

**Draft Decision on Summer 2019 Coordination
Parameters and Local Guideline 1 at Dublin Airport**

Commission Paper 10/2018

30 August 2018

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1. Executive Summary

- 1.1 The Commission for Aviation Regulation is the authority charged with declaring coordination parameters at coordinated Irish Airports. In this consultation paper we set out our Draft Decision on the Dublin Airport parameters for the Summer 2019 season, and also Local Guideline 1 which relates to time critical operations. The full set of proposed coordination parameters are set out in Appendix 1, while proposed text for the Local Guideline is set out in Appendix 2.
- 1.2 Our Draft Decision on the Summer 2019 parameters is as follows:
- Relative to the Summer 2018 runway limits, increase the Total movement cap by 1 in the hours 0800, 0900, 1700, and 1900, and 2 in the 1800 hour.¹
 - Relative to the Summer 2018 runway limits, increase the Arrivals cap by 1 in the hours 0800, 0900 and increase the Departures cap by 2 in the 1800 hour.
 - Increase the assumed load factor for assessing compliance with the passenger terminal limits to 95%, for scheduled services. Adjust the terminal limits correspondingly, such that the point at which a proposed operation will hit one of the terminal limits is the same as for Summer 2018.
 - Maintain the existing hard parameter on stands, and referral parameters on Terminal 2 Check-in desks and US Preclearance.
- 1.3 We are also proposing to approve Local Guideline 1, which relates to time critical operations, for implementation from 1 October 2018.
- 1.4 In arriving at our Draft Decision, we have examined and relied on a large body of evidence. We commissioned fast time simulation modelling of the airfield to assess a range of scenarios relating to potential increases in the runway limits. This work was carried out by Helios Technology Ltd (Helios). The assessment of these scenarios takes the form of a comparison of a range of airfield metrics. The results from this assessment were shared with the Coordination Committee.
- 1.5 We have considered other evidence with which we have been presented, or which we sought. This evidence includes modelling work conducted by Dublin Airport, and its consultants. It also includes evidence on current performance metrics of various parts of the airfield.
- 1.6 This Draft Decision follows an extensive iterative process of engagement over the past number of months between stakeholders. This includes consultation between the Commission, Helios, and the Coordination Committee on the fast time simulation modelling conducted. In addition, there has been extensive engagement and sharing of information between members

¹ All references to times or hours are in UTC 24 hour format. Where a reference is made to a particular hour, such as the 0500 hour, this refers to a time period of one hour from the stated time. To give an example, the 0500 hour spans from 5 am to 6 am UTC.

In each hour, a requested departure slot must not breach the hourly Departures limit or the hourly Totals limit, while a requested arrival slot must not breach the hourly Arrivals limit or the hourly Totals limit.

of the Coordination Committee in arriving at their advice for the Commission.

- 1.7 The Coordination Committee comprises Dublin Airport, the Irish Aviation Authority, and is open to all airlines operating at Dublin Airport.
- 1.8 Alongside this paper we have published the following supporting documents:
- Advice received from the Coordination Committee
 - The results of the work carried out by Helios
- 1.9 We invite evidence-based responses to this consultation paper. They should be titled “Response to Draft S19 Declaration of Coordination Parameters” and sent by email to info@aviationreg.ie or by post to: Commission for Aviation Regulation, 3rd Floor, Alexandra House, Earlsfort Terrace, Dublin D02 W773.²
- 1.10 The deadline for responses to this consultation is **5pm, Thursday 13 September 2018**. The timeline for this process is constrained at both ends which is the reason for the relatively short consultation period. In order to identify where adjustments to the parameters are needed, the best available information regarding airline growth plans for Summer 2019 is needed. Then the IATA World Slot Guidelines requires us to communicate the parameters to the coordinator by 27 September 2018. We intend to publish our final decision on 20 September 2018.

² Respondents should be aware that we are subject to the provisions of the Freedom of Information legislation. Ordinarily we publish all submissions received on our website. We may include the information contained in submissions in reports and elsewhere as required. If a submission contains confidential material, it should be clearly marked as confidential and a redacted version suitable for publication should also be provided. We do not edit submissions. Any party making a submission has sole responsibility for its contents and indemnifies us in relation to any loss or damage of whatever nature and howsoever arising suffered by us as a result of publishing or disseminating the information contained within the submission.

2. Background

Legislation

2.1 Section 8(1) of the Aviation Regulation Act, 2001, states that the Commission is the competent authority in Ireland for the purposes of Council Regulation (EEC) No. 95/93, as amended by Regulation (EC) No 793/2004 (“the Slot Allocation Regulations”). The Commission is therefore responsible for:

- The designation of the Coordination status of Irish airports.
- Appointing a qualified schedules facilitator or coordinator, as appropriate, at airports which have been designated as Schedules Facilitated or Coordinated.
- The declaration of coordination parameters at Coordinated airports, taking into account relevant technical, operational and environmental constraints.
- Deciding whether to approve Local Guidelines proposed by the Coordination Committee.

2.2 Dublin Airport is designated as Coordinated by the Commission; Airport Coordination Limited (ACL) is the appointed coordinator. No other airport in Ireland has been designated as either Schedules Facilitated or Coordinated.

2.3 Under Regulation No. 95/93, one of the roles of the Coordination Committee is to advise on appropriate coordination parameters.

2.4 Article 6(3) of the Slot Allocation Regulations details the required interaction between the Commission and the Coordination Committee:

“The determination of the parameters and the methodology used as well as any changes thereto shall be discussed in detail within the coordination committee with a view to increasing the capacity and number of slots available for allocation, before a final decision on the parameters for slot allocation is taken. All relevant documents shall be made available on request to interested parties.”

