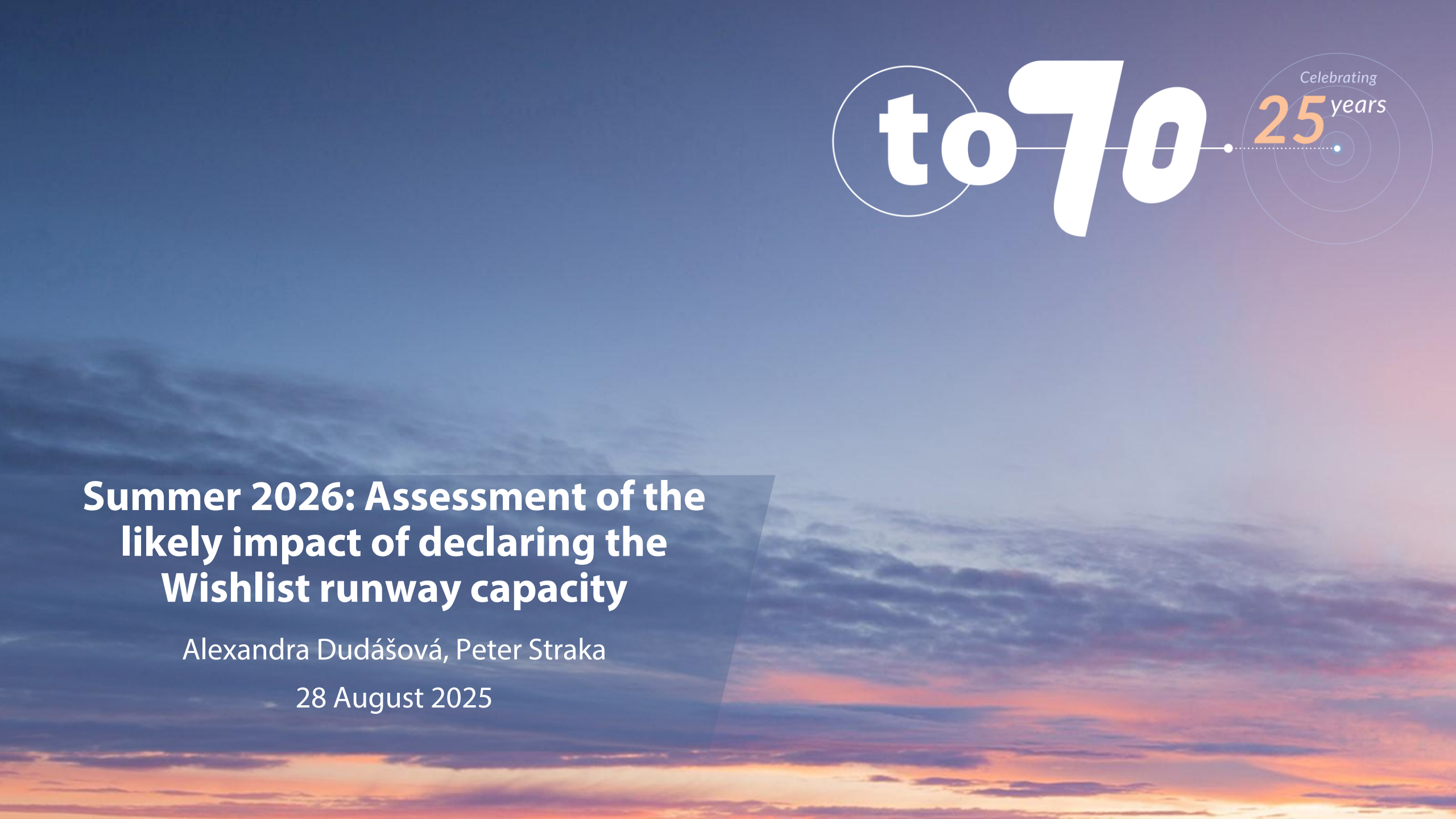

Summer 2026: Assessment of the likely impact of declaring the Wishlist runway capacity

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28 August 2025

Contents

Context

The Irish Aviation Authority (IAA) is responsible for determining the parameters for slot allocation at Dublin Airport.

To ensure that optimal parameters are set, the IAA has instructed To70 to undertake airfield fast time simulations in preparation for the Summer 2026 (S26) season at Dublin airport.

This document provides results from two simulated scenarios:

- S26 flight schedule coordinated to the proposed S26 limits and
- S26 flight schedule coordinated to the existing S25 limits.

✈ Both scenarios were tested with the Northern runway:

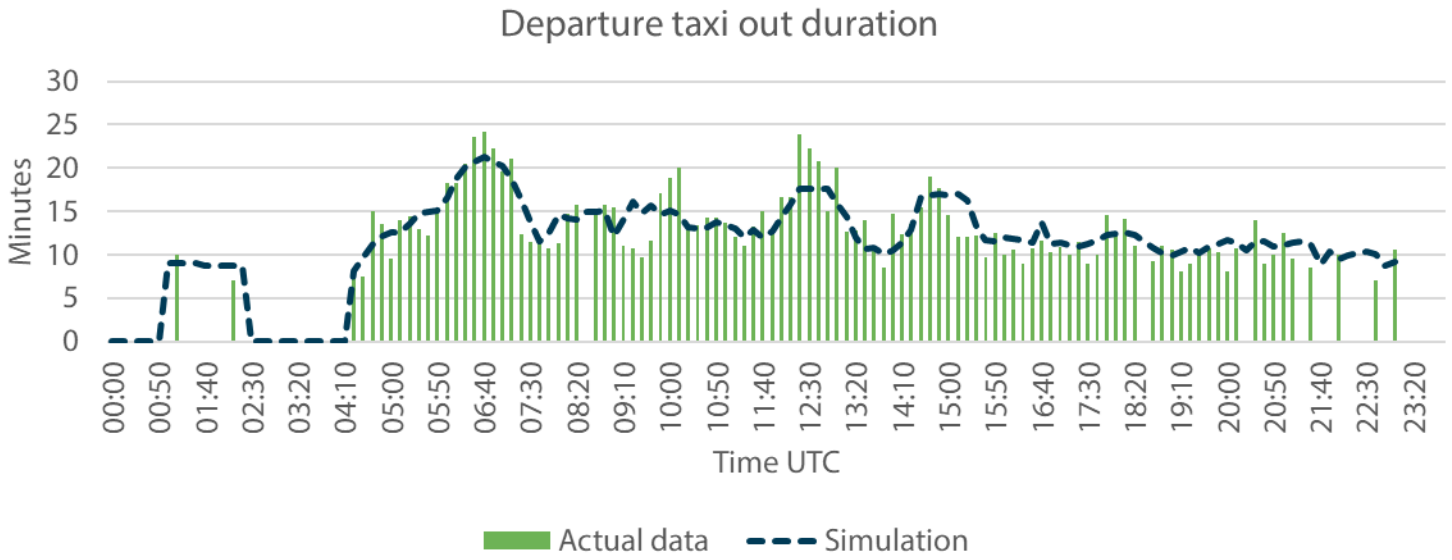
- Open from 0600 UTC (current operational practice) and
- Open from 0500 UTC (proposed change).

Model validation

Model validation

- Based on the model developed to support the Coordination Committee decisions in 2017 and used since.
- Historically validated against a number of design days from previous seasonal assessments.
- Calibrated against a single day of S25 operations (Friday 30 May 2025):
  - 399 arrivals and 404 departures, incl. GA and cargo,
  - Arrivals on 28L only,
  - Departures from 28L 2200-0559 UTC,
  - Departures from 28R 0600-2159 UTC,
  - Run from actual block times to take into account all delays.
- A comparison set of airside performance metrics is provided on the following slides.

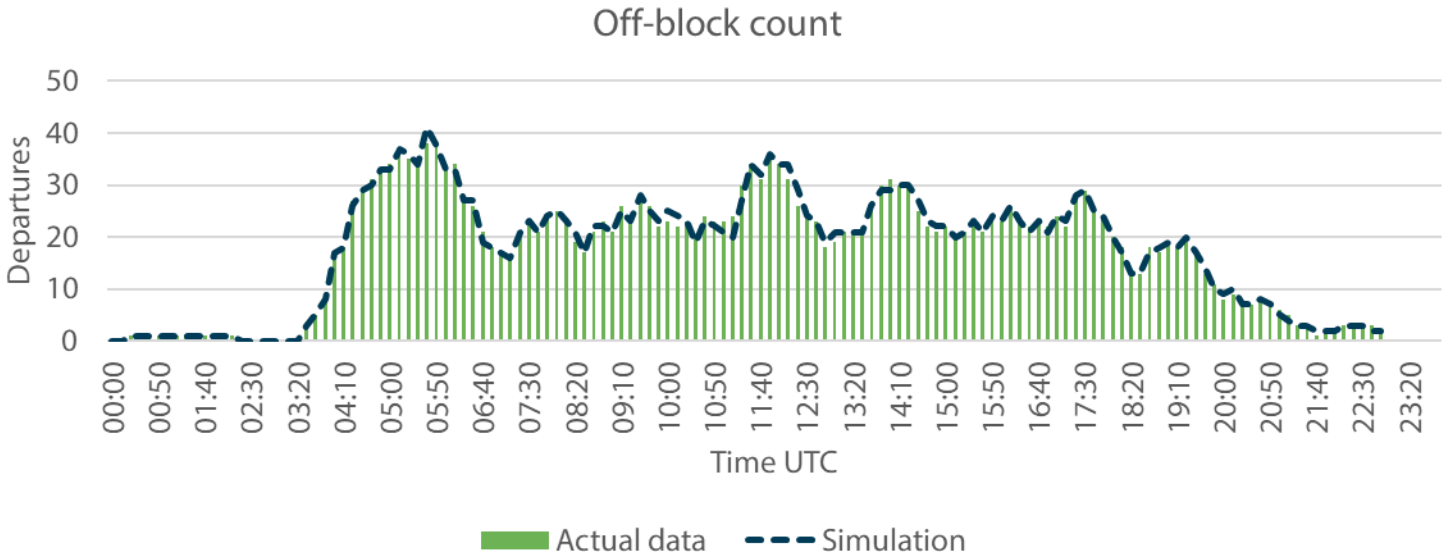
Calibration of departure performance



Metric definition:

Time duration between the off-block time and aircraft lifting off.

