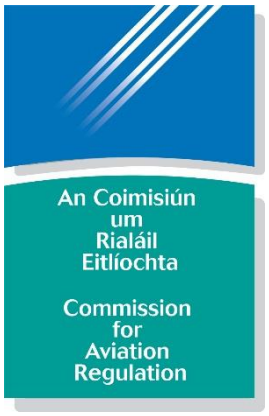

Decision on the Summer 2018 Slot Coordination Parameters at Dublin Airport

Commission Paper 11/2017

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Commission for Aviation Regulation

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1. Executive Summary

1.1 The Commission for Aviation Regulation, as the authority charged with declaring coordination parameters at coordinated Irish Airports, hereby sets outs our decision on the coordination parameters for the Summer 2018 slot season at Dublin Airport.[1]

1.2 We have decided on a number of changes to the coordination parameters for Summer 2018. These changes include 1 additional departure movement in both of the peak morning hours and a number of incremental changes to runway movements throughout the day. An increase in the hourly limit on the number of departing passengers in Terminals 1 and 2 from 3,375 and 3,450, respectively, to 3,700 in each and an increased hourly limit on the number of arriving passengers in Terminal 1 from 3,390 to 3,550.

1.3 This decision follows our Draft Decision which was published on 15 September 2017. Six parties responded to the Draft Decision: Aer Lingus, Cathay Pacific, Dublin Airport, Fedex, Icelandic Air and Lufthansa. Aer Lingus opposes the proposed increases in the runway coordination parameters whereas the 5 other responses supported the Draft Decision.

1.4 This decision does not differ from our Draft Decision. We have not been convinced by the arguments put forward against increasing the coordination parameters, nor have we been provided with additional analysis (compared to what we had at the time of the Draft Decision) which would suggest a different decision should be reached. In subsequent sections, we address the various comments made in the submissions.

1.5 This decision follows the advice we received from the Coordination Committee. The Coordination Committee comprises Dublin Airport, the Irish Aviation Authority and airlines operating at Dublin Airport. While open to all airlines operating at the airport, the following participated in the Summer 2018 process: Aer Lingus, British Airways, Cityjet, Norwegian, Ryanair and Stobart. The Commission observes meetings of the Committee in which the coordination parameters are discussed.

1.6 The Coordination Committee advised the Commission to increase the parameters in line with their final proposals. Those proposals were arrived at following an iterative process. Parallel to this, we provided modelling results to the Committee on its draft proposals prior to the finalisation of the Committee's advice to us.

1.7 In addition to the advice of the Coordination Committee, we examined and relied upon a large body of evidence and submissions. We commissioned fast time simulation modelling of the airport to assess a range of scenarios relating to the proposed amendments in the coordination parameters. The assessment of these scenarios takes the form of a comparison of a range of metrics on the airfield and in the terminal buildings. In arriving at this decision, we have taken account of all relevant technical, operational and environmental constraints at Dublin Airport.

1.8 We also considered modelling work conducted by Dublin Airport on the terminal buildings and the airfield, and modelling work on the runway capacity conducted by NATS for Dublin Airport. We considered evidence on current performance metrics of various parts of the airfield and

[1] In accordance with the IATA calendar, the 2018 Summer season runs from 25 March to 27 October 2018.

terminal buildings and also the physical processing capabilities of key processors in the airport. We were not presented with modelling work from any other party.

1.9 This decision draws to a close an extensive iterative process of stakeholder engagement over the past number of months. This included consultation between the Commission (and its advisors) and industry on the fast time simulation modelling we have conducted. In addition, there has been extensive engagement and sharing of information between members of the Coordination Committee in arriving at their advice for the Commission.

1.10 This paper incorporates the analysis and discussion from the Draft Decision paper and therefore can be read as a standalone paper. We have published a number of supporting documents:

- Advice received from the Coordination Committee
- Parameters proposed by the Coordination Committee
- Modelling results presented to the Coordination Committee by the Commission's advisors Helios on the fast time simulation modelling results of the forecast schedule using the proposed parameters
- Helios Responses to feedback received from Coordination Committee
- Additional modelling scenarios conducted by Helios for the Commission to isolate the effect of the parameters change
- Airfield model validation document - Helios
- Terminals model validation document – Helios

1.11 The full set of coordination parameters for Summer 2018 are in Appendix 1. The next section gives the background to this decision. Sections 3 and 4 detail the analysis we used to arrive at our decision for airfield and terminal parameters respectively.

2. Background

Draft Decision

2.1 On 15 September 2017, we published our Draft Decision on Summer 2018 coordination parameters for Dublin Airport. Responses to the Draft Decision were received from Aer Lingus, Cathay Pacific, Dublin Airport, Fedex, Icelandair and Lufthansa – these are published alongside this paper. Aer Lingus opposed our Draft Decision. The other 5 responses were supportive. Comments on the specific proposals are addressed in the relevant section throughout this document. We have analysed the comments received in detail but have not been persuaded by them to change our Draft Decision.

Legislation

2.2 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.

2.3 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.

2.4 Section 6(1) of the Slot Allocation Regulations details the declaration process:

- *At a coordinated airport the Member State responsible shall ensure the determination of the parameters for slot allocation twice yearly, while taking account of all relevant technical, operational and environmental constraints as well as any changes thereto.*
- *This exercise shall be based on an objective analysis of the possibilities of accommodating the air traffic, taking into account the different types of traffic at the airport, the airspace congestion likely to occur during the coordination period and the capacity situation.*
- *The parameters shall be communicated to the airport coordinator in good time before the initial slot allocation takes place for the purpose of scheduling conferences.*

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

2.6 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."

2.7 Subsequent sections of this paper detail how these requirements have been met by the Commission.

Discussion of Responses - Legislation

2.8 Aer Lingus states that it "does not believe that the Draft Decision complies with the EU Slot Regulation which requires the CAR to 'take account of all relevant technical, operational and environmental constraints'". In particular, it claims we failed to take account of:

- Operational constraints relating to bussing and towing
- Operational constraints relating to the staffing of facilities
- Environmental constraints relating to the emissions of aircraft and ground equipment

2.9 Section 6(1) of the Slot Allocation Regulations, quoted above, refers to relevant constraints. Only issues which are relevant to the coordination parameters and are constraining should be taken into account.

2.10 In relation to environmental issues, we only consider those which are constraining the use of the airport and which cannot be mitigated such as, noise restrictions or air quality restrictions. There are currently no relevant environmental constraints (for the purpose of slot coordination) placed on Dublin Airport. While the Government recognises reducing emissions from aviation is important, this is being pursued through the international community (EU and ICAO).[2]

2.11 For operational constraints, we need to consider those which are mandated or cannot be controlled. Our modelling of the airfield takes account of a large number of operational constraints on the infrastructure, for example, which taxiways can be used when and by what type of aircraft, required minimum separation distances between aircraft, how long it takes to efficiently process a passenger through security, etc.