2.5 Subsequent sections of this paper detail how this requirement was met by the Commission.

Stakeholder Engagement Process

2.6 To help inform the decision on the parameters, we engaged Helios to carry out an assessment using the Commission’s fast time simulation airfield model (previously developed by Helios).

2.7 In May 2018, Helios contacted Coordination Committee members, setting out a proposed approach and seeking comment. Helios then re-validated the model; this involves simulating the flight schedule on a particular day, and comparing the simulated airfield metrics (such as taxi time durations) with actual observed metrics on the same day. If necessary, adjustments are made to the model and the process is repeated until a satisfactory result is obtained.

2.8 Airlines were asked to submit growth plans for Summer 2019 to ACL. Analysis carried out by ACL indicated that significant increases in the runway limits would be required to ensure that these plans could be fully facilitated, including a total of 23 new Totals between the 0500 hour

and 1700 hour.

- 2.9 Dublin Airport proposed a number of increases to the hourly runway limits, informed by the analysis carried out by ACL, but reduced in scope. This set of increases, summarised in Table 2.1, was termed the Summer 2019 (S19) Wishlist.

Table 2.1: Summer 2019 Wishlist

UTC Hour	Departures	Arrivals	Totals
0800		+1	+1
0900		+1	+1
1000	+1		+1
1100		+1	+1
1200	+1		+1
1600			+1
1700			+1
1800	+2		+2
1900			+1
Total	+4	+3	+10

- 2.10 Dublin Airport commissioned NATS to estimate the effect of changes to the runway limits on runway holding delay, with reference to whether a 10 minute runway holding delay criterion is exceeded. It also commissioned ARUP to carry out airfield simulation modelling.
- 2.11 Information provided by airlines was used to help construct a potential flight schedule on a busy day in Summer 2019, “the S19 Schedule”. The S19 Schedule was based on the flight schedule that actually operated on 5 July 2018, “the S18 Schedule”; this day was selected as representative of a typical busy, but not absolute peak, day in Summer 2018. A total of 37 prospective Summer 2019 new services were then added in order to derive the S19 Schedule.
- 2.12 The S19 Schedule was used by both Helios and ARUP for the airfield modelling. To isolate the effect of our decision, the Commission instructed Helios to coordinate the S19 Schedule according to both the proposed Summer 2019 Wishlist runway limits, and alternatively the current Summer 2018 runway limits. Helios then simulated both scenarios using the airfield model and compared the results, in order to identify the effect of implementing the S19 Wishlist. Comparisons were provided between simulated taxi times, ground delay and runway holding delay.
- 2.13 Dublin Airport proposed to increase the rolling hour departure limit for each terminal from 3,700 to 4,000. It also proposed to increase the load factor assumption from 85% to 95% for scheduled services. No other changes were proposed relative to the Summer 2018 limits.
- 2.14 The initial meeting of the Coordination Committee took place on 8 August 2018. Ahead of the initial meeting, Helios circulated the simulation modelling results. Dublin Airport also circulated various pieces of analysis and modelling results to Committee members ahead of the initial meeting, namely:
- The results of simulation modelling carried out by NATS in relation to runway holding delay with the proposed S19 Wishlist limits in place, and a second scenario in which no

changes are made to the 1200 hour, but an extra Total is instead added in the 1300 hour.

- Simulation modelling carried out for Dublin Airport by ARUP which compared the S18 Schedule with the S19 Schedule, with regard to taxi times.
- An update on actual airfield performance during Summer 2018, prospective projects to enhance capacity, and potential operational improvements which may be in place for Summer 2019, most notably relating to arrival-departure-arrival (ADA) patterns on the runway.
- An update from ACL containing an overview of Summer 2018 coordination to date. Also, the proposed text of a Local Guideline relating to urgent or time critical operations (termed 'Local Guideline 1').
- Proposed coordination parameters for Summer 2019.

2.15 Following the presentation of these results at the initial meeting, the Commission asked Helios to model three further scenarios, namely:

- Alternative 1, whereby the proposed extra Totals in the 1200 and 1600 hours are removed.
- Alternative 2, whereby the proposed extra Totals in the 1100, 1200 and 1600 hours are removed.
- Alternative 3, whereby the proposed extra Totals in the 1000, 1100, 1200 and 1600 hours are removed.

2.16 In each case, the alternatives were compared to a baseline scenario where no changes were made to the current limits. No changes were made to the current minimum aircraft separations in the Helios model.

2.17 The Coordination Committee met again on 22 August to arrive at its advice for the Commission. In advance of this Helios circulated the updated analysis. Dublin Airport also circulated updated material based on any action items arising from the initial meeting:

- NATS assessed a third scenario whereby the proposed changes in the 1100, 1200, and 1600 hours were dropped. It also tested the impact of reducing ADA separation by three seconds.
- ARUP assessed two further scenarios, the first with the additional Totals removed from the 1000, 1200, and 1600 hours, the second with the additional Totals removed from the 1000, 1100, 1200, and 1600 hours. ARUP separately assessed the effect of a six second reduction in the minimum required ADA separation.
- Dublin Airport's revised proposal for S19 coordination parameters, together with an update on the PACE programme of capital investment.
- A presentation from ACL, focusing on slot performance in Summer 2018 and a preview of Winter 2018.

Coordination Committee Vote

- 2.18 Following the presentation of all materials circulated by the respective parties, Coordination Committee members voted on the proposed parameters. Voting rights for Committee members are set out in the Coordination Committee Constitution. A set number of votes are allocated to Dublin Airport and IAA, with the rest allocated to airlines based on the number of movements flown at Dublin in the preceding year. Only those present can vote. The formalised advice from the Committee is published alongside this paper.