*This graph is presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

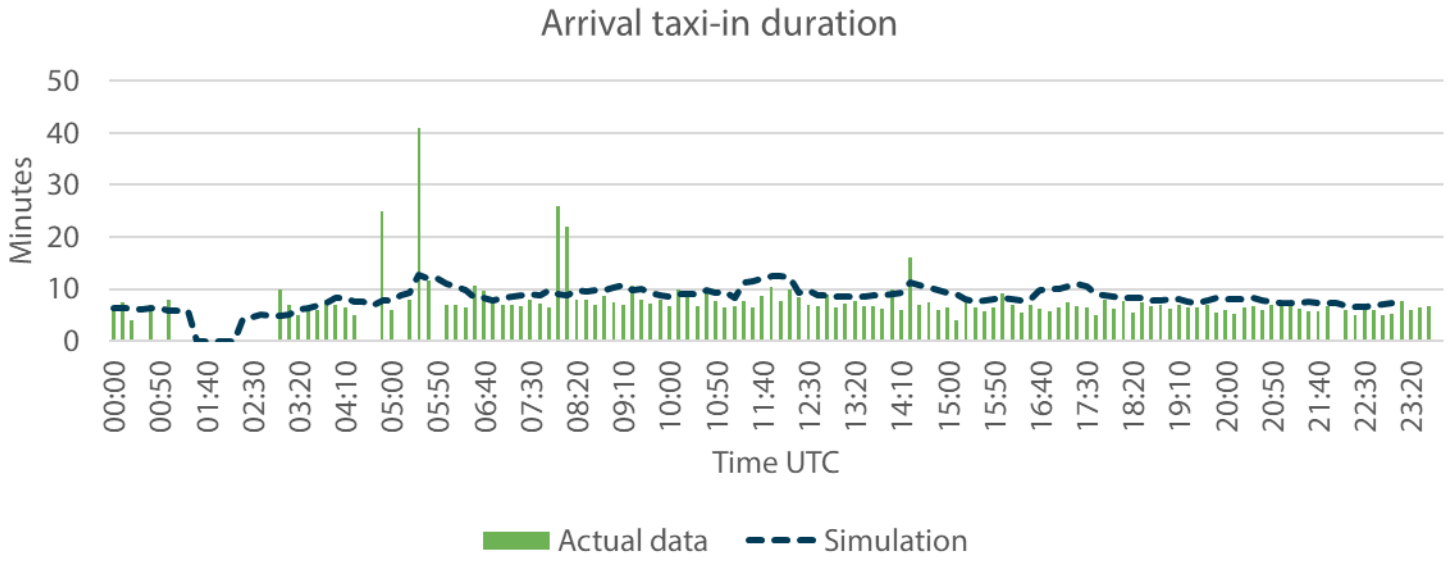


Metric definition:

The number of aircraft that have been pushed back in the last rolling period. The count is incremented when the aircraft leaves its departure parking position (either being pushed back at gate or taxiing / pulled away from a parking position).

* This graph is presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

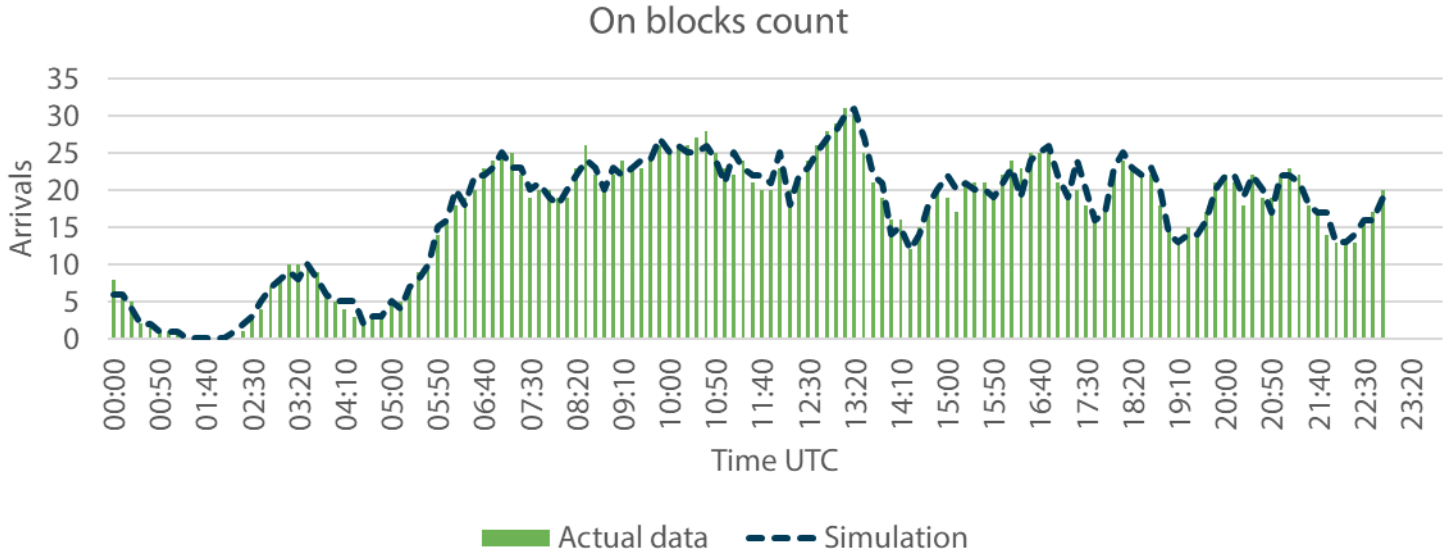
Calibration of arrival performance



Metric definition:

Time duration between touch-down and aircraft parking on-blocks.

*This graph is presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

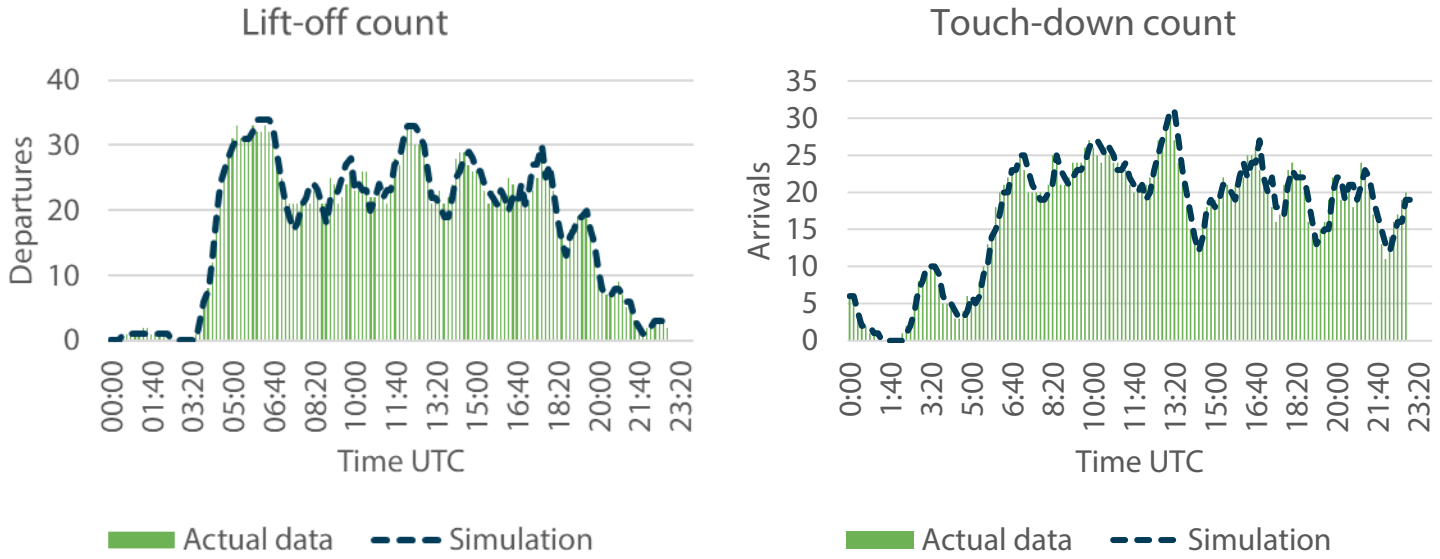


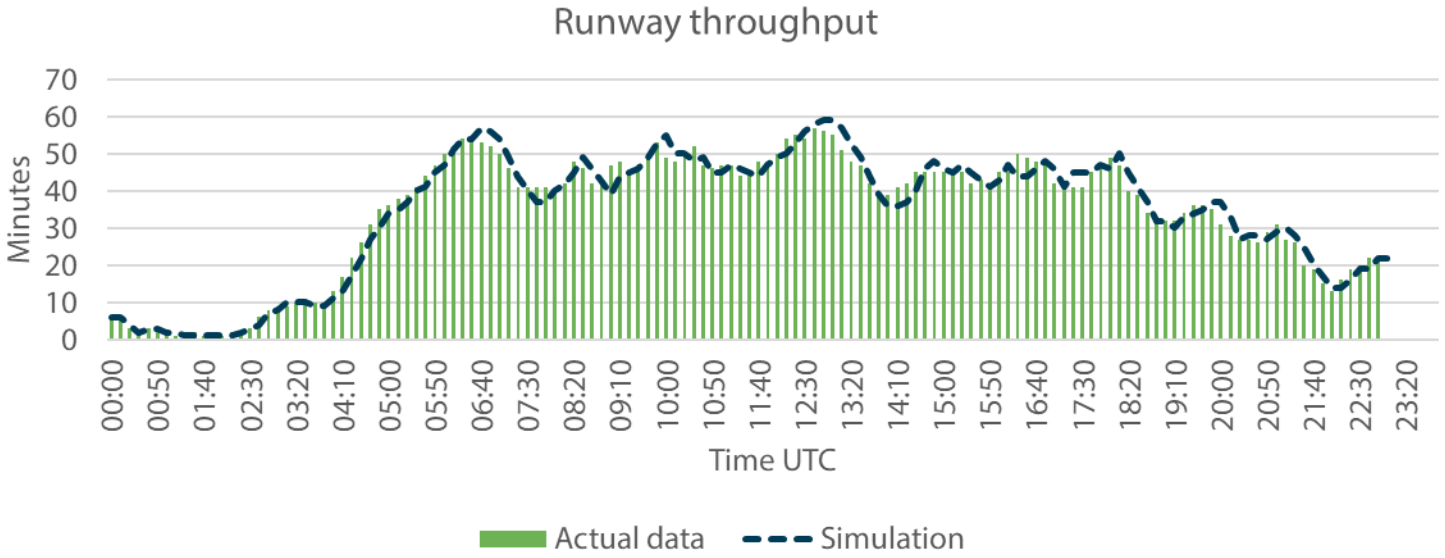
Metric definition:

The number of aircraft that have reached their arrival parking position in the last 10-minute rolling period. The count is incremented when the aircraft reaches its in-blocks position.

* This graph is presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

Calibration of runway performance





Metric definition:

Lift-off count: The number of aircraft that have lifted off in the 60-minute rolling period. The count is incremented when the aircraft passes over the opposite end of the runway.

Touch-down count: The number of aircraft that have touched down in the 60-minute rolling period.

Runway throughput: Sum of all aircraft touching down and lifting-off in the 60-minute rolling period.

* All graphs are presented as a rolling 60-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

Result of model validation exercise

- **As the metrics calculated through the FTS model closely match the real-world data, both in terms of magnitude and profile shape, the model can be considered a satisfactory representation for the purpose of evaluating the impact of the proposed changes on flight schedules.**

- The model is considered to be valid if it is a sufficiently accurate representation of the corresponding real-world problem from the perspective of the intended uses of the model. "Valid" for a simulation does not mean the same as “indistinguishable from the real-world system”, even though in this case there is a close match.