2.12 Operational inefficiencies which would artificially constrain the use of the infrastructure should not be considered. For example, this would include understaffing of terminal facilities or failing to allow sufficient time for the bussing of passengers to a remote stand. These elements can be adjusted to release the efficient capacity of the infrastructure.

2.13 The technical constraints of the infrastructure have been extensively modelled. This simulation modelling is the foundation of this decision.

2.14 The specific examples given by Aer Lingus are discussed further in the subsequent sections.

[2] See section 7: http://www.dttas.ie/sites/default/files/publications/aviation/english/national-policy-statement-airport-charges-regulation/nps-airport-charges-regulations-final-18-sept.pdf

The Commission's Capacity Assessment – Fast Time Modelling of the Airport System

2.15 As discussed in the Draft Decision, following the Summer 2017 Capacity Declaration process which ended in October 2016, we indicated that we would commission independent modelling work to assist us in declaring parameters for future seasons. To this end, we engaged Helios Technologies Ltd, a specialised aviation consultancy. Helios commenced work in April 2017, holding initial meetings with a wide range of stakeholders shortly thereafter.

2.16 At the core of Helios' work was the development of fast time simulation models of both the airfield and the terminals. In both cases, a 2016 baseline model was built and validated. Validation involved a comparison of simulated key metrics, such as aircraft taxi out times, with actual data from 23 June 2016 (the '2016 Design Day').[3] This day was chosen as a typical day of Summer 2016 operations, for which a comprehensive range of data was available. Model validation is an iterative process whereby adjustments are made to the models in order to better simulate the actual metrics. The goal for the validation phase was to develop models which replicate the 2016 Design Day operations with sufficient accuracy such that they can be deemed fit for purpose for this assessment. Specific airfield and terminal metrics are discussed in further detail in sections 3 and 4, respectively.

2.17 An initial meeting for validation of the 2016 baseline airfield model was held with Dublin Airport and IAA on 27 June 2017. A first airfield validation document, together with video of the model in operation, was shared with the Coordination Committee members on 17 July. Following feedback, a second distribution took place on 28 July, with the final distribution on 4 August. Terminal validation documents, again accompanied by videos of the model, were circulated on 9 August and 11 August 2017. Following the validation process, we, and our advisors, were satisfied that the models were fit for purpose as described above. Validation of the airfield model is discussed further in the next section. A number of stakeholders also agreed that the model was fit for purpose. No stakeholder submitted a contrary view at that time; consequently, Helios proceeded to model Summer 2017 and Summer 2018. We have published the validation documents, links are in Paragraph 1.10.

2.18 The next phase of the assessment was to update the models for any relevant infrastructural or operational changes for Summer 2017. The Design Day chosen for the Summer 2017 model was 11 August 2017 (the '2017 Design Day'). The flight schedule on that day was modelled. Following this, a likely Summer 2018 flight schedule was modelled. This schedule was drawn up by Dublin Airport based on the best current information available as to the likely additional demand for slots in Summer 2018; these aircraft movements were then added to the Summer 2017 flight schedule. The initial Summer 2018 simulation assumed that the proposed changes to the runway limits had been implemented.

2.19 Draft results were shared by our advisors with the Coordination Committee on 11 August 2017, inviting written responses by 18 August. Helios presented the results to Committee members on 17 August. A number of changes were implemented based on written and oral feedback received; revised results comparing key metrics from the Summer 2017 simulation and the Summer 2018 simulation were then circulated on 25 August. A document summarising and responding to the feedback received was also circulated on that date. We

[3] Helios started building the model prior to peak weeks of Summer 2017, hence a design day from 2016 was used. When 2017 data was available, it was used to cross check the model.

have also published these documents.

2.20 Following this, we instructed Helios to compare 2 further scenarios in the airfield model. Firstly, we asked for a comparison between the Summer 2018 forecast schedule coordinated to the Summer 2017 runway limits, and the same schedule coordinated to the proposed Summer 2018 limits. Secondly, we asked for the same comparison but with three additional movements such that the proposed 0600 hour departures limit would be reached.[4] We published these results with our Draft Decision.

Responses Related to the Helios Assessment

2.21 Aer Lingus claimed that a full capacity assessment of the airport has "not been completed and a decision to increase coordination parameters should not be taken based on a partial assessment."

2.22 The Helios fast time simulation modelling of the airport's infrastructure is complete. As discussed above, this included an extensive validation process which was transparent and consultative. The model is then used to run various scenarios to judge their effect on key airport metrics. We have run a number of scenarios to assess the effect of the decision in this paper. These scenarios are discussed in the subsequent sections.

2.23 Helios has not yet completed the work on establishing if the parameters could be increased beyond those proposed here. Helios will submit a final capacity report assessing a range of other scenarios. The report will also consider the need to include 'firebreaks', or intermittent caps on available capacity, and will look to identify pinch points in airport infrastructure. This report will help to inform future capacity decisions but is not required to assess the proposals for Summer 2018.

Efficient Use of Infrastructure

2.24 Our analysis focuses on the maximum capacity of the infrastructure when it is operated efficiently. This takes account of technical, operational and environmental constraints where they exist.

2.25 For the airfield, this implies the efficient use of stands, taxiways and runways. The modelling should not take account of inefficient practices which can be changed but which may be constraining the use of the infrastructure. For terminals, it means that the modelling must assume that processing facilities such as security screening and immigration control are efficiently staffed to meet demand. For maximum capacity, this means fully staffed with all lanes operational. 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."[5]

2.26 Aer Lingus do not agree with this approach and are of the opinion that it is inappropriate to use the IATA guidelines on Demand and Capacity analysis for the purpose of capacity analysis

[4] All references to times or hours, throughout this paper, 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

[5] 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.

for slot declaration and we must take account of operational constraints.

2.27 The IATA guidelines apply to the assessment of capacity. Such an assessment can be used for deciding on the appropriate coordination level for an airport and also deciding on what capacity is available for coordination. When deciding on the coordination parameters we must consider the maximum capacity of the infrastructure. The staffing level of a facility can be changed to meet demand, up to the point of the maximum physical capacity of the facility. Dublin Airport can, and do, increase and decrease the number of operating security lanes to efficiently meet the demand. The same applies to other areas of the airport.

2.28 If we were to set capacity limits based on less than fully staffed facilities or inefficiently operated infrastructure, we would have to make assumptions which would artificially constrain the capacity of the airport.