Table 2.2: Coordination Committee votes on proposed increases to hourly Total runway limits*

Member	Votes	0800	0900	1000	1100	1600	1700	1800	1900
Aer Lingus	250	X	X	X	X	X	X	X	X
American Airlines	8	✓	✓	✓	✓	✓	✓	✓	✓
British Airways	35	X	X	X	X	X	X	X	X
CityJet	21	X	X	X	X	X	X	X	X
Daa	40	✓	✓	✓	✓	✓	✓	✓	✓
Delta Airlines	6	✓	✓	✓	✓	✓	✓	✓	✓
Hainan	1	✓	✓	✓	✓	✓	✓	✓	✓
IAA ANSP	20	✓	✓	✓	✓	✓	✓	✓	✓
Iberia Express	3	X	X	X	X	X	X	X	X
Lufthansa	14	X	X	X	X	X	X	X	X
Ryanair	318	✓	✓	✓	X	X	✓	✓	✓
Stobart	88	X	X	X	X	X	X	✓***	✓
TUI	4	✓	✓	✓	✓	✓	✓	✓	✓
United**	8	-	-	-	-	-	-	-	-
For		397	397	397	79	79	397	485	485
Against		411	411	411	729	729	411	323	323

Source: Coordination Committee

*The increase in the 1200 hour originally proposed was not put to vote.

**The United representative attended the first part of the meeting but was not present for the vote. United subsequently communicated support for the full suite of increases.

***Stobart supported increasing the Total limit in the 1800 hour by 1 rather than 2.

- 2.19 The advice of the Committee is therefore to increase the Totals in the 1800 and 1900 hours only. The Committee then proceeded to vote on the proposed increases to Arrival and Departure limits.

Table 2.3: Coordination Committee votes on proposed increases to hourly Departure and Arrival runway limits*

Member	Votes	0800	0900	1000	1100	1800
Aer Lingus	250	X	X	X	X	X
American Airlines	8	✓	✓	✓	✓	✓
British Airways	35	X	X	X	X	X
CityJet	21	X	X	X	X	X
Daa	40	✓	✓	✓	✓	✓
Delta Airlines	6	✓	✓	✓	✓	✓
Hainan	1	✓	✓	✓	✓	✓
IAA ANSP	20	✓	✓	✓	✓	✓
Iberia Express	3	X	X	X	X	X
Lufthansa	14	X	X	X	X	X
Ryanair	318	✓	✓	✓	X	✓
Stobart	88	X	X	X	X	✓***
TUI	4	✓	✓	✓	✓	✓
United**	8	-	-	-	-	-
For		397	397	397	79	485
Against		411	411	411	729	323

Source: Coordination Committee

*The increase in the 1200 hour originally proposed was not put to vote.

**The United representative was present for the first part of the meeting but was not present for the vote. United subsequently communicated support for the full suite of increases.

***Stobart supported increasing the Departures limit in the 1800 hour by 1 rather than 2.

- 2.20 The advice of the Committee is therefore to increase the Departures limit in the 1800 hour only. The Committee then proceeded to vote on the proposed rolling hour terminal limits, the referral parameters, and stand parameters.

Table 2.4: Coordination Committee votes on proposed Terminal, Stand, and Referral limits

Member	Votes	Terminal	Stands	Referral Limits
Aer Lingus	250	✓	✓	✓
American Airlines	8	✓	✓	✓
British Airways	35	✓	✓	✓
CityJet	21	✓	✓	✓
Daa	40	✓	✓	✓
Delta Airlines	6	✓	✓	✓
Hainan	1	✓	✓	✓
IAA ANSP	20	✓	✓	✓
Iberia Express	3	✓	✓	✓
Lufthansa	14	✓	✓	✓
Ryanair	318	✓	✓	✓
Stobart	88	✓	✓	✓
TUI	4	X	✓	✓
United*	8	-	-	-
For		804	808	808
Against		4	0	0

Source: Coordination Committee

*The United representative was present for the first part of the meeting but was not present for the vote. United subsequently communicated support for the full suite of increases.

- 2.21 The advice from the Coordination Committee is therefore to implement the terminal, referral and stand limits proposed by Dublin Airport.
- 2.22 Finally, the Committee voted on Local Guideline 1 in relation to time critical operations. This received unanimous support.

3. Airfield Coordination Parameters

- 3.1 The Commission's Draft Decision is to increase the hourly runway Total limits by one movement in the 0800, 0900, 1700 and 1900 hours, and by two movements in the 1800 hour. This corresponds with the 'Alternative 3' scenario modelled by Helios. We are also proposing to increase the Arrivals limit by one movement in the 0800 and 0900 hours, and the Departures limit by two movements in the 1800 hour.

Table 3.1: Draft changes to runway limits from Summer 2018

UTC Hour	Departures	Arrivals	Totals
0800		+1	+1
0900		+1	+1
1700			+1
1800	+2		+2
1900			+1
Total			+6

- 3.2 We propose to retain the stand parameter as a hard constraint. Where demand for stands exceeds supply, movements are referred to Dublin Airport for detailed assessment. If the issue cannot be resolved, a slot will not be allocated.
- 3.3 We do not propose to make any changes to the 10 minute runway limits.