Summer 2026 assessment

Task description

The purpose of this comparison is to assess the likely effect of either:

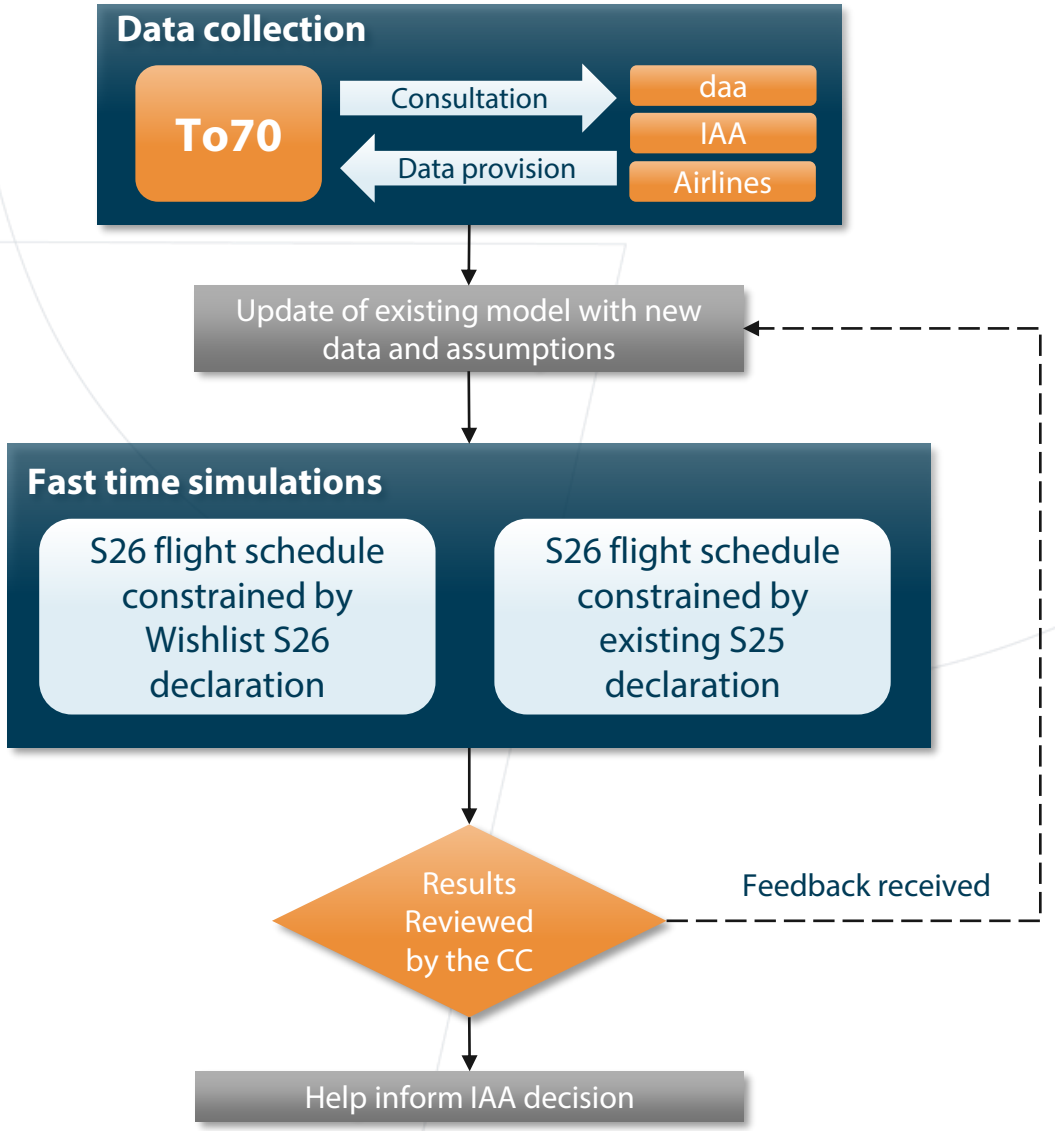
- declaring an increased runway capacity, as per the Summer 2026 Wishlist proposal, or
- maintaining the Summer 2025 capacity declaration limits.

- In both cases it is presumed that the Summer 2026 schedule of increased demand materialises as expected.

- The same number of movements are modelled in all cases, the difference being the limits to which they are coordinated. This difference is therefore a best current information estimate of the effect of a decision to increase the runway limits on a busy Summer 2026 day.

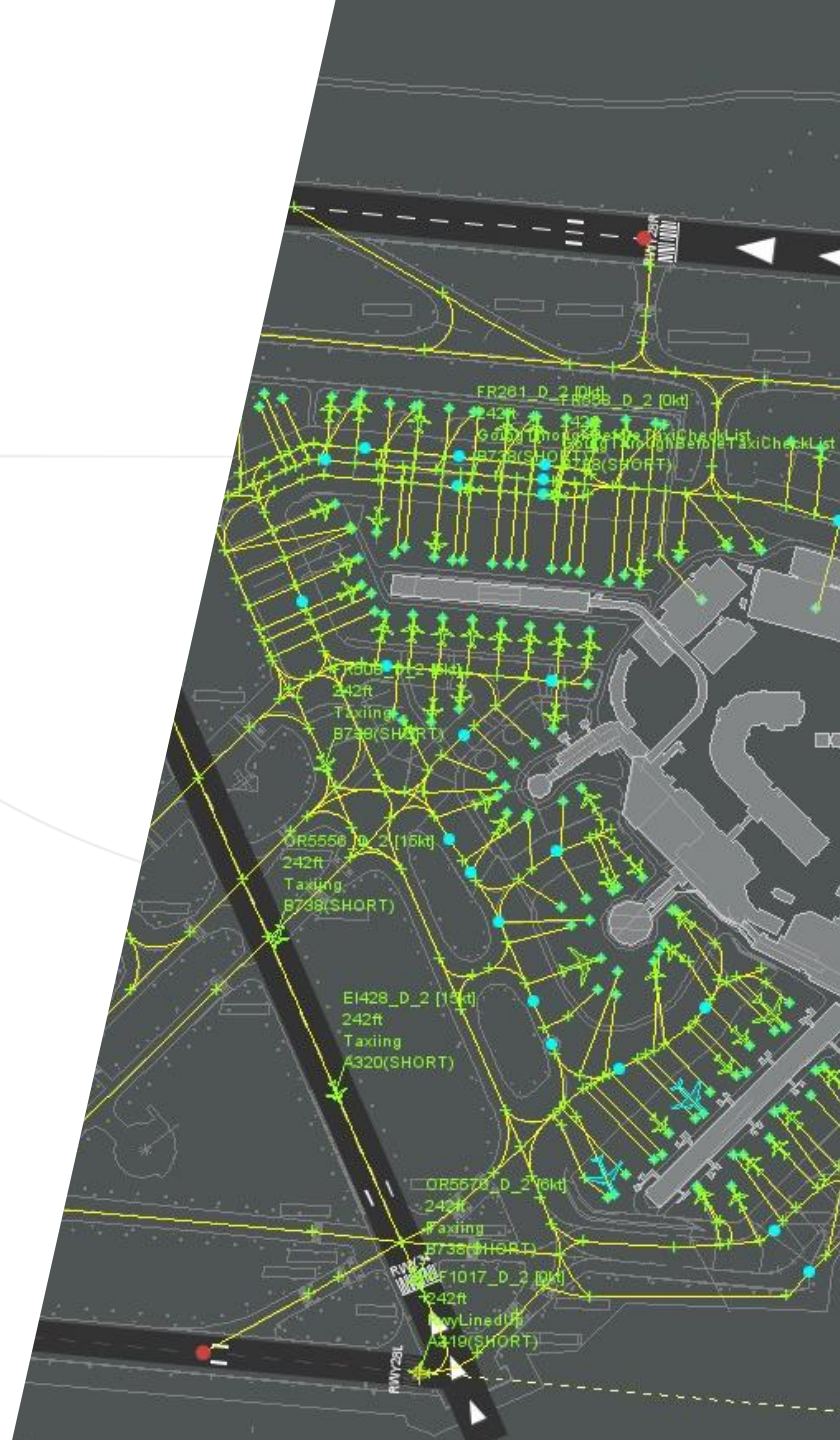
Approach and key changes in the S26 model

- Dual code E taxiways B1/Z to / from South Apron,
- TWY A permanently closed,
- TWY B2 bi-directional,
- Underpass commencing on TWY W2,
- Airfield drainage project on TWY W2,
- Pier 1 West stands complete – TWY F-INNER becomes Code E compliant.
- Alternative runway opening schedule was tested alongside the existing schedule:
  - RWY 28R opened from 0600 UTC (current practice)
  - RWY 28R opened from 0500 UTC (what-if case)



Summer 2026 flight schedule

- The flight schedule used for modelling of all scenarios:
  - Contains a total of 877 flights (441 arrivals and 436 departures);
  - Contains 43 new arrivals and 37 new departures;
  - Does not contain helicopter, military, state or medical flights.