Coordination Committee's Assessment of Parameters for Summer 2018

2.29 In August 2017, Dublin Airport circulated the following to other Committee members:

- A summary of Summer 2017 airfield performance and delay metrics.
- Details of any relevant infrastructural projects.
- Two proposed scenarios for increasing runway capacity (Wishlists 1 and 2).[6]
- The results from a runway capacity assessment carried out by NATS to assess Wishlists 1 and 2.
- A summary of key results from Dublin Airport's own airfield simulation model, comparing a Summer 2017 scheduled day of operations with a forecast Summer 2018 scheduled day of operations, in the latter case assuming that Wishlist 1 has been implemented.
- Dublin Airport's proposals for terminal and stand parameters.

2.30 The Committee met on 17 August 2017, at which the above documents were presented and discussed. Clarifications were sought, and adjustments to certain aspects of the various simulations were sought and agreed. On 26 August, Dublin Airport circulated the results from NATS assessment of a third Wishlist, and a document comparing the three pieces of airfield simulation modelling work carried out by NATS, Dublin Airport, and Helios.

2.31 The Committee met again on 29 August to finalise its advice to the Commission on coordination parameters for Summer 2018. 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 shared out among other members present at the meeting based on the number of movements flown at Dublin in the preceding year. Wishlist 3 was put to vote and the votes were cast as follows:

[6] A wishlist is the proposed changes in parameters required to give effect to a forecast schedule.

Table 2.1: Committee votes in favour of full set of runway limit adjustments

Member	Number of votes	In Favour	Against
Aer Lingus	247		✓
British Airways	36		✓
Cityjet	23	✓	
Dublin Airport	40	✓	
IAA	20	✓	
Norwegian	4	✓	
Ryanair	334	✓	
Stobart	103		✓
Total	**807**	**421**	**386**

Source: Coordination Committee

2.32 Based on the voting rights, the advice of the Committee is therefore to implement the changes in Wishlist 3 to the Summer 2017 runway limits for the Summer 2018 Season.

2.33 Aer Lingus, Stobart, and British Airways voted against, stating that while they supported a rebalancing of the arrival-departure mix in the 0800 hour and an increase in arrivals in the 2200 hour, they did not support all changes in Wishlist 3.[7] The IAA stated that it would support any of the three Wishlists, as it is confident the increased capacity can be delivered by the runway.

2.34 The Committee also voted on the terminal, stand and referral parameters as proposed by Dublin Airport. It was proposed that hourly terminal capacity for departures would increase from 3,375 in Terminal 1 and 3,450 in Terminal 2 to 3,700 in both terminals, and the 2-hourly limit would no longer apply. For arrivals, it was proposed to increase the hourly capacity in Terminal 1 from 3,390 to 3,550, leaving Terminal 2 unchanged. They proposed that the stand parameter would remain unchanged as a hard constraint, while the referral parameters relating to Terminal 2 check-in desks and US Preclearance should remain in place. Votes were cast as follows:

Table 2.2: Committee votes in favour of the proposed terminal, stand, and referral limits

Member	Number of votes	Terminal	Stands	Referrals
Aer Lingus	247	✓	✓	✓
British Airways	36	✓	✓	✓
Cityjet	23	✓	✓	✓
Dublin Airport	40	✓	✓	✓
IAA	20	-	-	-
Norwegian	4	✓	✓	✓
Ryanair	334	X*	✓	-
Stobart	103	✓	✓	✓
In Favour		**453**	**787**	**453**
Opposed		**334**	**0**	**0**

Source: Coordination Committee

**Ryanair voted against the increases in terminal parameters, however, the reason it gave was that it believes the infrastructure in Terminal 1 could handle a higher number of passengers than those proposed. Therefore, there was unanimous support for*

[7] Aer Lingus and British Airways share a common owner, IAG. An important part of Stobart's business is a franchise operation for Aer Lingus.

increasing the limits to a level at least as high as those proposed by Dublin Airport

2.35 The advice of the Committee is therefore to implement the terminal, stands, and referral parameters as proposed. The IAA abstained from this vote, as is their normal practice for decisions on terminal capacity.

2.36 We have published the formal advice from the Committee, the link is in Paragraph 1.10.

New Infrastructure

2.37 Aer Lingus raised a number of issues relating the provision of new infrastructure at Dublin Airport. In this decision, we consider the infrastructure which is currently in place or infrastructure which will be in place for Summer 2018. There are other processes for the discussion of capital expenditure allowances for particular projects and for the masterplan, including an interim capital expenditure allowance consultation which Dublin Airport plan to conduct later this year.

Other Issues

2.38 The responses from 3 airlines, who do not operate bases in Dublin, highlight the importance of slot regulation for promoting competition at the airport by enabling new entrants and the growth of operators with small operations at the airport. Under the regulations, new entrants get priority on 50% of the slot pool (new slots and slots which have gone unused are released to the slot pool).

2.39 Dublin Airport and Lufthansa observed that the process followed was transparent, with Dublin Airport noting the "extensive process of engagement and sharing of information over many months between CAR, Dublin Airport and other members of the Coordination Committee."

2.40 Dublin Airport also noted that "CAR has relied on a large body of evidence to reach its final decision".

3. Airfield Coordination Parameters

3.1 The Commission has decided to amend the runway coordination parameters in accordance with our Draft Decision and the final proposal from the Coordination Committee.[8] The full set of parameters is laid out in the appendix. The changes are as follows:

Table 3.1: Changes to Runway Limits from Summer 2017

UTC Hour	Departures	Arrivals	Total
0500	+1		
0600	+1		
0800	-4	+2	+1
0900		+1	+2
1100			+1
1200	+1		
1500	+1		+1
1600	+1		
1700			+2
2200		+2	

3.2 The stand parameter will be retained as a hard constraint. Where demand for stands exceeds supply, the excess movements are referred to Dublin Airport for detailed assessment. If the issue cannot be resolved, a slot will not be allocated.

Helios Airfield Modelling

3.3 As described in Section 2, the validation process for the airfield model was comprehensive, involving close collaboration between Helios, the Commission, and stakeholders. Following this process, we would make the following key observations regarding the Summer 2016 baseline model:

- Key simulated metrics show a close match with the actual data from the Summer 2016 Design Day, both in magnitude and daily profile. These metrics include taxi out times, counts of aircraft coming on block, off block, lifting off, touching down, runway occupancy times and runway throughput.
- 99.3% of aircraft in the simulation use the same stand as was the case on the Summer 2016 Design Day.
- The number of tows in the simulation in general shows a good match to the number of tows on the 2016 Design Day.
- Taxiway, stand, runway, and runway exit usage restrictions and patterns have been implemented in the model.

