordination parameters should effectuate the optimal use of the airport's infrastructure: a combination of quantitative and qualitative elements. Airports should be able to take into account the broader range of interests involved, appropriate to the capacity drivers specific to that airport, demand patterns, applicable service levels and cost efficiency. Per Articles 5 and 6 of the Slot Regulation, any parameters are reviewed with stakeholders twice yearly.
- 2.17. In sum, an optimal use of capacity does not necessarily equate to the maximum possible declaration of that capacity. To account for today's challenges and the challenges facing us in the future, and recalling the European Commission's 2020 Sustainable and Smart Mobility Strategy in which the Commission reiterated its environmental focus, local operating conditions as well as substantiated qualitative elements should also be considered.

3. RECOMMENDATIONS

- 3.1. ACI EUROPE urges for Europe's airports to be given flexibility in setting declared capacities at the most optimal level in order to plan, finance, develop and grow in the most sustainable way possible, whilst taking note of unique local factors that might not be replicated at other airports.
- 3.2. ACI EUROPE recommends that Article 6 of the Slot Regulation should be amended to require that the capacity analysis and methods for determining the values of coordination parameters reflect the full spectrum of operating conditions, service levels and the public functions of the airport, as long as these are substantiated and consulted in a multi-stakeholder environment.
- 3.3. ACI EUROPE urges the European Commission to provide procedures in cases of (temporary) reductions in capacity, including allocation keys, also where historic slots are concerned.