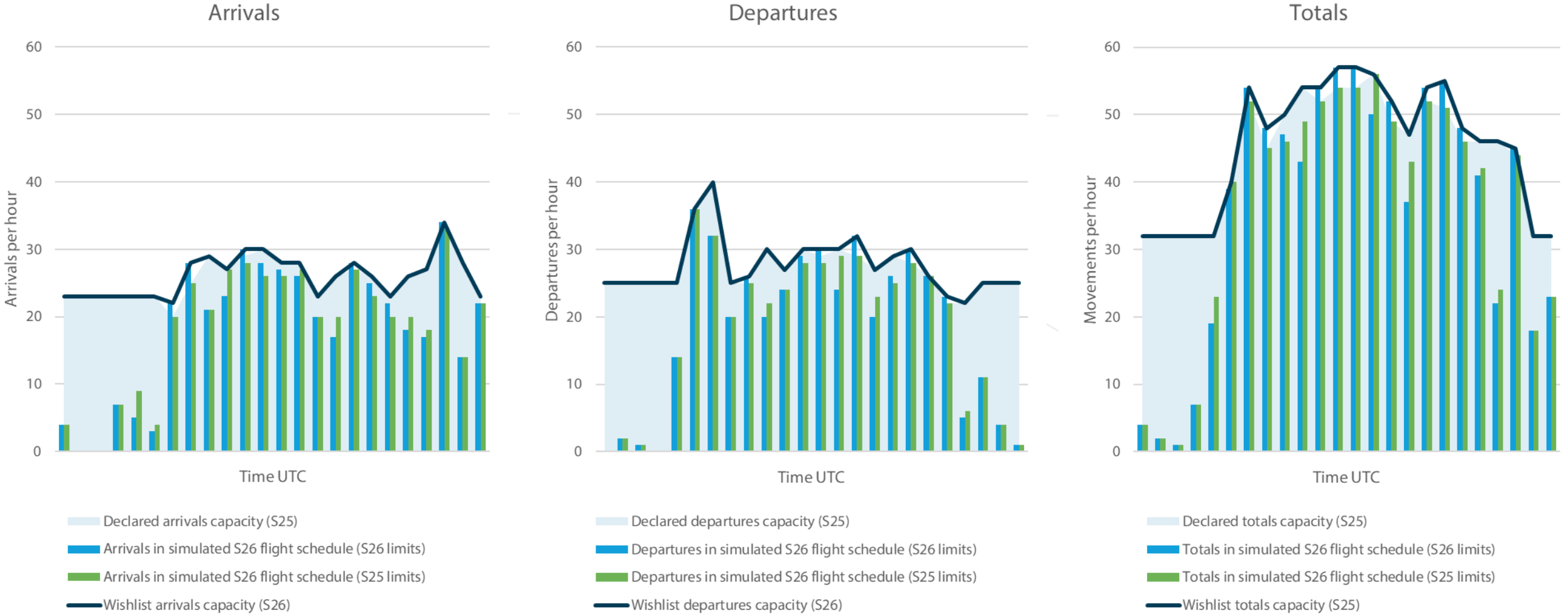
S26 Wishlist proposed by Dublin Airport

Hour UTC	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
Arrivals																									
Existing S25 arrivals capacity	23	23	23	23	23	23	20	25	29	27	29	30	28	28	23	26	27	26	23	26	27	33	28	23	**616**
Proposed S26 arrivals capacity	23	23	23	23	23	23	22	28	29	27	30	30	28	28	23	26	28	26	23	26	27	34	28	23	**624**
Difference (against S25 declaration)	0	0	0	0	0	0	2	3	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	**8**
Departures																									
Existing S25 departures capacity	25	25	25	25	25	36	40	25	25	30	27	30	29	30	29	27	29	28	26	22	22	25	25	25	**655**
Proposed S26 departures capacity	25	25	25	25	25	36	40	25	26	30	27	30	30	30	32	27	29	30	26	23	22	25	25	25	**663**
Difference (against S25 declaration)	0	0	0	0	0	0	0	0	1	0	0	0	1	0	3	0	0	2	0	1	0	0	0	0	**8**
Totals																									
Existing S25 totals capacity	32	32	32	32	32	40	52	45	50	54	52	54	54	56	49	47	52	51	46	46	46	44	32	32	**1062**
Proposed S26 totals capacity	32	32	32	32	32	40	54	48	50	54	54	57	57	56	52	47	54	55	48	46	46	45	32	32	**1087**
Difference (against S25 declaration)	0	0	0	0	0	0	2	3	0	0	2	3	3	0	3	0	2	4	2	0	0	1	0	0	**25**

S26 constrained by proposed S26 limits

Hour UTC	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
Arrivals																									
Proposed S26 arrivals capacity	23	23	23	23	23	23	22	28	29	27	30	30	28	28	23	26	28	26	23	26	27	34	28	23	**624**
Arrivals in simulated S26 schedule	4	0	0	7	5	3	22	28	21	23	30	28	27	26	20	17	28	25	22	18	17	34	14	22	**441**
Historic	*4*	*0*	*0*	*7*	*5*	*3*	*14*	*23*	*21*	*23*	*25*	*26*	*26*	*26*	*17*	*17*	*27*	*22*	*17*	*18*	*17*	*24*	*14*	*22*	***398***
Additional arrivals proposed for S26	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*5*	*0*	*0*	*5*	*2*	*1*	*0*	*3*	*0*	*1*	*3*	*5*	*0*	*0*	*10*	*0*	*0*	***43***
Spare capacity (against S26 wishlist)	19	23	23	16	18	20	0	0	8	4	0	2	1	2	3	9	0	1	1	8	10	0	14	1	**183**
Departures																									
Proposed S26 departures capacity	25	25	25	25	25	36	40	25	26	30	27	30	30	30	32	27	29	30	26	23	22	25	25	25	**663**
Departures in simulated S26 schedule	0	2	1	0	14	36	32	20	26	20	24	29	30	24	32	20	26	30	26	23	5	11	4	1	**436**
Historic	*0*	*2*	*1*	*0*	*14*	*36*	*32*	*16*	*22*	*20*	*24*	*27*	*28*	*24*	*27*	*20*	*24*	*27*	*21*	*18*	*5*	*6*	*4*	*1*	***399***
Additional departures proposed for S26	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*4*	*4*	*0*	*0*	*2*	*2*	*0*	*5*	*0*	*2*	*3*	*5*	*5*	*0*	*5*	*0*	*0*	***37***
Spare capacity (against S26 wishlist)	25	23	24	25	11	0	8	5	0	10	3	1	0	6	0	7	3	0	0	0	17	14	21	24	**227**
Totals																									
Wishlist S26 Totals capacity	32	32	32	32	32	40	54	48	50	54	54	57	57	56	52	47	54	55	48	46	46	45	32	32	**1087**
Totals in simulated S26 schedule	4	2	1	7	19	39	54	48	47	43	54	57	57	50	52	37	54	55	48	41	22	45	18	23	**877**
Historic	*4*	*2*	*1*	*7*	*19*	*39*	*46*	*39*	*43*	*43*	*49*	*53*	*54*	*50*	*44*	*37*	*51*	*49*	*38*	*36*	*22*	*30*	*18*	*23*	***797***
Additional movements proposed for S26	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*9*	*4*	*0*	*5*	*4*	*3*	*0*	*8*	*0*	*3*	*6*	*10*	*5*	*0*	*15*	*0*	*0*	***80***
Spare capacity (against S26 wishlist)	28	30	31	25	13	1	0	0	3	11	0	0	0	6	0	10	0	0	0	5	24	0	14	9	**210**

Constraining the S26 schedule by the S25 limits results in spreading the flights into shoulder hours



Some of the additional services envisaged in S26 schedule had to be re-timed to make the flight schedule compatible with the existing S25 declaration. This simulates a case where existing S25 declaration will be rolled forward to Summer 26 season, but all of the new services would still operate – although not necessarily at the originally scheduled times.

S26 constrained by existing S25 limits

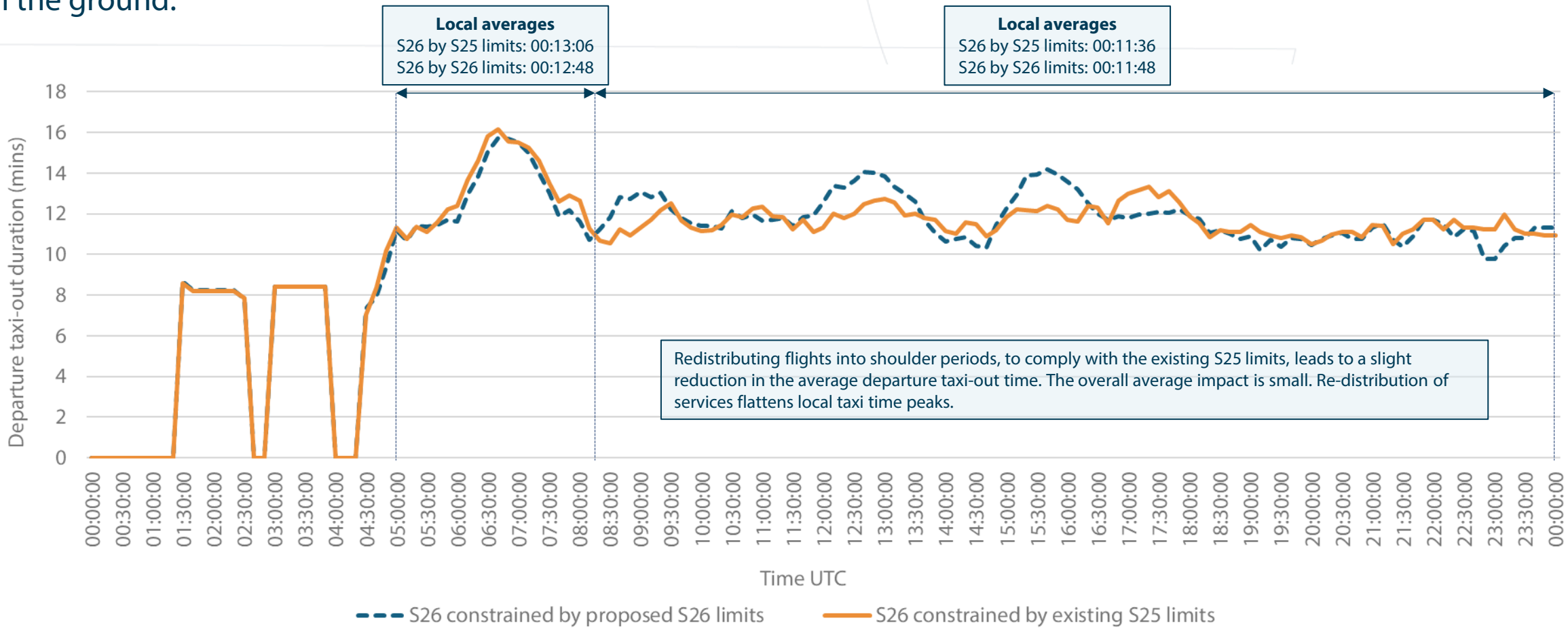
Hour UTC	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
Arrivals																									
Existing S25 arrivals capacity	23	23	23	23	23	23	20	25	29	27	29	30	28	28	23	26	27	26	23	26	27	33	28	23	**616**
Arrivals in simulated S26 schedule	4	0	0	7	9	4	20	25	21	27	28	26	26	27	20	20	27	23	20	20	18	33	14	22	**441**
Historic	*4*	*0*	*0*	*7*	*5*	*3*	*14*	*23*	*21*	*23*	*25*	*26*	*26*	*26*	*17*	*17*	*27*	*22*	*17*	*18*	*17*	*24*	*14*	*22*	***398***
Additional arrivals proposed for S26	*0*	*0*	*0*	*0*	*4*	*1*	*6*	*2*	*0*	*4*	*3*	*0*	*0*	*1*	*3*	*3*	*0*	*1*	*3*	*2*	*1*	*9*	*0*	*0*	***43***
Spare capacity (against S26 wishlist)	19	23	23	16	14	19	0	0	8	0	1	4	2	1	3	6	0	3	3	6	9	0	14	1	**175**
Departures																									
Existing S25 departures capacity	25	25	25	25	25	36	40	25	25	30	27	30	29	30	29	27	29	28	26	22	22	25	25	25	**655**
Departures in simulated S26 schedule	0	2	1	0	14	36	32	20	25	22	24	28	28	29	29	23	25	28	26	22	6	11	4	1	**436**
Historic	*0*	*2*	*1*	*0*	*14*	*36*	*32*	*16*	*22*	*20*	*24*	*27*	*28*	*24*	*27*	*20*	*24*	*27*	*21*	*18*	*5*	*6*	*4*	*1*	***399***
Additional departures proposed for S26	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*4*	*3*	*2*	*0*	*1*	*0*	*5*	*2*	*3*	*1*	*1*	*5*	*4*	*1*	*5*	*0*	*0*	***37***
Spare capacity (against S26 wishlist)	25	23	24	25	11	0	8	5	0	8	3	2	1	1	0	4	4	0	0	0	16	14	21	24	**219**
Totals																									
Existing S25 totals capacity	32	32	32	32	32	40	52	45	50	54	52	54	54	56	49	47	52	51	46	46	46	44	32	32	**1062**
Totals in simulated S26 schedule	4	2	1	7	23	40	52	45	46	49	52	54	54	56	49	43	52	51	46	42	24	44	18	23	**877**
Historic	*4*	*2*	*1*	*7*	*19*	*39*	*46*	*39*	*43*	*43*	*49*	*53*	*54*	*50*	*44*	*37*	*51*	*49*	*38*	*36*	*22*	*30*	*18*	*23*	***797***
Additional movements proposed for S26	*0*	*0*	*0*	*0*	*4*	*1*	*6*	*6*	*3*	*6*	*3*	*1*	*0*	*6*	*5*	*6*	*1*	*2*	*8*	*6*	*2*	*14*	*0*	*0*	***80***
Spare capacity (against S26 wishlist)	28	30	31	25	9	0	0	0	4	5	0	0	0	0	0	4	0	0	0	4	22	0	14	9	**185**