3.4 We have published the final airfield validation document, which includes the Summer 2016 baseline model. The full assessments of each scenario described in this section are also

[8] In meetings of the coordination committee this was referred to as Wish List 3

published (link in Paragraph 1.10).

3.5 Runway capacity limits are set based on Runway 28 only, as this is the runway on which the majority of movements take place. Where Helios have included results for Runway 10, this is provided for information purposes only.

3.6 The model was updated for any changes in infrastructure that were put in place for Summer 2017. A forecast Summer 2018 schedule was then simulated in the model, assuming the proposed changes to the runway limits to be in effect. In our view, the best way to assess the proposed airfield capacity increases is to analyse the estimated effect on two related metrics: taxi out time and departure ground delay.

3.7 Taxi out time measures the time elapsed from the aircraft coming off blocks until it crosses the runway stop bar 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 key results from this comparison are summarised in Table 3.2.

Table 3.2: Summer 2018 Forecast Schedule relative to Summer 2017 Design Day Schedule

Metric (minutes and seconds)	Period	Summer 2017	Summer 2018	Difference
Taxi out time	Daily average	11:03	12:32	+1:29
Taxi out time	Peak average	20:09	25:47	+5:38
Departure ground delay	Daily average	3:52	5:09	+1:17
Departure ground delay	Peak average	11:19	16:55	+5:36

Source: Helios main report. Average times are based on a rolling 10 minute window. Peak times refer to the window with the highest average value.

3.8 As referenced in Section 2, a similar comparison was modelled by Dublin Airport using its own airfield model. The results are similar to those set out by Helios. The results contained in Table 3.2 were communicated to the Coordination Committee on 25 August 2017.

3.9 It should be noted that most of the additional movements in the Summer 2018 forecast schedule could be accommodated within the existing 2017 runway limits. The results set out in Table 3.2, therefore, should not be viewed as an estimation of the effect on airfield delay of a decision to implement the proposed changes. Part of the estimated increases is caused by additional movements that are likely to occur regardless of any increase in the runway limits.

3.10 To better isolate the direct effect of this proposal, we asked Helios to compare the Summer 2018 scenario above with the Summer 2018 forecast schedule coordinated to the Summer 2017 limits. Assuming that demand materialises as expected, this comparison shows what the direct effect of the proposed increase would be relative to leaving the parameters unchanged. The key results are set out in Table 3.3.

Table 3.3: Summer 2018 Forecast Schedule, Coordinated to Summer 2017 and Proposed 2018 Limits

Metric (minutes and seconds)	Period	2017 Limits	Proposed limits	Difference
Taxi out time	Daily average	12:17	12:32	+0:15
Taxi out time	Peak average (AM)	24:11	25:47	+1:36
Taxi out time	Peak average (PM)	17:50	20:14	+2:24
Departure ground delay	Daily average	04:57	05:09	+0:12
Departure ground delay	Peak average (AM)	15:07	16:55	+1:48
Departure ground delay	Peak average (PM)	09:08	11:29	+2:21

Source: Helios additional scenarios. Average times are based on a rolling 10 minute window. Peak times refer to the window with the highest average value.

3.11 The 0500 hour is the peak hour for departures. As can be seen in Table 3.1, the proposal adds 1 extra departure movement to the limit in this hour, which would take it from 35 to 36. In each modelled schedule, the 0500 hour is full of departures, as is the case in reality. In the 0600 hour, it was proposed to also add 1 extra departure to the limit, bringing it from 30 to 31. However, the forecast schedule includes only 28 departures in this hour. Thus, there is scope for additional departure slots to be allocated; indeed, we note that the limit has been reached on certain days in the current season.

3.12 Given that the departure metrics peak between 0500 and 0700, and that the relative firebreak provided by the 0600 hour could potentially be undermined by additional departures, we asked Helios to add three departures in the 0600 hour to the forecast schedule. The schedule was then coordinated according to both the Summer 2017 and the proposed Summer 2018 runway limits, such that in both scenarios, the departure limits for 0500 and 0600 are reached. Results from this comparison are set out in Table 3.4.

Table 3.4: Summer 2018 Forecast Schedule with three extra Departures in 0600 UTC, Coordinated to Summer 2017 and Proposed 2018 Limits

Metric (minutes and seconds)	Period	2017 Limits	Proposed limits	Difference
Taxi out time	Daily average	12:37	12:44	+0:07
Taxi out time	Peak average (AM)	26:06	27:39	+1:33
Taxi out time	Peak average (PM)	17:50	20:14	+2:24
Departure ground delay	Daily average	05:09	05:23	+0:14
Departure ground delay	Peak average (AM)	16:54	18:40	+1:46
Departure ground delay	Peak average (PM)	09:08	11:29	+2:21

Source: Helios additional scenarios. Average times are based on a rolling 10 minute window. Peak times refer to the window with the highest average value.

3.13 We summarise the Helios results as follows:

- The forecast Summer 2018 schedule, combined with the proposed parameters, leads to an average increase in accumulated ground delay, and consequently taxi out times, of 1.5 minutes across the day relative to Summer 2017. The average increase peaks at 5.5 minutes at approximately 6 am.
- Much of the additional delay is caused by increases in movements within the current limits.

- The direct effect of the proposed increases is small when the metrics are averaged across the whole day. The proposed changes in the afternoon peak hours (1500, 1600, and 1700) are the most significant in terms of additional delay and taxi time, with a difference in the peak in this period of 2.5 minutes, although in absolute terms, the delay in this period remains lower than in the morning peak (0500 and 0600). In the morning, the difference is 1.5 minutes.
- Adding 3 departures in the 0600 hour, and then coordinating as necessary to fit the respective limits, does not significantly alter the effect of the decision. It does, as expected, increase the magnitude of delay in that hour whether the current limits or proposed 2018 limits are in place.

3.14 At the Coordination Committee meetings, a stakeholder was critical of the fact that bussing to remote stands has not been incorporated into the airfield modelling. It also stated that towing operations have not been properly modelled.

3.15 As stated above, taxi out times and departure ground delay are the key metrics for the purposes of this assessment. Buses on the airfield must give way to aircraft, and thus the buses themselves do not affect these metrics. We understand that if buses are delayed by obstructions, whether by aircraft or ground traffic on the apron, the delay could lead to a late departure from a remote stand. A late departure could in turn have an effect on departure ground delay, either positive or negative.