Helios Airfield Modelling

- 3.4 As was the case in previous seasons, the model validation process again demonstrated the ability of the model to accurately replicate the real operation of a given flight schedule. Two validation exercises were carried out. The first was based on the schedule that operated on 2 June 2018, a day with 98% of movements using Runway 28. The second was 5 July 2018, the S18 busy day which formed the basis of the S19 Schedule used for the various scenarios.
- 3.5 In both validations, key simulated metrics (taxi out times, runway throughput, counts of aircraft coming on block, off block, lifting off and touching down) show a close match with the actual data both in magnitude and daily profile. The difference between the average simulated and average real taxi out time is 23 and 22 seconds, for the first and second validations respectively.
- 3.6 Efficient towing of aircraft occurs in the model. Aircraft are allocated to stands by a rule based engine. Taxiway, towing, runway, and runway exit usage restrictions and patterns have been implemented in the model. Given the close match in the model validation outputs, it is our view that no significant airfield capacity affecting element has been omitted from the model.
- 3.7 For the purposes of Helios modelling, taxi out time measures the time elapsed from the aircraft coming off blocks until it crosses the runway stopbar to begin its take-off roll. Departure ground delay is the accumulation of all delay experienced in the same period, i.e. all components of taxi-out time other than unimpeded taxi-time. The estimated effect of proposed airfield capacity increases on these two closely related metrics is, in our view, the best way to assess the physical and operational ability of the airfield to deliver the flight schedule.

- 3.8 There are 37 new movements in the S19 Schedule. Most of these movements could be accommodated without any changes to the runway limits. To isolate the effect of the various options, we asked Helios to simulate the S19 Schedule coordinated according to the S19 Wishlist scenario and each of the three alternative scenarios, and in each case compare it to the baseline scenario in which no changes are made to the limits. This process isolates the effect of a decision to increase the parameters. In all cases there was the same number of flights in each scenario.
- 3.9 Given the extent to which the S19 Schedule fills the runway limits, it was necessary to coordinate certain flights by a number of hours, to either the early morning or evening. This has resulted in some increases in taxi times in the baseline scenario in these hours. Increases in these hours may or may not occur regardless of any decision to adjust the limits in other hours. Thus, the most relevant times to focus on for the purposes of this decision are the three time periods set out in Table 3.2, where it can be seen that the additional movements allowed for in the 'Alternative 3' scenario have led directly to an increase in taxi out times.

Table 3.2: Taxi out Duration

Time (UTC)	'Alternative 3' Scenario	Summer 2018 limits scenario	Difference
Average (1010-1230)	00:16:16	00:15:20	+ 00:00:54
Average (1300-1500)	00:24:13	00:22:51	+ 00:01:22
Average (1540-1810)	00:19:51	00:18:41	+ 00:01:10
Daily average	00:16:39	00:16:21	+ 00:00:18
Peak average	00:27:14	00:25:34	+ 00:01:40

Source: Helios.

Average times are based on a rolling 10 minute window. Peak times refer to the window with the highest average value. Values are in hours, minutes and seconds.

- 3.10 The S19 Schedule implies 5% growth in movements relative to the Summer 2018 busy day. From the 0600 hour to the 1800 hour, there is no scope in the runway limits for any more movements, and in the 0500 hour there is no scope for any more departures. Thus, the modelling shows the effect of each potential decision in a continued high growth scenario. It is an estimate, based on best current information, of the direct effect of each potential decision on a busy day during Summer 2019.
- 3.11 Detailed results in relation to 'Alternative 3' are published alongside this paper. In summary, relative to maintaining the Summer 2018 limits, 'Alternative 3' is expected to lead to:
- Increases in average taxi out times of roughly 1 minute between 1000 and 1800.
 - An increase in the daily peak taxi out time of 1 minute 40 seconds.
 - No significant changes for arriving aircraft.
- 3.12 While taxi out time peaks at 1400 in both scenarios, the greatest increase resulting from 'Alternative 3' is roughly 3 minutes, observed shortly after 1700.

Other Modelling

- 3.13 As has occurred in previous seasons, Dublin Airport commissioned NATS to assess the impact of the proposed changes in runway parameters. It is important to note that the purpose of the NATS assessment is different to that of the airfield modelling carried out by Helios and Dublin Airport itself. NATS assesses whether the runway alone is capable of delivering a theoretical schedule, whereby the traffic in each hour fills the proposed runway limits, without breaching a 10-minute runway holding delay criterion. The Helios and ARUP modelling includes the runway, taxiways and apron whereas NATS assesses the runway only.
- 3.14 NATS modelled the final proposed parameters and the 10-minute delay criterion was not breached. A 10-minute delay criterion, off runway 28, was previously agreed among the Coordination Committee as the cut-off point beyond which further capacity increases should not be implemented.
- 3.15 Dublin Airport also commissioned ARUP to carry out airfield simulation modelling. This model is broadly similar to that developed by Helios. ARUP simulated the 5 July 2018 flight schedule, and compared it with the S19 Schedule coordinated according to several scenarios. Thus, it is a year-on-year comparison, rather than an estimate of the effect of adjusting the runway limits. As identified in Helios' work, much of the additional delay in Summer 2019 is as a result of growth within the existing limits rather than growth due to changes in the limits. Where there was overlap between the ARUP and Helios approach, the two sets of results were similar.
- 3.16 ARUP also assessed the impact of the potential reduction in the minimum required ADA separation, on the operation of the S19 Schedule. This assessment indicated a dramatic improvement in taxi out times in the early afternoon peak, when the ADA pattern is common.

Taxi Out times and On Time Performance (OTP) in Summer 2018

- 3.17 It is important to also consider recent observed taxi time and OTP trends, together with the reasons underlying these trends. Table 3.3 shows average taxi times for runway 28 operations in Summer 2018 and Summer 2017.

Table 3.3: Mean Taxi Times in Summer 2018 and Summer 2017, Runway 28

	Taxi out		Taxi in	
	Summer 2017	Summer 2018	Summer 2017	Summer 2018
Overall	13:53	15:21 ▲	07:04	07:44 ▲
Pier 1	14:03	15:46	06:34	06:52
Triangle	12:11	13:40	04:32	04:47
5G	12:55	13:32	07:09	07:16
Pier 2	13:46	15:01	05:52	06:36
Pier 3	14:09	15:22	07:57	09:31
Pier 4	14:10	15:22	09:28	09:54
South Apron	15:09	16:50	09:18	08:48 ▼
Central Apron (118R – 120C)	13:18	14:26	05:13	05:41

Source: Dublin Airport.