Results (North Runway opened from 0600 UTC)

Departure taxi out time

	S25 limits	S26 limits	Difference
Daily average	00:10:21	00:10:23	00:00:02
Peak	00:16:12	00:15:42	00:00:30

Definition: This metric is defined to be the time period between off-block and the time the aircraft lifts-off. This value is updated every second during the simulation when the aircraft is taxiing for departure even if the aircraft is stopped on the ground.

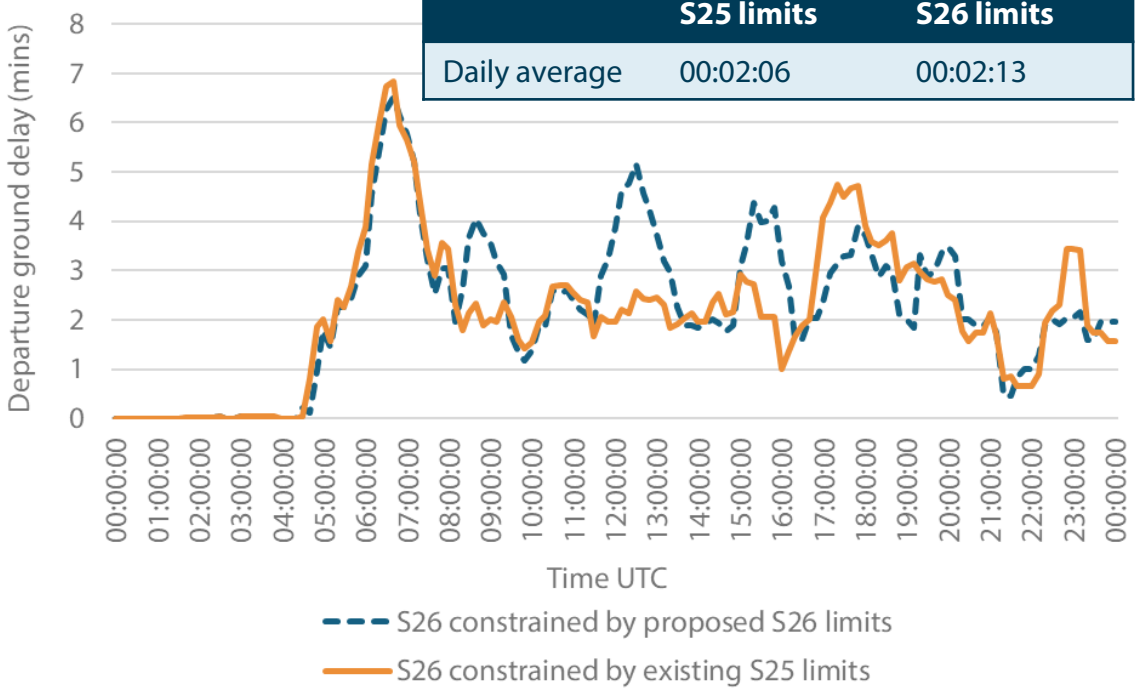


*This graph is presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

Departure ground delay and runway holding delay

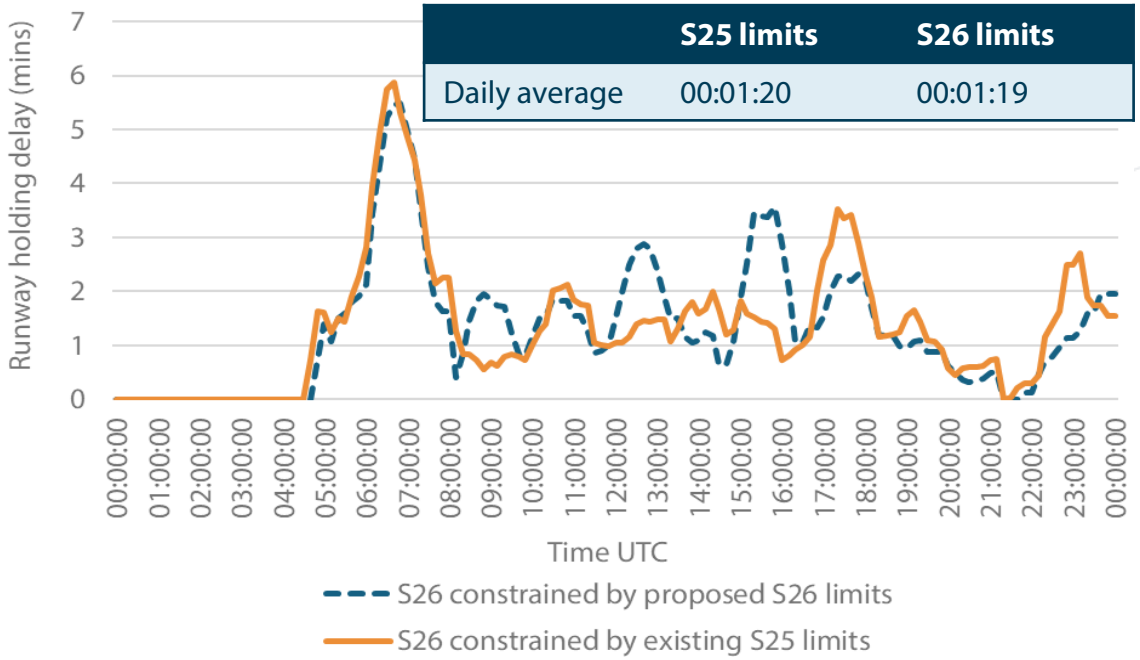
Departure ground delay: Total delay of departing aircraft accumulated between off-block and entering the runway. It is effectively the sum of runway holding delay and other delays.

	S25 limits	S26 limits
Daily average	00:02:06	00:02:13



Runway holding delay: The delay experienced while the aircraft is queueing for runway entry. The delay can be caused by other aircraft (being slowed down or stopped) or when waiting at runway stop-bar (because the runway is not free for lining up). This metric is defined to be the time period between joining the back end of the queue and the time the aircraft reaches its stop bar for runway entry.