3.16 Within reason, it is the responsibility of the airline in question to ensure that adequate time is allocated to ensure that bussing operations are efficient. This is therefore an issue which relates to operational planning by the airline rather than airfield capacity. As noted in Section 2, our view is to set parameters based on the capacity of the infrastructure without factoring in operational inefficiencies. Therefore, incorporating assumptions relating to inefficient bussing would be inappropriate; on the other hand, if bussing is efficient, it will not affect taxi-out times or ground delay. In any case, we have seen no evidence to suggest that such a knock-on effect is actually occurring. Table 3.5 shows that overall, the On-Time Performance of aircraft using bussing gates has been consistently and significantly higher than those using contact stands.

3.17 Towing of aircraft on and off stand is included in the airfield model. The modelling has captured its negative effect on taxi times and ground delay. As noted above, the number of tows which occurred in the 2016 baseline model matches well with the actual data. Towing operations in the airfield model are not hard coded in terms of when they happen or based on assumptions as to duration. Instead, the timing and duration of tows are optimised by the software. This is consistent with our view that the parameters should be declared based on the infrastructure, without building in operational inefficiencies.

3.18 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.

NATS Runway Modelling

3.19 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 assess 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 purpose of the airfield models is to assess the effects of the Summer 2018 forecast schedule on a range of metrics, under different assumptions, across the entire airfield. The main difference is that our modelling and that of Dublin Airport includes modelling of the runway, taxiways and stands whereas NATS assesses the runway only.

3.20 In practice, slots could not be allocated such that the runway limits are completely filled due to the hard constraint on stands.

3.21 NATS modelled the final proposed parameters and the 10-minute delay criterion was not breached.

On Time Performance (OTP) and Taxi-out Times

3.22 Table 3.5 shows on time performance (OTP) for Summer 2015, 2016 and Summer 2017 to date.

Table 3.5: On Time Performance by Pier at Dublin Airport

	S15	S16	S17*
Pier 1 Remote	80.9%	82.3%	87.2%
Central Apron	84.5%	83.9%	85%
South Apron	77%	82.5%	84.9%
Pier 2	79.2%	73.2%	73.7%
5G	80.3%	74.6%	73.3%
Pier 1 Contact	78.5%	71.5%	73.3%
Pier 4	72.5%	76.6%	73%
Pier 3	74%	71.2%	69.5%
Overall	76.9%	74.7%	74.5%

Source: Dublin Airport

** Summer 2017 until 10 September 2017*

3.23 Following a reduction in OTP in Summer 2016 compared to Summer 2015, this trend has not continued into Summer 2017, despite significant traffic growth and no major changes in airport infrastructure or operating procedures. There are no large differences in OTP across different areas of the airfield with the exception of bussed stands, which have consistently demonstrated better OTP than contact stands.

3.24 Actual taxi out times in the morning peak have improved slightly relative to Summer 2016, on both runways 28 and 10. This improvement averages out at approximately 2 minutes across the airfield; again, there is no great variation across different areas of the airfield.

Draft Decision - Airfield

3.25 The Commission's Draft Decision was to amend the runway coordination parameters in accordance with the final proposal from the Coordination Committee.[9]

3.26 It is clear that there is a trade-off between ground delay and runway capacity, particularly in

[9] In meetings of the coordination committee this was referred to as Wishlist 3

the peak periods, where the marginal delay caused by the addition of movements is higher. However, where there is demand for additional movements, and these can be delivered without a substantial increase in delay, it is in the interests of users for us to declare increased capacity accordingly.

3.27 Our view, as set out in the Draft Decision, was that the evidence demonstrated that the proposed increases are feasible. Our Draft Decision to alter the limits was based on the following factors:

- The Coordination Committee advised us to increase the runway capacity as proposed.
- The Helios assessment shows that the direct effect of the proposed Summer 2018 limits relative to the Summer 2017 limits is likely to be limited, with overall delay across the day averaging out in both scenarios. Average delay is likely to increase by approximately 1.5 minutes and 2.5 minutes in the morning and afternoon peak windows respectively.
- The NATS assessment shows that the runway can handle the additional movements without breaching a 10 minute runway holding delay criterion.
- The IAA are confident they can handle the additional movements on the runway.
- OTP and taxi out time statistics have been maintained or improved from Summer 2016 despite the increase in traffic.

3.28 The Summer 2017 season demonstrated that additional movements need not necessarily lead to increases in delay or a reduction in OTP. We recognise that this is due to the efforts of a range of stakeholders.

Responses to Draft Decision- Airfield

3.29 Aer Lingus opposes any increase in the runway coordination parameters. It states that the proposed increases will lead to increased delay on the airfield, the effects of which will impact Aer Lingus disproportionately, and also damage the reputation of Dublin Airport as a connecting hub.

3.30 Aer Lingus states that the Helios airfield modelling omits key factors and thus understates the impact of amending the runway parameters as proposed. In particular, it criticises the fact that bussing has not been modelled, claiming that the Helios report "acknowledges that bussing operations are constrained due to runway congestion". It claims that the modelling shows that a significant amount of additional towing would be required, and without knowing which airlines will incur these additional tows, the Commission is not in a position to properly assess this operational constraint. Aer Lingus states that it will incur the vast majority of these additional tows at the airport. It comments that the Commission has disregarded these two operational constraints in the Draft Decision.

3.31 The Aer Lingus submission is also critical that on-the-day disruption has not been modelled, and furthermore does not consider "a situation where all available slots are allocated".

3.32 Aer Lingus provide some statistics related to disruption it has been experiencing at Dublin Airport in 2017. On the airfield, it highlights a significant increase in delay related to airport facilities, increases in towing and bussing, and increased taxi in times. It states that taxi out

times off Piers 3 and 4 are higher than the rest of the airport.

3.33 Dublin Airport supports the proposed amendments to the runway limits. It notes that the feasibility of the amendments is supported by the modelling work carried out by NATS and by Dublin Airport itself. In addition, it notes the Helios modelling estimates only a marginal direct effect on departure delay. Dublin Airport states that the proposals are demand-led, targeted, incremental changes, which will better meet the needs of users than leaving the parameters unchanged.

3.34 Dublin Airport states that overall, OTP and taxi out times have been maintained or improved relative to Summer 2016.

3.35 Dublin Airport supports the retention of a stand parameter as a hard constraint.

3.36 As noted above, Cathay Pacific, Icelandair, Fedex and Lufthansa express support for the Draft Decision as a whole.

Final Decision- Airfield

3.37 Having regard to the responses received, our final decision is to implement the proposed changes to the runway limits as set out in the Draft Decision, and also to maintain the hard constraint on stands. The airfield parameters are laid out in full in the appendix.