Data in minutes and seconds, collected from 1 April - 19 August

- 3.18 Average taxi out times to runway 28 in Summer 2018 have increased by 1 minute 28 seconds

from Summer 2017. Ahead of the Summer 2018 declaration of capacity, Helios advised that in a continued high growth scenario, busy day increases of 1 minute 29 seconds could be expected. Such a scenario has materialised, and average taxi times are in fact approaching the busy day forecast. Helios further forecast that this increase would largely occur regardless of whether the proposed increases in the runway limits were implemented.³

- 3.19 Taxi out times to runway 10 are typically 4-5 minutes higher than runway 28, while taxi in times are lower. Relative to Summer 2017, a similar deterioration in the aforementioned airfield metrics has been observed for runway 10 operations. Over April-June 2018, the use of runway 10 was higher than normally occurs.
- 3.20 Average taxi in time from runway 28 has increased by 40 seconds from Summer 2017.
- 3.21 Table 3.4 shows OTP overall and by pier/apron area for Summer 2017 and Summer 2018 to date.

Table 3.4: On Time Performance by Pier at Dublin Airport

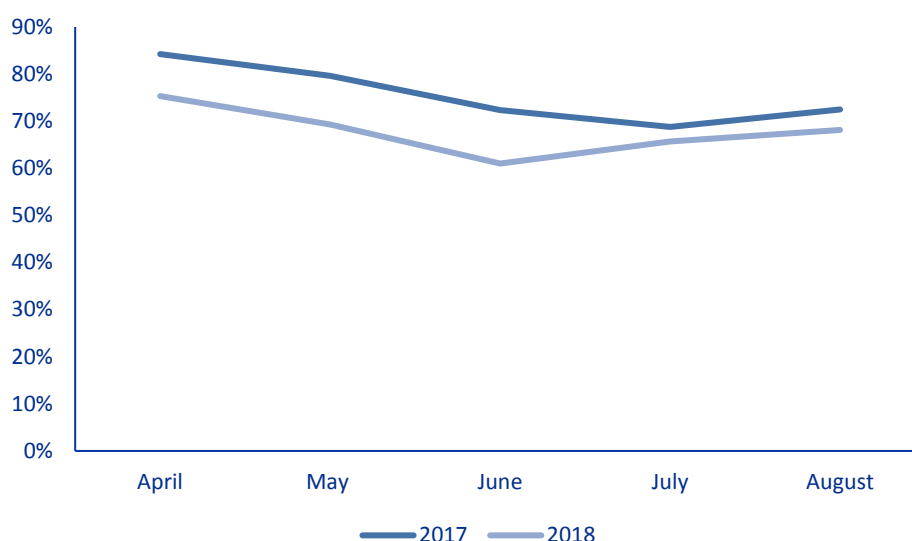
	Summer 2017	Summer 2018
Overall	75.2%	67.7% ▼
Pier 1	74.3%	63.0%
Triangle	84.7%	76.1%
Apron 5G	75.0%	69.2%
Pier 2	75.9%	69.8%
Pier 3	72.7%	69.3%
Pier 4	74.4%	67.9%
South Apron	71.2%	76.4% ▲

Source: Dublin Airport

* Calculated from April to August for comparability between both seasons.

- 3.22 There has been a notable fall in OTP in Summer 2018 relative to Summer 2017, particularly in the first three full months of the season. Performance has, however, improved in July and August.

³ http://www.aviationreg.ie/fileupload/s18/Helios_results_sharedwithCC.pdf
http://www.aviationreg.ie/fileupload/s18/Helios_additional_scenarios.pdf

Chart 3.1: OTP by Month in Summer 2017 and Summer 2018

- 3.23 OTP is driven by a wide range of factors controlled by a number of stakeholders, including the airport, airlines, ground handlers and air traffic control. Thus, in isolation, OTP is not a particularly reliable indicator of the ability of the airfield to deliver a given schedule. To identify the extent to which airfield capacity related issues may have driven the deterioration in OTP, we have assessed the reasons for delay, based on the IATA standard delay codes.⁴

Table 3.6: Dublin Airport Related Delay Minutes

	Departures*		Arrivals**	
	Delay minutes	% of Total delay	Delay minutes	% of Total delay
Summer 2017	67,435	14%	27,560	7%
Summer 2018	89,486	13%	35,588	6%
Change	+ 33%	-7%	+ 29%	- 14%

Source: Dublin Airport. Calculated from April to August for comparability between both seasons.

*Codes: 87 (airport facilities) and 89 (restrictions at airport of departure).

** Codes: 83 (ATC restriction at destination), 84 (ATC restriction due to weather at destination), 87 (airport facilities) and 88 (restrictions at airport of destination). Codes 83, 84, 88 are included to match code 89 for departure delay.

- 3.24 Table 3.6 shows that while airport related delay minutes has increased in absolute terms relative to Summer 2017, as a percentage of the total delay minutes, it has fallen. It should be noted that Table 3.6 shows total delay minutes for all movements; some of the increase is therefore due to more aircraft movements in Summer 2018 and thus more aircraft accumulating delay minutes. En-route Air Traffic Control and Airline-Rotation continue to be by far the most significant causes of reduced OTP.