	S25 limits	S26 limits
Daily average	00:01:20	00:01:19

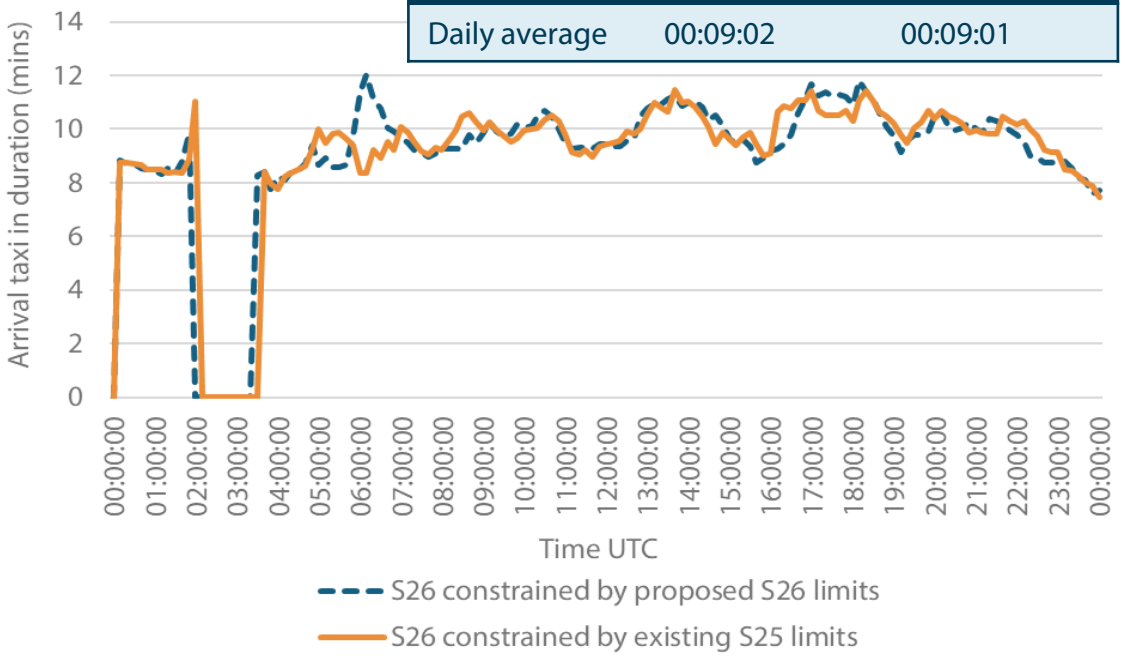


*These graphs are presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

Arrival taxi in time and arrival ground delay

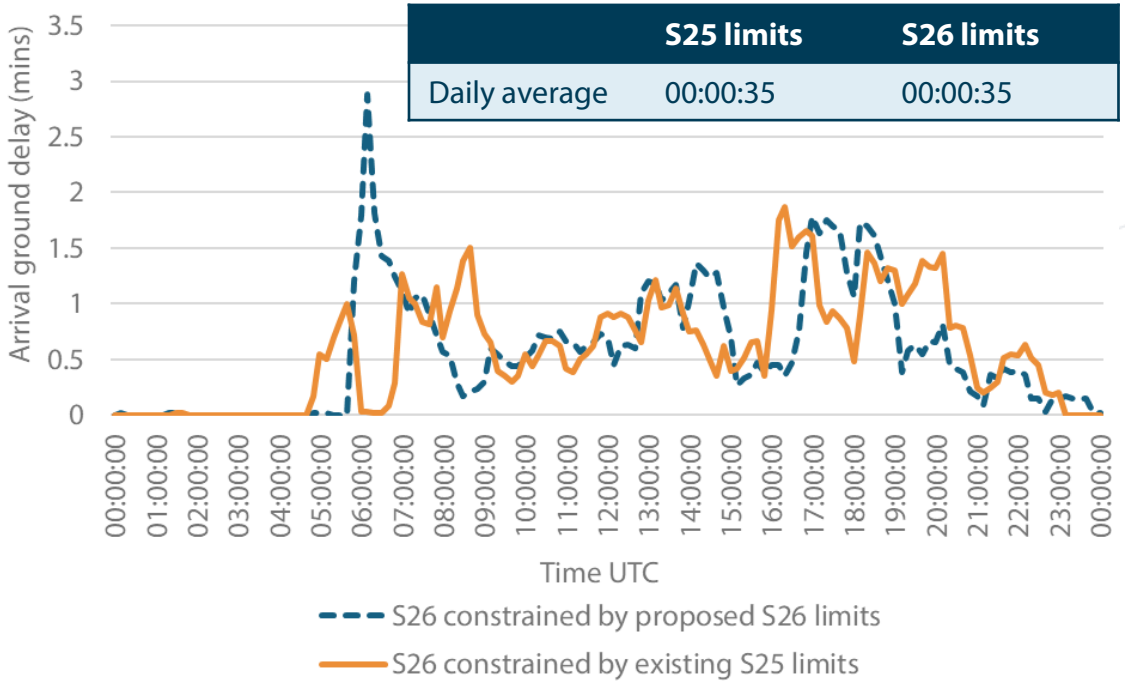
Arrival taxi-in time: The time duration the arriving aircraft has been taxiing on the ground of its arrival airport. This value is updated every second of simulation time when the arriving aircraft is taxiing even if the aircraft is stopped on ground.

	S25 limits	S26 limits
Daily average	00:09:02	00:09:01



Arrival ground delay: The delay caused by traffic (slowing down or being stopped) while the aircraft is taxiing to its arrival stand. Every second of simulation time the aircraft is stopped on ground due to other traffic, the delay is increased accordingly. Additionally, if the aircraft is forced to slow-down due to other traffic, a proportional delay is calculated.

	S25 limits	S26 limits
Daily average	00:00:35	00:00:35



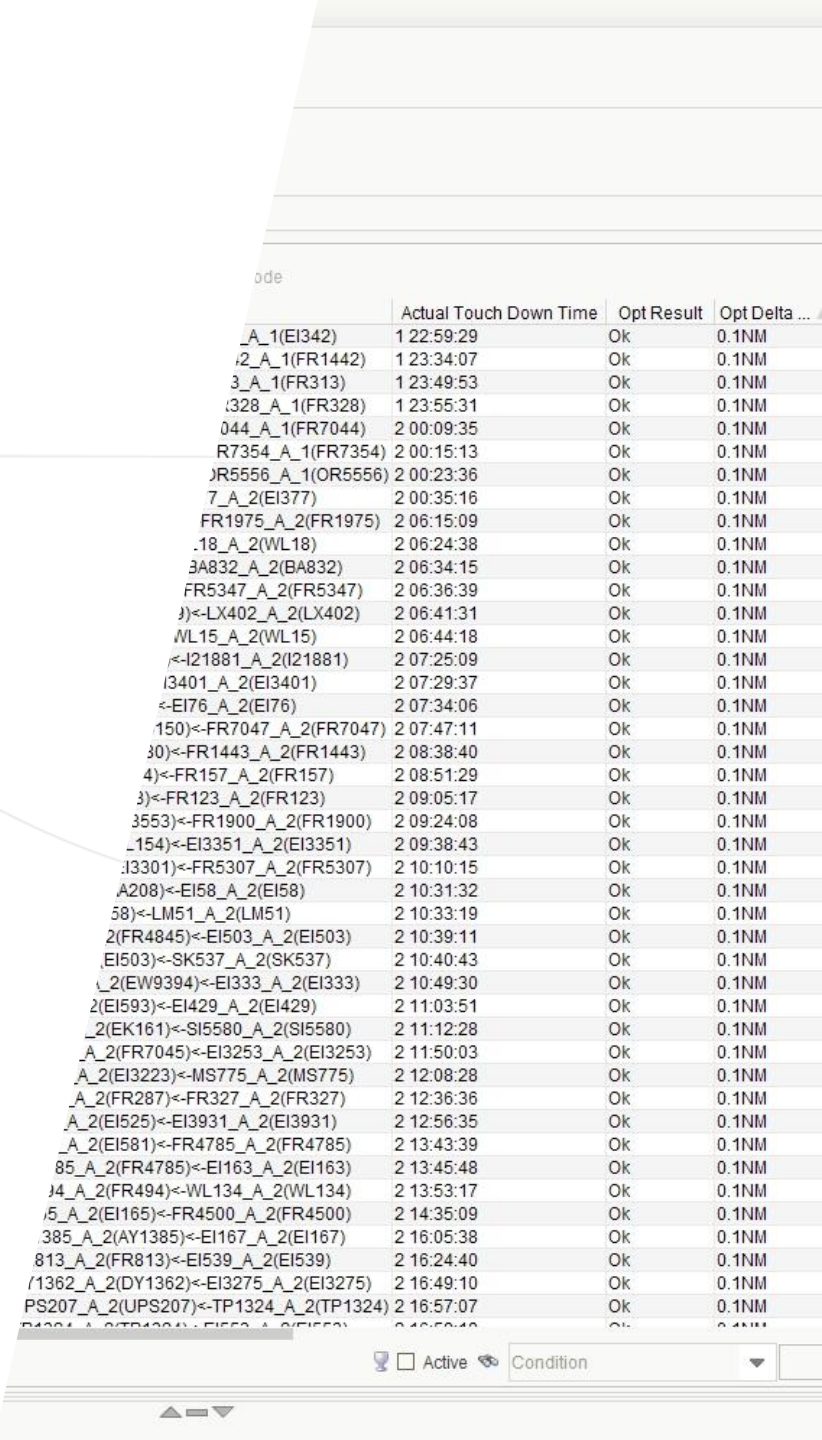
*These graphs are presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

Increasing the RWY limits in line with the S26 Wishlist

- It is likely to lead to scheduled capacity limits being reached during these periods:
  - 0500-0800
  - 1000-1200
  - 1400
  - 1600-1900
  - 2100

- The daily average and morning peak departure taxi out times are on average not materially impacted by declaring additional capacity.

- It is likely to cause localized deterioration of ground delays in and around those hours where capacity increases are proposed.



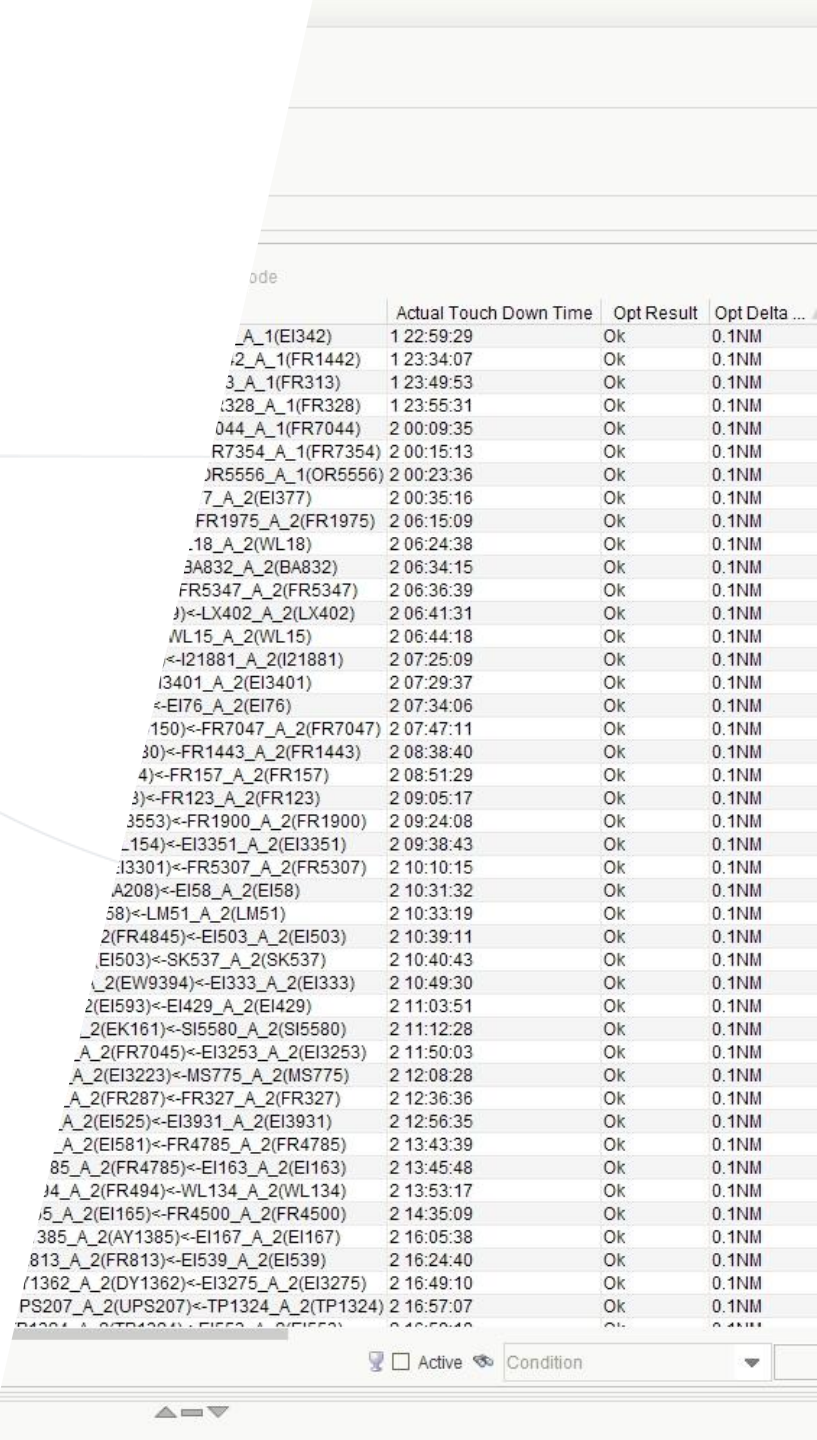
Maintaining the RWY limits in line with the S25 declaration

- It is likely to lead to scheduled capacity limits being reached during these periods:
  - 0500-1400
  - 1600-1900
  - 2100

- It is likely to cause re-distribution of newly planned services to hours with any remaining available capacity. Re-distribution of services flattens local taxi time peaks.

- Local increase in taxi time performance (compared against S26 wishlist schedule) is not expected as flights were typically rescheduled into hours with enough spare capacity.

- The overall impact of keeping S25 limits is small.