3.38 We have not been convinced by the arguments put forward against increasing the airfield coordination parameters, nor have we been provided with additional analysis which would suggest a different decision should be reached. The decision to increase the runway limits is in the best interests of air passengers. We note the support of prospective new entrants for the release of additional capacity. New entrants add to airline competition and provide further choice to air passengers.

3.39 We do not accept that any relevant airfield factors have been omitted from the Helios model; the validation process clearly demonstrated that the model closely replicates reality. It is important to distinguish between operational factors, to which we must have regard, and operational inefficiencies, to which we must not. Operational factors are requirements regarding the use of airport infrastructure, such as minimum aircraft separations and restrictions on taxiway or stand usage. Such factors have been implemented in the Helios modelling. As noted in Section 2, inefficiencies resulting from sub-optimal use of infrastructure should not be included when assessing airport capacity. Neither should on-the-day disruption, which by definition is unpredictable and intermittent, be included when setting parameters to apply across a full season.

3.40 Efficient towing has been included in the modelling, capturing its effect on airfield metrics. In assessing the overall capacity of the airport, it is important to consider this effect. It is not relevant to this process, or indeed possible at this time, to decide which airlines will have aircraft towed off stand during Summer 2018. The aircraft which will actually be required to tow off stand will depend on the schedule operated by each airline.

3.41 Towing is governed by the Stand Allocation Rules, agreed between Dublin Airport and the Airline Operators Committee (AOC). The current rules state that any aircraft occupying a contact stand for more than 2 hours is liable to be required to be towed off stand. That is a question to be agreed between Dublin Airport and the airlines when drawing up the stand

plan for Summer 2018.

3.42 With regards to bussing, the Draft Decision set out why it is neither desirable nor necessary to include bussing in the airfield model (see paragraphs 3.15 and 3.16). At no stage did Helios make any comment to the effect that bussing operations at Dublin Airport are constrained due to runway congestion, or indeed due to airfield congestion generally. In summary, bussing has not been included because:

- Bussing is an operational planning issue for the airlines, not an airfield capacity issue. Efficient bussing will have no effect on airfield delay metrics. We have consistently stated that operational inefficiencies, including inefficient bussing, will not be factored in when setting coordination parameters.
- The above notwithstanding, there is no evidence of inefficient bussing affecting On Time Performance and consequently airfield delay metrics. Aircraft using remote stands have consistently demonstrated higher On Time Performance than those using contact stands.

3.43 Aer Lingus believes we should consider a situation where all available slots are allocated, presumably referring to the runway limits. This is not possible in the airfield model; the stands and taxiway infrastructure could not accommodate the many additional movements which this would entail. These additional movements could not all be allocated a slot, due to the hard coordination constraints on stands and terminals. Thus, the assessment is based on the best current information as to the likely additional movements in Summer 2018 relative to the 2017 Design Day, of which there are 37 in total. As described in above, as a further stress test we asked Helios to add departures in the 0600 hour such that the limit is reached in both the 0600 hour and the 0500 hour, even though the forecast Summer 2018 Schedule did not fill the 0600 hour. Thus, no more departures could be added in the morning peak compared to what has been modelled.

3.44 Aer Lingus notes an increase in delay minutes related to Dublin Airport infrastructure for departing aircraft in the first six months of 2017. Delay is self-reported by the airline; the airline assigns an IATA Standard Delay Code to the delay when reporting it.[10] For departure delays, there are two codes relating to the departure airport. Code 87 is intended to refer specifically to airport facilities, while code 89 can be used for a wide range of issues related to the departure airport. In practice, there is significant interchangeability between the use of codes 87 and 89. Thus the best way of assessing airport related delay is to consider both codes together. Aer Lingus has based its analysis on code 87 delay only. As can be seen in Table 3.6, across the airport code 87 delay has increased significantly, but code 89 delay has decreased. Overall there has been a reduction. A similar scenario applies to arrivals.

3.45 We have analysed this data by airline. The data for individual airlines is confidential but there is a similar trend to be seen across the airlines with major operations; an increase in code 87 delay and a reduction in code 89 delay. There is no significant difference in terms of airport attributable delay between airlines with major operations at Dublin Airport.

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

Table 3.6: Dublin Airport Related Delay

Code	Description	S16 delay minutes (to end Aug)	S17 delay minutes (to end Aug)	Change
Departures				
87	Airport Facilities	17,875	39,390	120%
89	Departure Airport	62,019	29,469	-52%
	Departures Total	**79,894**	**68,859**	**-14%**
Arrivals				
87	Airport Facilities	28,001	23,910	-15%
83	ATFM due to Destination Airport	1,208	2,401	99%
84	ATFM due to Destination Weather	4,238	1,274	-70%
	Arrivals Total	**33,447**	**27,585**	**-18%**
Overall Total		**113,341**	**96,444**	**-15%**

3.46 As set out in Table 3.5 there has been no overall reduction in OTP across the airport or significant changes across the various areas of the airfield.

3.47 Aer Lingus notes a small increase in taxi in time. As stated previously, the key airfield metrics for the purpose of this assessment are taxi out times and departure ground delay. Taxi in time is not a particularly relevant metric, as it is largely composed of unimpeded taxi in time rather than arrival ground delay. Average arrival ground delay is typically in the region of 1-2 minutes and thus a small increase in taxi in time is not significant.

3.48 Aer Lingus states that taxi out times are higher from piers 3 and 4 than across the rest of the airport. As stated in the draft decision, differences across the airfield are not significant. Average taxi out times across the airfield for 2017 are 14 or 15 minutes, with only the Central Apron (12 minutes) and Pier 2 South (13 minutes) in any way better. Taxi out times in the morning departures peak are also similar across the airport. Taxi out times from piers 3, 4 and the South Apron have improved by circa 1-2 minutes from Summer 2016, in line with the rest of the airport.

3.49 The evidence therefore shows that Aer Lingus is not suffering from airport related delay, reduced OTP, or increased departure ground delay over and above other airlines.

4. Terminal Parameters

4.1 We have decided to increase the hourly limit for departing passengers to 3,700 in both terminals and the hourly limit for arriving passengers in Terminal 1 to 3,550. We have also implemented the other adjustments to the parameters which were recommended by the Coordination Committee.

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 3,700 for both Terminal 1 and Terminal 2
- Remove the 2-hour rolling limit for departures in both terminals
- Increase the hourly limit for arriving passengers in Terminal 1 to 3,550

It also proposed retaining the hourly limit for arriving passengers in Terminal 2 of 3,050

Table 4.1: Departure and Arrivals Limits - Summer 2017 and Proposed Summer 2018

	Summer 2017				Summer 2018	
	Departures Hourly Limits	2 Hour Limit	Arrivals Hourly Limits		Departures Hourly Limits	Arrivals Hourly Limits
Terminal 1	3375	5400	3390		3700	3550
Terminal 2	3450	5040	3050		3700	3050

Hourly limit rolled every 10 minutes

Proposed Referral Limits – Dublin Airport

4.3 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.