Potential Infrastructural or Operational Changes for S19

- 3.25 There are a number of Programme of Airport Campus Enhancement (PACE) projects which may be under construction and/or operational for the Summer 2019 Season.⁵ As in previous

⁴<https://www.eurocontrol.int/sites/default/files/content/documents/official-documents/facts-and-figures/coda-reports/standard-iata-delay-codes-ahm730.pdf>

⁵[https://www.aviationreg.ie/fileupload/Capex%20Updates/CAPEX%20Delivery%20Update%20Q2\(1\).pdf](https://www.aviationreg.ie/fileupload/Capex%20Updates/CAPEX%20Delivery%20Update%20Q2(1).pdf)

seasons, Dublin Airport has assured us that these projects would be carefully phased to minimise operational disruption. Projects are phased around delivering the flight schedule; that is, the first priority is maintaining the operational performance of the flight schedule, with works fitted in around this.

- 3.26 There are a number of potential operational improvements which may be in place for Summer 2019. The process for implementing Airport Collaborative Decision Making (A-CDM) at Dublin is currently ongoing. There are initiatives ongoing to reduce aircraft separations on the runway. These changes should lead to more efficient use of the existing infrastructure. However, given that none of these improvements are confirmed to be in place, we have not relied on them either for the modelling carried out by Helios or in this Draft Decision.

Draft decision - Airfield

- 3.27 The Commission's draft decision is to amend the runway limits in accordance with the 'Alternative 3' scenario. This includes one extra Total permissible movement in the 0800, 0900, 1700 and 1900 hours and two extra Totals in the 1800.
- 3.28 We propose to add one extra Arrival in each of the 0800 and 0900 hours, and two extra Departures in the 1800 hour. We are not proposing any changes to the 10-minute runway constraints, nor the hard constraint on stands.
- 3.29 In assessing the capacity of airport infrastructure, it is necessary to examine the capacity of that infrastructure when it is operated efficiently. The decision should not take account of inefficient practices which can be changed but which may be constraining the use of the infrastructure. Nor should it take account of factors unrelated to the infrastructure in question, such as reduced OTP caused by en-route air traffic control, rotational delay, aircraft defects or documentation issues, or passenger convenience. To do so would require making assumptions which would artificially constrain the achievable capacity of the airport. The IATA World Slot Guidelines state that when assessing the capacity of airport facilities, "the analysis should assume that the airport facilities are being managed efficiently and are fully staffed."⁶
- 3.30 There is a trade-off between taxi out times/ground delay and runway capacity, particularly in the peak periods, where the marginal delay caused by the addition of movements is higher. On the other hand, we are proposing to implement only 6 of the 23 additional Totals initially identified by ACL as being required; this is likely to only partly mitigate the issue of carriers being unable to obtain usable slots. Our view is that this Draft Decision strikes an appropriate balance between allowing for continued growth without incurring significant extra congestion on the airfield.
- 3.31 The Helios modelling results have been summarised above. When deciding on the Summer 2018 limits in 2017, we implemented a proposal which Helios forecast would lead to an increase in the peak daily taxi out time from 26:06 to 27:39, an increase of 01:33, as well as average increases of more than one minute between 0500 and 0700 and between 1300 and 1830. The Summer 2018 modelling also indicated that the peak gap in departure ground delay would be roughly 4 minutes, compared to the forecast three minutes for the Summer 2019 'Alternative 3' scenario. In short, the modelling has indicated that the direct effect of a decision to implement 'Alternative 3' in absolute terms, is similar to, and in some aspects

⁶ The World Slot Guidelines are the rules and guidelines established by the air transport industry worldwide and referred to in article 8(5) of the Slot Allocation Regulations.

lesser than, the direct effect of the proposal which we previously implemented. In absolute terms, the modelling of 'Alternative 3' forecasts a peak taxi out time 25 seconds lower than the forecast peak in the Summer 2018 scenario previously implemented. We have chosen the more conservative alternative scenario modelled, given the observed increases in taxi times and airport related delay in Summer 2018.

- 3.32 Airline members of the Coordination Committee expressed a range of views regarding the runway limits, from opposing any changes to expressing the view that more capacity should be tested for. Both Dublin Airport and the IAA are supportive of the release of new capacity as set out in section 2, as they are confident that the additional movements can be handled. Based on the Committee voting procedure, it has advised us to implement changes in the 1800 and 1900 hours only.
- 3.33 We note that the NATS 10 minute delay criterion off runway 28 would not be breached by our proposed runway limits.
- 3.34 We are proposing to implement the additional Arrival in the 0800 and 0900 hours, and two additional Departures in the 1800 hour. The S19 Schedule fills the Total runway limits in these hours, and comes close to the relevant sub-limit on movement type.⁷ Thus additional movements, relative to what Helios has modelled, could only occur at the expense of departures (0800 and 0900) and arrivals (1800) respectively. The ACL analysis has indicated that additional arrivals/departures respectively are likely to be required at these times. We are not proposing to implement the additional Departure at 1000, or Arrival at 1100. It is not clear that these changes are likely to be necessary for Summer 2019, particularly given our Draft Decision to not increase the Totals limit in these hours. If they were to become a constraining limit despite no increase in the Totals limit, the flight schedule would necessarily be significantly different to the S19 Schedule, and such a flight schedule has not been modelled.
- 3.35 We propose to continue to set the runway limits based on Runway 28 only, as this is the runway on which the majority of movements take place.

⁷ See Helios slides, page 21

4. Terminal Parameters

- 4.1 Our Draft Decision is to increase the hourly limits as set out in Table 4.1. We are also proposing to increase the assumed load factor when assessing a slot request against the terminal limits, from 85% to 95% for scheduled services and retain the 95% assumption for charter services. The limits have been adjusted such that relative to Summer 2018, there is no effect on the point at which a slot request will reach the limit, when the revised load factors are taken into account. We propose to maintain the referral parameters in relation to Terminal 2 check-in desks and US Preclearance.