	Actual Touch Down Time	Opt Result	Opt Delta ...
_A_1(EI342)	1 22:59:29	Ok	0.1NM
2_A_1(FR1442)	1 23:34:07	Ok	0.1NM
3_A_1(FR313)	1 23:49:53	Ok	0.1NM
328_A_1(FR328)	1 23:55:31	Ok	0.1NM
044_A_1(FR7044)	2 00:09:35	Ok	0.1NM
R7354_A_1(FR7354)	2 00:15:13	Ok	0.1NM
R5556_A_1(OR5556)	2 00:23:36	Ok	0.1NM
7_A_2(EI377)	2 00:35:16	Ok	0.1NM
FR1975_A_2(FR1975)	2 06:15:09	Ok	0.1NM
.18_A_2(WL18)	2 06:24:38	Ok	0.1NM
BA832_A_2(BA832)	2 06:34:15	Ok	0.1NM
FR5347_A_2(FR5347)	2 06:36:39	Ok	0.1NM
)<-LX402_A_2(LX402)	2 06:41:31	Ok	0.1NM
WL15_A_2(WL15)	2 06:44:18	Ok	0.1NM
<-I21881_A_2(I21881)	2 07:25:09	Ok	0.1NM
I3401_A_2(EI3401)	2 07:29:37	Ok	0.1NM
<-EI76_A_2(EI76)	2 07:34:06	Ok	0.1NM
150)<-FR7047_A_2(FR7047)	2 07:47:11	Ok	0.1NM
30)<-FR1443_A_2(FR1443)	2 08:38:40	Ok	0.1NM
4)<-FR157_A_2(FR157)	2 08:51:29	Ok	0.1NM
3)<-FR123_A_2(FR123)	2 09:05:17	Ok	0.1NM
3553)<-FR1900_A_2(FR1900)	2 09:24:08	Ok	0.1NM
_154)<-EI3351_A_2(EI3351)	2 09:38:43	Ok	0.1NM
I3301)<-FR5307_A_2(FR5307)	2 10:10:15	Ok	0.1NM
A208)<-EI58_A_2(EI58)	2 10:31:32	Ok	0.1NM
58)<-LM51_A_2(LM51)	2 10:33:19	Ok	0.1NM
2(FR4845)<-EI503_A_2(EI503)	2 10:39:11	Ok	0.1NM
EI503)<-SK537_A_2(SK537)	2 10:40:43	Ok	0.1NM
_2(EW9394)<-EI333_A_2(EI333)	2 10:49:30	Ok	0.1NM
2(EI593)<-EI429_A_2(EI429)	2 11:03:51	Ok	0.1NM
_2(EK161)<-SI5580_A_2(SI5580)	2 11:12:28	Ok	0.1NM
A_2(FR7045)<-EI3253_A_2(EI3253)	2 11:50:03	Ok	0.1NM
A_2(EI3223)<-MS775_A_2(MS775)	2 12:08:28	Ok	0.1NM
A_2(FR287)<-FR327_A_2(FR327)	2 12:36:36	Ok	0.1NM
A_2(EI525)<-EI3931_A_2(EI3931)	2 12:56:35	Ok	0.1NM
_A_2(EI581)<-FR4785_A_2(FR4785)	2 13:43:39	Ok	0.1NM
85_A_2(FR4785)<-EI163_A_2(EI163)	2 13:45:48	Ok	0.1NM
4_A_2(FR494)<-WL134_A_2(WL134)	2 13:53:17	Ok	0.1NM
5_A_2(EI165)<-FR4500_A_2(FR4500)	2 14:35:09	Ok	0.1NM
385_A_2(AY1385)<-EI167_A_2(EI167)	2 16:05:38	Ok	0.1NM
813_A_2(FR813)<-EI539_A_2(EI539)	2 16:24:40	Ok	0.1NM
1362_A_2(DY1362)<-EI3275_A_2(EI3275)	2 16:49:10	Ok	0.1NM
PS207_A_2(UPS207)<-TP1324_A_2(TP1324)	2 16:57:07	Ok	0.1NM

Active Condition

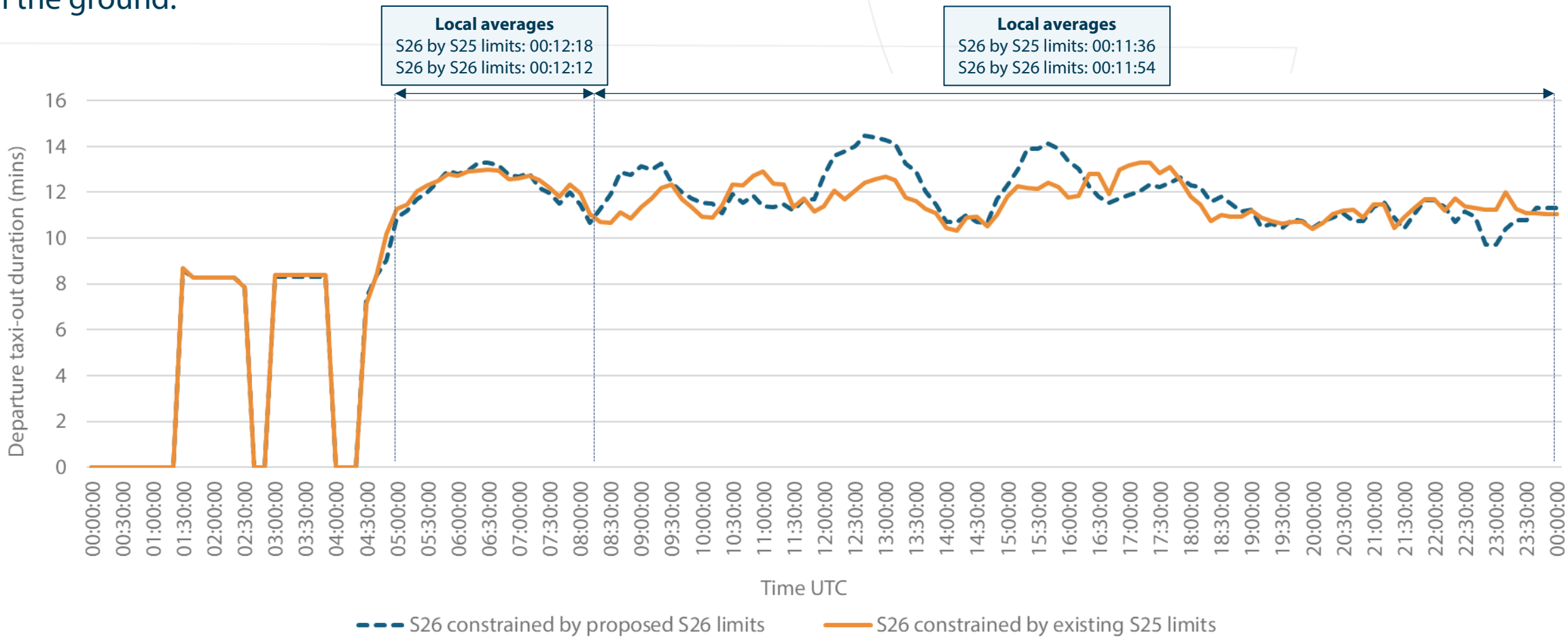
Additional scenario

Results (North Runway opened from 0500 UTC)

Departure taxi out time

	S25 limits	S26 limits	Difference
Daily average	00:10:13	00:10:22	00:00:11
Peak	00:13:18	00:14:30	00:01:12

Definition: This metric is defined to be the time period between off-block and the time the aircraft lifts-off. This value is updated every second during the simulation when the aircraft is taxiing for departure even if the aircraft is stopped on the ground.

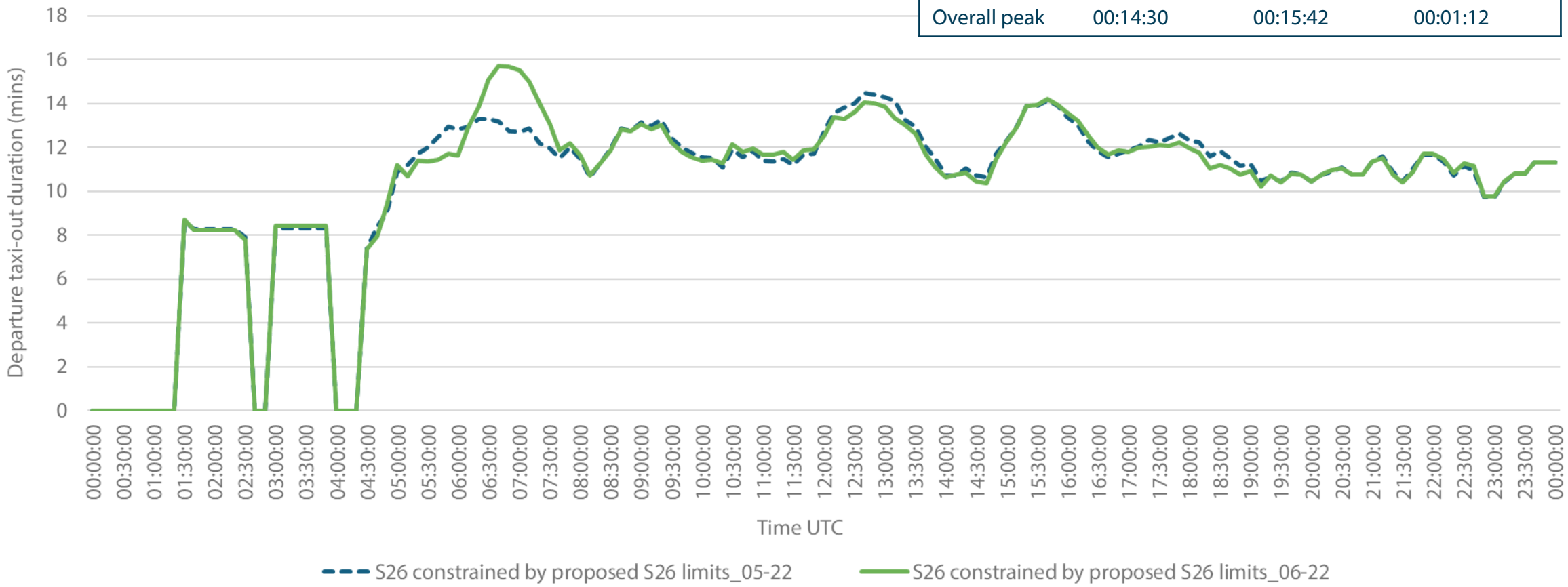


*This graph is presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

Departure taxi out time

Comparison of North Runway opening at 0500 UTC versus 0600 UTC.