4.4 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.

4.5 It recommended retaining the referral for CBP operations but extending it to cover the full day rather than just the 9.30 to 12.30pm window as in place for Summer 17.[11] This change has already been approved for Winter 2017.

4.6 There is currently a referral flag for Terminal 2 arrivals from 06:30 and 11:30 of 1,500 passengers per rolling hour. It is proposed that this is dropped.

Proposed Parameters – Other parties

4.7 No other party, except for Dublin Airport, made concrete proposals on changes to the

[11] These are operations which are processed through US customs and immigration control in Dublin rather than on arrival in the US.

coordination parameters for terminal buildings.

Load Factors

4.8 For the purposes of coordination, a load factor of 85% is currently used for scheduled flights. In reality, the current average load factor is 90% but it varies across airlines, type of route and time and day of flight. At the pre-meeting of the Coordination Committee there was some discussion on changing how load factors were applied in coordination. However, this discussion did not reach conclusions or result in any proposed changes.

Advice of the Committee

4.9 As set out in Table 2.2, the Coordination Committee has advised the Commission to amend the terminal parameters as proposed by Dublin Airport.

Modelling Conducted for the Commission

4.10 As discussed in Section 2, Helios have developed a comprehensive, validated, fast time simulation model of the terminal buildings. This model tracks the journeys of both arriving and departing passengers.

4.11 Helios have modelled the forecast schedule for Summer 2018. The full report published alongside this paper shows how the forecast schedule will affect the service level at key pinch points.

4.12 Overall the Helios modelling concludes that:

- the additional demand in Summer 2018 can be serviced by the available terminal infrastructure. It notes that there is additional capacity available in the terminal buildings throughout the day.
- additional demand in the morning departures wave will increase waiting times at security.
- the TSA Security Process is the limiting element of the US Preclearance area and any additional flights to the US should continue to be referred to the airport for assessment of options.
- the overall arrival capacity is sufficient, however, the increased demand does result in some increases to queuing times.
- the introduction of 20 e-gates before Summer 18 is likely to decrease immigration waiting times.

Departure Parameters

4.13 For the departing passenger journey, the limiting factor in both terminals is the security screening process. This has a physical maximum capacity:

- In Terminal 1 there are 15 processing lanes each capable of processing 235 passengers per hour giving a total capacity of 3525.
- In Terminal 2 there are 18 processing lanes each capable of processing 140.5 passengers per hour giving a total capacity of 2529.

In Terminal 2, in the peak hours, some 900 departing passengers will transfer from arriving flights and therefore do not present at central search – they go through the transfer facility.

4.14 Load factors for coordination are 85% whereas actual load factors are 90%. If the actual load factor remains at 90% for Summer 2018, then the proposed limits of 3,700 departing passengers in an hour would require the infrastructure to be able to deal with 3,917 departing passengers. If load factors were 100%, 4,353 passengers would depart in the peak hour.

4.15 When setting a departing passenger limit we need to be mindful of the timing of when people present themselves at security. In the peak hour, 3,700 passengers may be departing from the airport, but many of those will have processed security in the previous hour, or indeed the hour before that. Therefore, you can have a higher number of passengers departing in an hour than the hourly processing capability of security screening.

4.16 For example, if you have a flight with 100 passengers departing for western Europe at 11am, on average, 5 of those passengers would present at security screening before 8am, 42 between 8 and 9am, 45 between 9 and 10am and the remaining 8 would arrive in the final hour. This example shows that the infrastructural requirement of these 100 passengers is spread over a number of hours.

4.17 In addition, because departure movements tend to occur in waves rather than being evenly spread across the day, the peak level of departing passengers is not sustained beyond the peak hour. For example, in Terminal 1, while you might have 3,700 passengers departing in the peak hour of the morning, the 0500 hour, it is likely that only about 1,000 will depart in the 0400 hour and 2,000 in the 0600 hour.

4.18 Dublin Airport conducts extensive data collection on passenger show-up times compared to flight times using the scanning of boarding cards to collect the data. This is then used to plan the staffing requirements of the security process at any given time. This data also allows us to map the coordination parameters to the physical processing capacity of the security process. These show-up profiles were used by Helios in setting up the fast time simulation model.

4.19 In the Helios modelling, there were some 4,300 departing passengers in the busiest hour in Terminal 1, but when the show-up profiles were applied to this hour and all other hours, the maximum number of passengers presenting at security in Terminal 1 in an hour was about 3,000. This is less than the physical processing capacity of the security processing facility.

4.20 Terminal 2 is somewhat complicated by the fact that a large number of passengers do not present at central search. Some 900 departing passengers use the transfer facility. The same principles apply; Helios modelled some 3,900 passengers with flights departing in a single hour, and this had no adverse impact on security queue times.

4.21 To reach these maximum capacities the security area would need to be fully staffed with all lanes open. The assumption of being fully staffed allows us to establish the infrastructural limit and not a constrained limit due to operational decisions. This concept is discussed in Paragraph 2.9. Dublin Airport can, and do, increase staffing to match security screening demand and to ensure internal and external KPIs are reached.

4.22 Based on this analysis, our proposed decision was to increase the limits on departing passengers in both terminals.

Arrivals Parameters

4.23 Dublin Airport proposed to increase the limits for arrivals in Terminal 1 to 3,550, this is with 85% load factors. If the load factor was actually 90% this would represent 3,758 passengers. No change is proposed for Terminal 2 arrivals.

4.24 In both terminals, the limiting factor for the arrivals journey is the immigration process.

4.25 Once again, when deciding on coordination parameters we need to examine the capabilities of the infrastructure when it is fully staffed, as discussed in Paragraphs 2.24-2.28.

4.26 Given the number of booths available in the 2 processing areas in Terminal 1, the processing rates for EU and non-EU passengers, and the allocation of booths between the different types of passengers, the processing capacity of the immigration facilities of Terminal 1 is some 4,000 passengers per hour. The introduction of e-gates will likely increase this by a few hundred per hour. However, the full effect of e-gates is not yet known.

4.27 The Helios modelling uses 100% load factors (to fully stress the systems) and models 4,385 passengers arriving into Terminal 1 in the peak hour. When fully staffed, and with the e-gates operational, this results in peak queue times of about 12 minutes.