Table 4.1: Hourly Limits - Summer 2018 and Summer 2019 Draft Decision

	Summer 2018		Summer 2019	
	Departures	Arrivals	Departures	Arrivals
Terminal 1	3700	3550	4,130	3,960
Terminal 2	3700	3050	4,130	3,400

Hourly limit rolled every 10 minutes

Proposed Parameters – Dublin Airport

- 4.2 The following changes were proposed by Dublin Airport to the coordination parameters for the terminals:
- Increase the hourly limit for departing passengers to 4,000 for both Terminal 1 and Terminal 2.
 - Increase the assumed load factor from 85% to 95% for scheduled services.
- 4.3 These proposed changes were supported by the Coordination Committee, with the exception of TUI.

Proposed Referral Limits – Dublin Airport

- 4.4 Referral limits are not hard coordination parameters. If a proposed operation hits a referral limit, it is referred to the airport to attempt to find a workable solution.
- 4.5 The airport proposed retaining the referral parameter for Terminal 2 check-in desks 1-28 (Terminal 2 operators excluding Aer Lingus) – where demand exceeds 28 desks. It also recommended retaining the referral for US Preclearance, which applies to any new flights, or time changes to pre-existing flights, intending to use this facility.
- 4.6 The proposed referral parameters were supported by the Coordination Committee.

Dublin Airport Terminal Capacity

- 4.7 As part of our decision on the Summer 2018 limits, the Commission assessed the processing capacity of the different PTB processors with reference to the proposed Summer 2018 limits, and determined that the proposals were feasible.⁸ Given that we are proposing to maintain the effective capacity at the Summer 2018 levels, we would refer back to that analysis and

⁸ [https://www.aviationreg.ie/fileupload/s18/Decision%20Summer%202018%20Coordination%20Parameters\(1\).pdf](https://www.aviationreg.ie/fileupload/s18/Decision%20Summer%202018%20Coordination%20Parameters(1).pdf)

draw the same conclusion.

- 4.8 In March 2018, we published a report which we commissioned from Helios which fully assessed the capacity of Dublin Airport.⁹ It contains detailed analysis of the overall Passenger Terminal Building (PTB) capacity. In broad terms, it can be concluded from the Helios report that:
- For Terminal 2, the Summer 2018 limits are appropriate.
 - For Terminal 1, the processing ability of the facilities could allow for higher limits to be declared.
 - The referral limits relating to US Preclearance and Terminal 2 check-in desks should be maintained.
- 4.9 The proposal from Dublin Airport is to effectively reduce the PTB limits. A limit of 3,700 combined with an assumed load factor of 85% is analogous to a limit of 4,130 combined with 95% load factors, or a limit of 4,350 combined with assumed load factors of 100%. There is no difference at all between any of these, with regard to when a slot request will hit the limit.
- 4.10 Thus, the PTB proposal from Dublin Airport would effectively reduce arrival capacity by 10%, and departure capacity by 3%. Such a reduction would not be supported by the Helios report. Neither have we received other evidence which would support such a reduction. On the other hand, no Committee member sought or proposed a higher level of declared capacity, and the terminal limits are likely to be minimally constraining relative to the runway limits.
- 4.11 We recognise that actual load factors are considerably higher than the 85% which has been assumed to date. Thus, our Draft Decision is to implement the revised load factors but also increase the PTB limits such that the effective capacity which is currently declared for Summer 2018 is maintained.

9

[http://www.aviationreg.ie/fileupload/Helios%20capacity%20assessment%20workstream%202/P2410D008_Final_Report_v1_5_1%20\(clean\).pdf](http://www.aviationreg.ie/fileupload/Helios%20capacity%20assessment%20workstream%202/P2410D008_Final_Report_v1_5_1%20(clean).pdf)

5. Local Guideline 1 – Time Critical Operations

- 5.1 ACL proposed a local guideline for Dublin Airport to address urgent or time critical operations. This was discussed at the Coordination Committee meetings and the advice to the Commission from the Committee is to implement it.
- 5.2 We have discussed the text of the local guideline with ACL, amending it slightly, and our proposal is to implement it from 1 October 2018, as detailed in Appendix 2.
- 5.3 There are two parts to the local guideline. The first provides some guidelines for operations which can operate at a coordinated airport without a slot under Article 2(g) of the Slot Regulations. These are emergency landings, State flights and humanitarian flights. However, to allow the airport to plan for these operations and to ensure these flights do not receive warnings from slot monitoring, the proposed guideline states that the coordinator should be notified of the details of the operations. These details are required to verify that the operation does not require a slot. The local guideline provides this guidance and also allows the coordinator to potentially block off an available slot to compensate for any impact on congestion or delay at the airport.
- 5.4 The second part considers time critical operations. Dublin Airport is operating at or close to the total movement capacity declared in multiple hours of the day. If an airline needs to operate a time critical flight, it can encounter difficulties obtaining a suitable slot for the operation. The operations considered by the local guideline are technical flights which need to occur in daylight hours, and flights to recover passengers impacted by an unforeseen event. For example, if an aircraft encounters technical difficulties, the airline may need to position a relief aircraft into or out of Dublin to rescue the effected passengers. Currently there could be lengthy delays in operating the positioning flight due to no available slot.
- 5.5 To address this issue, we propose to introduce this local guideline which would allow such operations be allocated a slot above the normal parameters (maximum one per hour). The guideline will form part of the capacity declaration.
- 5.6 As required by Article 8(5) of the Slot Regulations, this guideline does not affect the independence of the coordinator, it requires the coordinator to continue to operate in an independent way to ensure it is fairly applied. We will require the coordinator to report on the use of the local guideline at the end of each season and will monitor its implementation. This guideline will assist in the efficient recovery of passengers and minimise knock on effects of unforeseen circumstances. The local guideline complies with the Slot Regulations.