	From 0500	From 0600	Difference
Daily average	00:10:22	00:10:23	00:00:01
Morning peak	00:13:18	00:15:42	00:02:24
Overall peak	00:14:30	00:15:42	00:01:12

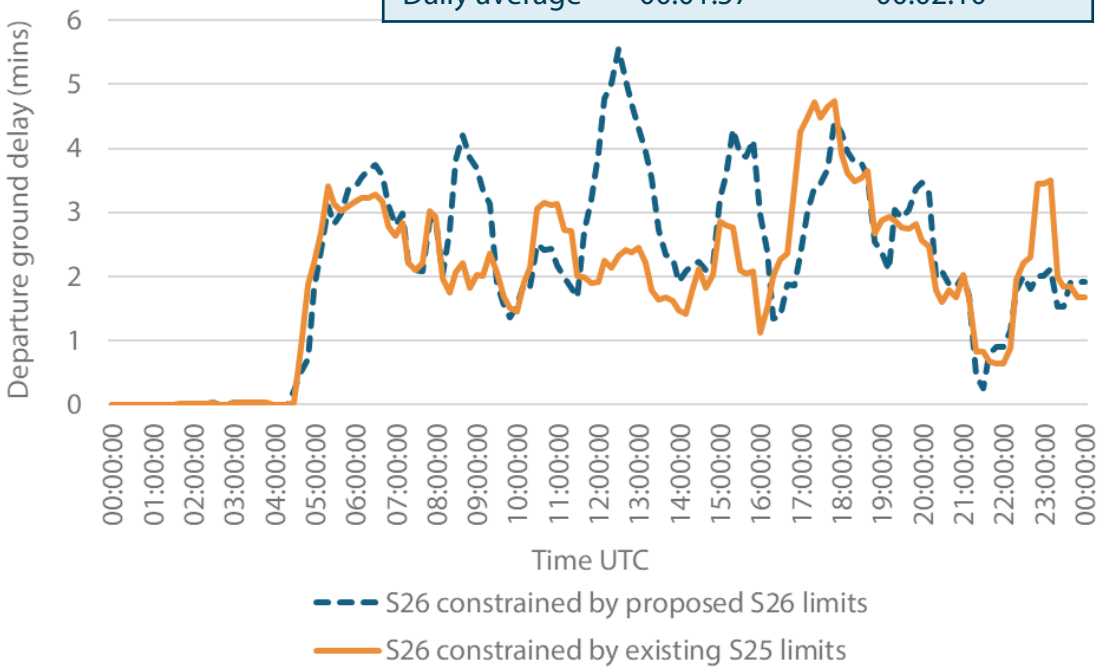


*This graph is presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

Departure ground delay and runway holding delay

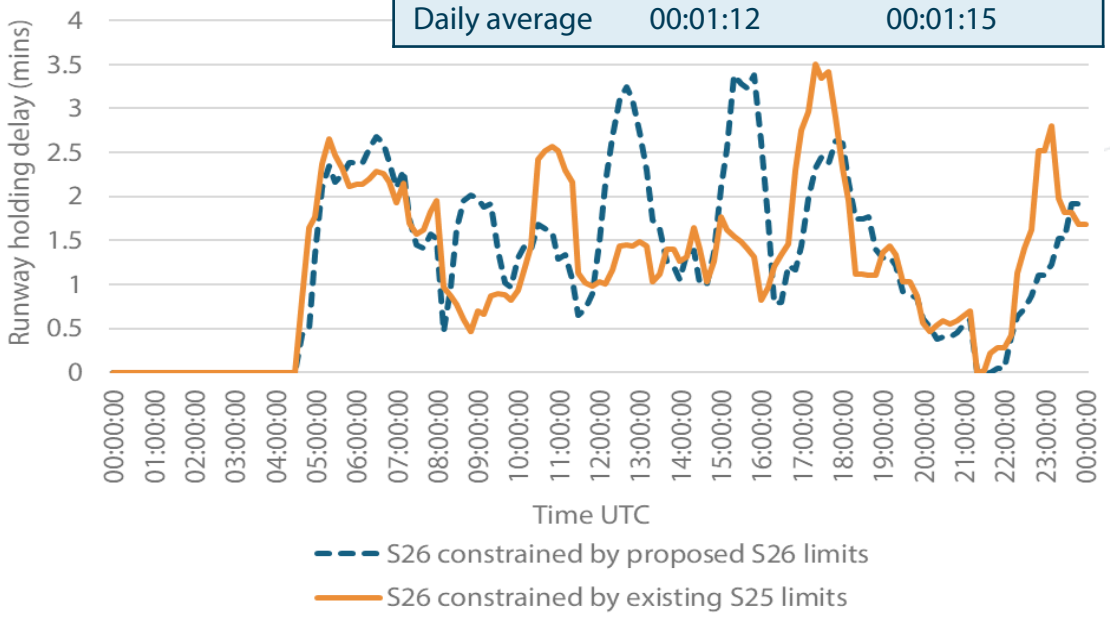
Departure ground delay: Total delay of departing aircraft accumulated between off-block and entering the runway. It is effectively the sum of runway holding delay and other delays.

	S25 limits	S26 limits
Daily average	00:01:57	00:02:10



Runway holding delay: The delay experienced while the aircraft is queueing for runway entry. The delay can be caused by other aircraft (being slowed down or stopped) or when waiting at runway stop-bar (because the runway is not free for lining up). This metric is defined to be the time period between joining the back end of the queue and the time the aircraft reaches its stop bar for runway entry.

	S25 limits	S26 limits
Daily average	00:01:12	00:01:15

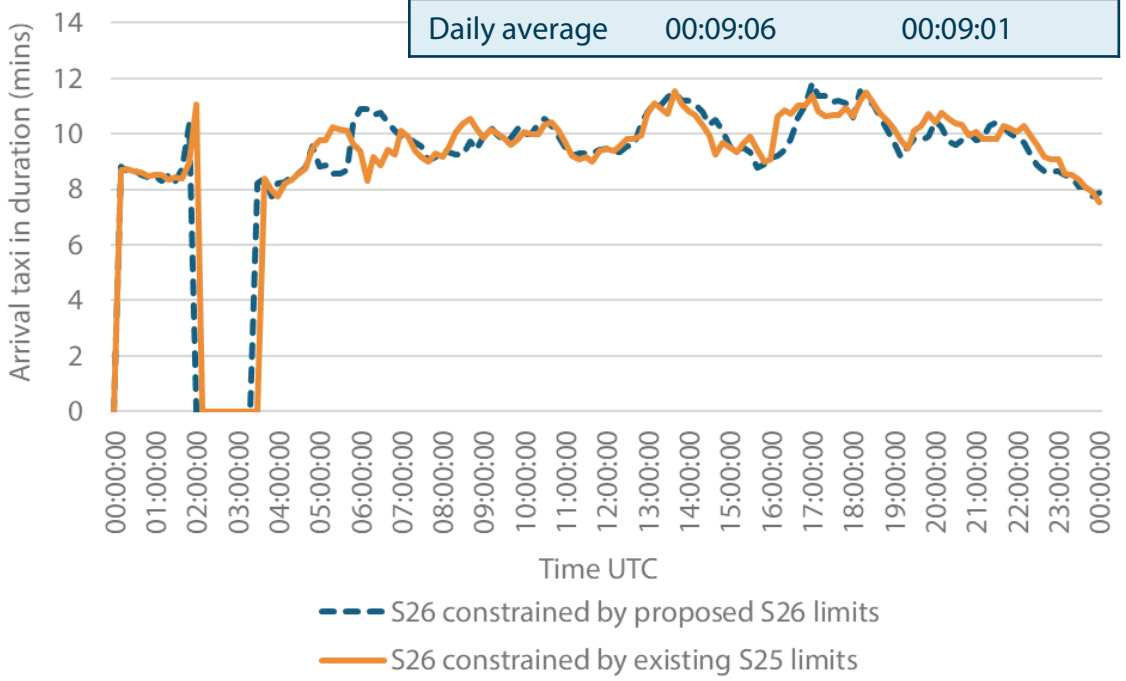


*These graphs are presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).

Arrival taxi in time and arrival ground delay

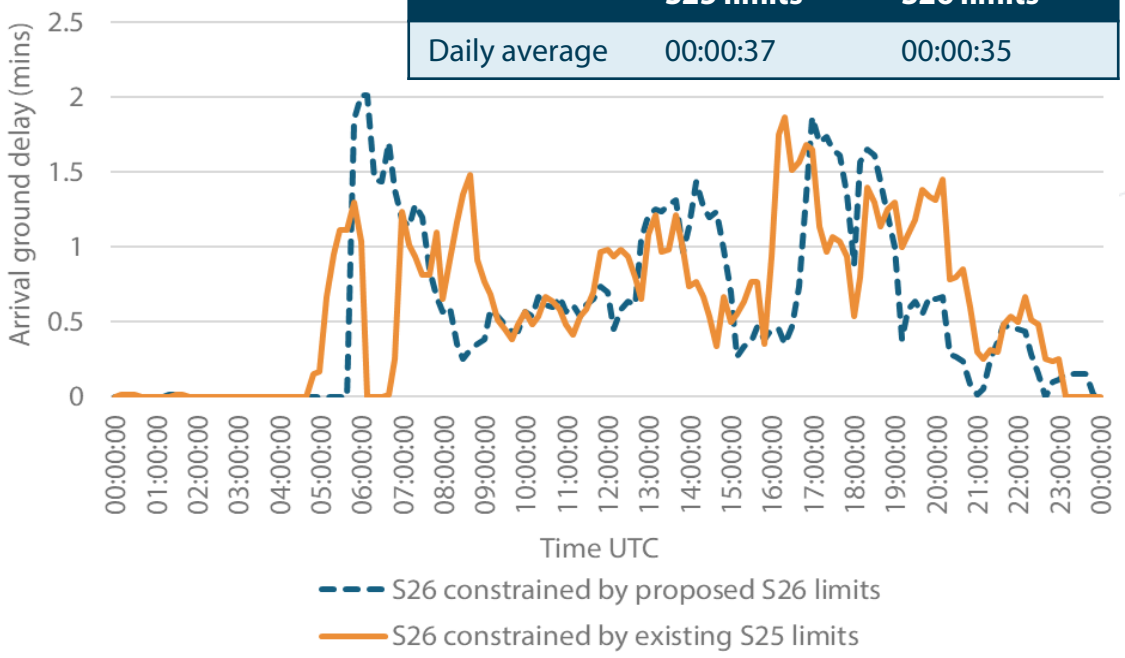
Arrival taxi-in time: The time duration the arriving aircraft has been taxiing on the ground of its arrival airport. This value is updated every second of simulation time when the arriving aircraft is taxiing even if the aircraft is stopped on ground.

	S25 limits	S26 limits
Daily average	00:09:06	00:09:01



Arrival ground delay: The delay caused by traffic (slowing down or being stopped) while the aircraft is taxiing to its arrival stand. Every second of simulation time the aircraft is stopped on ground due to other traffic, the delay is increased accordingly. Additionally, if the aircraft is forced to slow-down due to other traffic, a proportional delay is calculated.

	S25 limits	S26 limits
Daily average	00:00:37	00:00:35



*These graphs are presented as a rolling 10-minute average (value for each time period has been calculated as average of values of all events occurring within the T-60 minutes window from the start of the measurement).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