4.28 Given the ability of the physical infrastructure in Terminal 1 to process in excess of 4,000 passengers per hour, we propose to increase the coordination limit to 3,550 in line with the proposal of Dublin Airport and the advice of the Committee.

4.29 We are aware that currently there can be long queues experienced by passengers when presenting at immigration control. The analysis we have conducted suggests this is not a function of infrastructural limitations but rather a function of the staffing levels at the facilities. Staffing of these facilitates is not the responsibility of Dublin Airport. The facilities at Terminal 1 are staffed by the Irish Naturalisation and Immigration Service (INIS).

4.30 We will work with all stakeholders, including INIS, to ensure that the consequences of increasing these parameters is understood in terms of the number of presenting passengers which can be expected.

CBP Referral

4.31 The US Customs and Border Protection (CBP) for flights to the US is currently a referral limit. This means that a new slot request wishing to use these facilities will be “referred” to the airport to examine whether it can be accommodated. If the facility is at capacity, this process allows for the discussion of possible solutions, for example, a time change, or proceed with the flight but do not use CBP, etc. CBP is not a hard limit; that is, a slot can still be allocated if this element is at capacity provided there is stand, terminal, and runway capacity available.

4.32 Dublin Airport proposed maintaining this approach but extending it to the full day. The Coordination Committee supported this.

4.33 Given there is the option to fly to the US with or without preclearing, this approach is currently superior to having a hard limit.

4.34 We therefore proposed to retain the CBP referral extending the time in which it applies to the

full day, in line with the decision for Winter 2017.

Check-in Desk Referral

4.35 Check-in desks are not a hard limit. However, there is a referral limit for Terminal 2 desks 1-28 (excluding Aer Lingus). If a slot request results in the demand for desks in this area exceeding 28 then this is flagged to Dublin Airport. The airport can look for solutions to allow the slot to be allocated.

4.36 There was no proposal to change this.

4.37 Given this approach is superior to refusing the slot, we proposed retaining this referral flag.

Removal of T2 Arrivals Referral

4.38 The airport proposes removing the referral flag of 1,500 passengers per rolling hour in Terminal 2. The Coordination Committee agreed with this proposal. The modelling work conducted by Helios did not identify a need to retain this referral flag. We proposed removing this from the coordination parameters.

Other Issues

4.39 At the Coordination Committee meeting, there was some discussion of the baggage handling capabilities of Terminal 2. However, in terms of coordination parameters, no proposals were made and it was not part of the advice received by us from the committee. The Helios analysis of the baggage hall showed no issues with capacity; this analysis will be in their full capacity report to be published later.

Draft Decision - Terminals

4.40 Based on the above analysis, the Draft Decision proposed to amend the coordination parameters in line with the proposals of Dublin Airport and the advice of the Coordination Committee. The main changes proposed were an increase in the hourly departure limit for both terminals to 3,700/hour and to increase arrival limits in Terminal 1 to 3,550.

Responses to Draft Decision- Terminals

4.41 Aer Lingus does not agree that full staffing should be assumed when assessing the terminal capacity, making particular reference to CBP, security screening and immigration.

4.42 Aer Lingus believes that baggage handling and CBP facilities need to be improved before any increase in “peak capacity” can be justified. It notes an increase in CBP related delay and in the rate of short shipped bags.

4.43 Aer Lingus criticises the Helios modelling for not including “the recent systematic failures” in baggage handling, or a significant increase in transfer passengers.

4.44 Dublin Airport supports the proposed increase in the hourly limits for departing passengers to 3,700 in both terminals and to 3,550 for arriving passengers in Terminal 1. It states that the modelling work carried out by Helios and Dublin Airport itself show that the proposed increases can be handled by the terminals without a material reduction in the level of service for passengers.

4.45 Dublin Airport supports the retention of the referral limits on Terminal 2 check-in and CBP as proposed in the draft decision. It states that referral limits are preferable to hard limits in these cases, as they allow for the discussion of a range of possible solutions.

Final Decision - Terminals

4.46 Our final decision is to amend the hourly terminal limits and retain the Terminal 2 check-in and CBP referral limits, as proposed in the Draft Decision and as advised by the Coordination Committee.

4.47 No respondent suggested any specific amendments to the proposed hourly limits. We agree with Dublin Airport that the modelling shows the increases can be handled by the terminal infrastructure without any significant reduction in the level of service. It is therefore in the interests of users for us to declare increased terminal capacity accordingly. For this reason, and for the reasons set out above as part of the Draft Decision, these increases have been implemented in this decision.

4.48 We have previously set out our view on why full staffing should be assumed when assessing the capacity of terminal infrastructure, see Paragraphs 2.24-2.28.

4.49 Aer Lingus states that issues relating to CBP, baggage handling, and transfer passenger facilities need to be resolved in advance of any increase in peak capacity. Aer Lingus voted in favour of the proposed terminal capacity increases at the final Coordination Committee meeting. It also voted in favour of the proposed CBP and check-in desk referral limits.

4.50 Where possible, coordination parameters should be targeted at specific airport infrastructure, thus avoiding a situation where a slot request is denied due to infrastructure which is not relevant to the request. Therefore, it would not be appropriate to consider these elements when setting runway capacity.

4.51 Helios' assessment of the baggage hall concluded that its capacity is not a limiting factor within the terminal system. For this reason, it is not appropriate to limit terminal capacity due to the baggage hall, nor to set a specific baggage hall coordination parameter. No proposal, from any party, was made to set any specific baggage hall parameter.

4.52 Similarly, we have not received any proposals, from any party, on a coordination parameter for transfer passengers.

4.53 Helios' modelling work included a full assessment of the CPB process. TSA security was identified as the limiting element within that process. For this reason, as well as the advice of the Coordination Committee, we have set a referral parameter on CBP such that any new CBP flights or schedule changes will be assessed individually as to whether they can be processed through CBP. As most flights departing from Dublin Airport do not use CBP facilities, it would not be appropriate to view CBP as a limiting factor when setting the overall terminal capacity.

4.54 The terminal parameters are laid out in full in the appendix.

5. Appendix 1: Coordination Parameters at Dublin Airport for IATA Summer 2018 Season

The Commission for Aviation Regulation has declared the following scheduling limits for the Summer 2018 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	**24**	**25**	**43**
0900	**24**	24	**43**
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	**44**
1800	23	24	37
1900	23	22	38
2000	25	22	38
2100	30	25	36
2200	**28**	25	32
2300	23	25	32
Totals	584	622	950

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	3,700	3,550
Terminal 2	3,700	3,050

Notes:

1) The hourly limit for passengers is rolled every 10 minutes.
2) Load factors of 85% and 90% are applied to Scheduled and Charter services respectively.

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