Appendix 1: Draft Coordination Parameters at Dublin Airport for IATA Summer 2019 Season

The Commission for Aviation Regulation proposes the following limits for the Summer 2019 season.

Runway Scheduling Parameters:

Runway Hourly Limits			
Time UTC	Arrivals Limit	Departures Limit	Total Limit
0000	23	25	32
0100	23	25	32
0200	23	25	32
0300	23	25	32
0400	23	25	32
0500	23	36	40
0600	20	31	42
0700	25	25	42
0800	25	25	44
0900	25	24	44
1000	27	27	45
1100	27	28	47
1200	23	27	46
1300	27	24	46
1400	23	26	44
1500	26	25	46
1600	25	29	48
1700	23	27	45
1800	23	26	39
1900	23	22	39
2000	25	22	38
2100	30	25	36
2200	28	25	32
2300	23	25	32
Totals	586	624	955

Maximum number of movements per 10 minute period	
Maximum Total	9
Maximum Arrivals	6
Maximum Departures	6*
*Exception – Maximum Departure Limit is 7 movements at 0500, 0510, 0520, 0530, 0540, 0550 UTC.	

Passenger Terminal Parameters:

	Departures Hourly Limit	Arrivals Hourly Limit
Terminal 1	4,130	3,960
Terminal 2	4,130	3,400

Notes:

- 1) The hourly limit for passengers is rolled every 10 minutes.
- 2) Load factors of 95% are applied to Scheduled and Charter services.

Stand Parameters:

	GA		Non-Turnaround		Turnaround Stands								All
	LAB	APC	W.A.	Total	5G	P1	P2	P3	P4	S.A	Triangle	Total	Total
Contact						23	10	11	19			61	61
Remote	12	13	23	36	14				1	9	5	31	79
All	12	13	23	36	14	23	10	11	20	9	5	92	140

Note: Stands defined based on ICAO Code B and C size.

Area	Constraint
Stands	Where demand for stands exceeds supply based on coordination allocation, flights to be referred to Dublin Airport for detailed assessment.

Referral Parameters:

Area	Flag
T2 Check-in Desks 1-28 (T2 Operators excluding EI)	Demand exceeds 28 desks
US Preclearance	New flights and schedule changes

Appendix 2: Proposed Text of Local Guideline 1

Local Guideline 1: Dublin Airport Procedures for Urgent or Time Critical Operations

1. By virtue of Article 2(g) of the Slot Regulation, State flights, emergency landings and humanitarian flights may operate at a coordinated airport without a slot allocated by the Coordinator. With the exception of emergency landings, operators of such flights should apply to the Coordinator in advance and provide all necessary information to determine the flight's status. The Coordinator will allocate an available slot to these flights, where possible, to ensure that airport operations are not prejudiced. If no slot is available the flight can still operate. Emergency landings must be notified to the Coordinator as soon as possible after the event for monitoring purposes.

Examples of Humanitarian flights include Medical Emergencies, Donor Flights, Search and Rescue, Air Ambulance flights where the condition of the patient is urgent or acute.

2. There are some types of operation that may be considered time critical. All such flights require a slot allocated in advance by the Coordinator. To accommodate these types of operation the coordinator **may** 'overbook' the normal coordination parameters having taken into account the congestion likely to occur and the overall capacity situation. The Coordinator will overbook a maximum of one flight per hour. These types of operation are:
 - a) Technical Flights
Radar and ILS calibration flights, Air Tests limited to daylight hours for technical reasons and where no feasible slots are available.
 - b) Recovery Flights
Departures to continue a planned commercial service with passengers aboard on the same day following a Diversion or Quick Return.

Positioning flights to replace an unserviceable aircraft or other unforeseeable schedule disruption (eg severe weather) and resume a planned commercial passenger service, limited to the following circumstances:

- Inbound positioning to recover a planned Dublin departure service
 - Outbound positioning to recover a Dublin-based air carrier's own service
 - The return of a Dublin-based recovery aircraft to resume planned operations
 - Outbound positioning flight of an away-based airline's aircraft following unplanned essential maintenance at Dublin, where the aircraft is urgently required to resume commercial operations.
3. Where flights are accommodated in accordance with paragraphs 1 or 2 of these procedures, the Coordinator may block a nearby vacant slot, if available, to ensure that airport operations are not prejudiced.
 4. All slots will be cleared by the Coordinator during office hours. Stand and US Preclearance availability will be checked to ensure that airport operations are not prejudiced.
 5. In the event of suspected abuse of these procedures, the Coordinator will contact the air carrier concerned for an explanation. If the explanation is inadequate, unacceptable, or not forthcoming then the Coordinator may suspend the operator from access to these

overbooking arrangements for a set period of time. In the case of disagreement, the air carrier or Coordinator may request mediation by the Slot Performance Committee.

6. During periods of widespread disruption, the limit of one overage per hour may be overridden.
7. The Coordinator will report to the Coordination Committee and the Commission for Aviation Regulation on usage of this guideline at the end of each season.

Local Guideline 1: Appendix - Interpretation of Dublin Local Guideline 1 – Part 2b

This Appendix sets out guidelines on how the Coordinator and POD will interpret the definition of Dublin Based, as used in part 2b of Local Guideline 1.

A Dublin based carrier is defined as a carrier that declares at the start of each season the minimum number of relief aircraft to be based at Dublin Airport and have crew contractually based at Dublin Airport.

As of August 2018 carriers that meet this definition are:

Aer Lingus
Ryanair
Stobart Air
Cityjet